Mathematica 11.3 Integration Test Results

Test results for the 1328 problems in "4.3.2.1 (a+b tan)^m (c+d tan)^n.m"

Problem 17: Result more than twice size of optimal antiderivative.

$$\int (a + i a \operatorname{Tan}[c + d x])^2 \, dx$$

Optimal (type 3, 38 leaves, 2 steps):

$$2 a^2 x - \frac{2 i a^2 \operatorname{Log}[\operatorname{Cos}[c + d x]]}{d} - \frac{a^2 \operatorname{Tan}[c + d x]}{d}$$

Result (type 3, 100 leaves):

$$-\frac{1}{2 d} a^2 \operatorname{Sec}[c] \operatorname{Sec}[c + d x] \left(4 \operatorname{ArcTan}[\operatorname{Tan}[3 c + d x]] \operatorname{Cos}[c] \operatorname{Cos}[c + d x] - 4 d x \operatorname{Cos}[2 c + d x] + \operatorname{Cos}[d x] \left(-4 d x + i \operatorname{Log}\left[\operatorname{Cos}[c + d x]^2\right]\right) + i \operatorname{Cos}[2 c + d x] \operatorname{Log}\left[\operatorname{Cos}[c + d x]^2\right] + 2 \operatorname{Sin}[d x]\right)$$

Problem 19: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c + d x]^2 (a + i a \operatorname{Tan}[c + d x])^2 \, dx$$

Optimal (type 3, 38 leaves, 3 steps):

$$-2 a^2 x - \frac{a^2 \operatorname{Cot}[c + d x]}{d} + \frac{2 i a^2 \operatorname{Log}[\operatorname{Sin}[c + d x]]}{d}$$

Result (type 3, 100 leaves):

$$\frac{1}{2 d} a^2 \operatorname{Csc}[c] \operatorname{Csc}[c + d x] \left(4 d x \operatorname{Cos}[2 c + d x] + \operatorname{Cos}[d x] \left(-4 d x + i \operatorname{Log}\left[\operatorname{Sin}[c + d x]^2\right]\right) - i \operatorname{Cos}[2 c + d x] \operatorname{Log}\left[\operatorname{Sin}[c + d x]^2\right] + 2 \operatorname{Sin}[d x] + 4 \operatorname{ArcTan}[\operatorname{Tan}[3 c + d x]] \operatorname{Sin}[c] \operatorname{Sin}[c + d x]\right)$$

Problem 24: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c + d x]^3 (a + i a \operatorname{Tan}[c + d x])^3 \, dx$$

Optimal (type 3, 126 leaves, 6 steps):

$$4\,i\,a^3\,x+\frac{4\,a^3\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}-\frac{4\,i\,a^3\,\mathrm{Tan}[c+d\,x]}{d}+\frac{2\,a^3\,\mathrm{Tan}[c+d\,x]^2}{d}+\frac{4\,i\,a^3\,\mathrm{Tan}[c+d\,x]^3}{3\,d}-\frac{11\,a^3\,\mathrm{Tan}[c+d\,x]^4}{20\,d}-\frac{\mathrm{Tan}[c+d\,x]^4\,\left(a^3+i\,a^3\,\mathrm{Tan}[c+d\,x]\right)}{5\,d}$$

Result (type 3, 296 leaves):

$$\frac{1}{240\,d}a^3\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^5\,\Big(105\,\mathrm{Cos}[2\,c+3\,d\,x]+150\,i\,d\,x\,\mathrm{Cos}[2\,c+3\,d\,x]+105\,\mathrm{Cos}[4\,c+3\,d\,x]+150\,i\,d\,x\,\mathrm{Cos}[4\,c+3\,d\,x]+30\,i\,d\,x\,\mathrm{Cos}[4\,c+5\,d\,x]+30\,i\,d\,x\,\mathrm{Cos}[6\,c+5\,d\,x]+75\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+75\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+15\,\mathrm{Cos}[4\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+15\,\mathrm{Cos}[6\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+75\,\mathrm{Cos}[d\,x]\,\left(3+4\,i\,d\,x+2\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)+75\,\mathrm{Cos}[2\,c+d\,x]\,\left(3+4\,i\,d\,x+2\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)-470\,i\,\mathrm{Sin}[d\,x]+360\,i\,\mathrm{Sin}[2\,c+d\,x]-280\,i\,\mathrm{Sin}[2\,c+3\,d\,x]+135\,i\,\mathrm{Sin}[4\,c+3\,d\,x]-83\,i\,\mathrm{Sin}[4\,c+5\,d\,x]\Big)$$

Problem 25: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^2\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 90 leaves, 4 steps):

$$-4\,a^3\,x+\frac{4\,i\,a^3\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+\frac{2\,a^3\,\mathrm{Tan}[c+d\,x]}{d}-\frac{i\,a\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^2}{2\,d}-\frac{i\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4}{4\,a\,d}$$

Result (type 3, 228 leaves):

$$-\frac{1}{8\,d}a^3\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^4\,\Big(-5\,i\,\mathrm{Cos}[3\,c+2\,d\,x]+8\,d\,x\,\mathrm{Cos}[3\,c+2\,d\,x]+2\,d\,x\,\mathrm{Cos}[3\,c+4\,d\,x]+2\,d\,x\,\mathrm{Cos}[5\,c+4\,d\,x]+2\,\mathrm{Cos}[c]\,\left(-4\,i+6\,d\,x-3\,i\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)+\mathrm{Cos}[c+2\,d\,x]\,\left(-5\,i+8\,d\,x-4\,i\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)-4\,i\,\mathrm{Cos}[3\,c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-i\,\mathrm{Cos}[3\,c+4\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-i\,\mathrm{Cos}[5\,c+4\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+15\,\mathrm{Sin}[c]-13\,\mathrm{Sin}[c+2\,d\,x]+7\,\mathrm{Sin}[3\,c+2\,d\,x]-5\,\mathrm{Sin}[3\,c+4\,d\,x]\Big)$$

Problem 26: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 85 leaves, 4 steps):

$$-4\,i\,a^3\,x-\frac{4\,a^3\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+\frac{2\,i\,a^3\,\mathrm{Tan}[c+d\,x]}{d}+\frac{a\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^2}{2\,d}+\frac{\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^3}{3\,d}$$

Result (type 3, 178 leaves):

$$-\frac{1}{12\,d}\,\mathrm{i}\,a^3\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^3\,\Big(6\,d\,x\,\mathrm{Cos}[2\,c+3\,d\,x]+6\,d\,x\,\mathrm{Cos}[4\,c+3\,d\,x]+9\,\mathrm{Cos}[d\,x]\,\left(-\mathrm{i}+2\,d\,x-\mathrm{i}\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)+9\,\mathrm{Cos}[2\,c+d\,x]\,\left(-\mathrm{i}+2\,d\,x-\mathrm{i}\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)-3\,\mathrm{i}\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-3\,\mathrm{i}\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-24\,\mathrm{Sin}[d\,x]+15\,\mathrm{Sin}[2\,c+d\,x]-13\,\mathrm{Sin}[2\,c+3\,d\,x]\Big)$$

Problem 29: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^2\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 69 leaves, 5 steps):

$$-4\,a^3\,x+\frac{\mathrm{i}\,a^3\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+\frac{3\,\mathrm{i}\,a^3\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{\mathrm{Cot}[c+d\,x]\,\left(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[c+d\,x]\right)}{d}$$

Result (type 3, 144 leaves):

$$\frac{1}{8\,d}a^3\,\mathrm{Csc}\left[\frac{c}{2}\right]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\Big(14\,d\,x\,\mathrm{Cos}[2\,c+d\,x]-\mathrm{i}\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+\mathrm{Cos}[d\,x]\,\left(-14\,d\,x+\mathrm{i}\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+3\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\right)-3\,\mathrm{i}\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+4\,\mathrm{Sin}[d\,x]+12\,\mathrm{ArcTan}[\mathrm{Tan}[4\,c+d\,x]]\,\mathrm{Sin}[c]\,\mathrm{Sin}[c+d\,x]\Big)$$

Problem 31: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^4\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 101 leaves, 5 steps):

$$4\,a^3\,x+\frac{2\,a^3\,\mathrm{Cot}[c+d\,x]}{d}-\frac{4\,\mathrm{i}\,a^3\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{\mathrm{i}\,a\,\mathrm{Cot}[c+d\,x]^2\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^2}{2\,d}-\frac{\mathrm{Cot}[c+d\,x]^3\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3}{3\,d}$$

Result (type 3, 251 leaves):

$$\frac{1}{24\,d\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3}\,a^3\,\mathrm{Csc}\left[\frac{c}{2}\right]\,\mathrm{Csc}[c+d\,x]^3\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\left(\mathrm{Cos}[3\,d\,x]+\mathrm{i}\,\mathrm{Sin}[3\,d\,x]\right)\,\Big(9\,\mathrm{i}\,\mathrm{Cos}[2\,c+d\,x]-36\,d\,x\,\mathrm{Cos}[2\,c+d\,x]-12\,d\,x\,\mathrm{Cos}[2\,c+3\,d\,x]+12\,d\,x\,\mathrm{Cos}[4\,c+3\,d\,x]+9\,\mathrm{Cos}[d\,x]\,\left(-\mathrm{i}+4\,d\,x-\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\right)+9\,\mathrm{i}\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+3\,\mathrm{i}\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-3\,\mathrm{i}\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-24\,\mathrm{Sin}[d\,x]-48\,\mathrm{ArcTan}[\mathrm{Tan}[4\,c+d\,x]]\,\mathrm{Sin}[c]\,\mathrm{Sin}[c+d\,x]^3-15\,\mathrm{Sin}[2\,c+d\,x]+13\,\mathrm{Sin}[2\,c+3\,d\,x]\Big)$$

Problem 32: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^5\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 108 leaves, 6 steps):

$$4 i a^3 x+\frac{4 i a^3 \operatorname{Cot}[c+d x]}{d}+\frac{2 a^3 \operatorname{Cot}[c+d x]^2}{d}-\frac{3 i a^3 \operatorname{Cot}[c+d x]^3}{4 d}+\frac{4 a^3 \operatorname{Log}[\operatorname{Sin}[c+d x]]}{d}-\frac{\operatorname{Cot}[c+d x]^4\left(a^3+i a^3 \operatorname{Tan}[c+d x]\right)}{4 d}$$

Result (type 3, 254 leaves):

$$\frac{1}{16 d} a^3 \operatorname{Csc}\left[\frac{c}{2}\right] \operatorname{Csc}[c+d x]^4 \operatorname{Sec}\left[\frac{c}{2}\right] \left(-15 i \operatorname{Cos}[c]+13 i \operatorname{Cos}[c+2 d x]+7 i \operatorname{Cos}[3 c+2 d x]-5 i \operatorname{Cos}[3 c+4 d x]+8 \operatorname{Sin}[c]+12 i d x \operatorname{Sin}[c]+6 \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[c]+5 \operatorname{Sin}[c+2 d x]+8 i d x \operatorname{Sin}[c+2 d x]+4 \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[c+2 d x]-5 \operatorname{Sin}[3 c+2 d x]-8 i d x \operatorname{Sin}[3 c+2 d x]-4 \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[3 c+2 d x]-2 i d x \operatorname{Sin}[3 c+4 d x]-\operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[3 c+4 d x]+2 i d x \operatorname{Sin}[5 c+4 d x]+\operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[5 c+4 d x]\right)$$

Problem 33: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c+d x]^6 \left(a+i a \operatorname{Tan}[c+d x]\right)^3 dx$$

Optimal (type 3, 126 leaves, 7 steps):

$$-4 a^3 x-\frac{4 a^3 \operatorname{Cot}[c+d x]}{d}+\frac{2 i a^3 \operatorname{Cot}[c+d x]^2}{d}+\frac{4 a^3 \operatorname{Cot}[c+d x]^3}{3 d}-\frac{11 i a^3 \operatorname{Cot}[c+d x]^4}{20 d}+\frac{4 i a^3 \operatorname{Log}[\operatorname{Sin}[c+d x]]}{d}-\frac{\operatorname{Cot}[c+d x]^5\left(a^3+i a^3 \operatorname{Tan}[c+d x]\right)}{5 d}$$

Result (type 3, 359 leaves):

$$\frac{1}{240 d \left(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x]\right)^3} a^3 \operatorname{Csc}[c] \operatorname{Csc}[c+d x]^5 \left(\operatorname{Cos}[3 d x]+i \operatorname{Sin}[3 d x]\right) \left(-225 i \operatorname{Cos}[2 c+d x]+600 d x \operatorname{Cos}[2 c+d x]-105 i \operatorname{Cos}[2 c+3 d x]+300 d x \operatorname{Cos}[2 c+3 d x]+105 i \operatorname{Cos}[4 c+3 d x]-300 d x \operatorname{Cos}[4 c+3 d x]-60 d x \operatorname{Cos}[4 c+5 d x]+60 d x \operatorname{Cos}[6 c+5 d x]-75 \operatorname{Cos}[d x]\left(-3 i+8 d x-2 i \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]\right)-150 i \operatorname{Cos}[2 c+d x] \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]-75 i \operatorname{Cos}[2 c+3 d x] \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]+75 i \operatorname{Cos}[4 c+3 d x] \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]+15 i \operatorname{Cos}[4 c+5 d x] \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]-15 i \operatorname{Cos}[6 c+5 d x] \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]+470 \operatorname{Sin}[d x]+960 \operatorname{ArcTan}[\operatorname{Tan}[4 c+d x]] \operatorname{Sin}[c] \operatorname{Sin}[c+d x]^5+360 \operatorname{Sin}[2 c+d x]-280 \operatorname{Sin}[2 c+3 d x]-135 \operatorname{Sin}[4 c+3 d x]+83 \operatorname{Sin}[4 c+5 d x]\right)$$

Problem 34: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c+d x]^3 \left(a+i a \operatorname{Tan}[c+d x]\right)^4 dx$$

Optimal (type 3, 160 leaves, 7 steps):

$$8 i a^4 x+\frac{8 a^4 \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}-\frac{8 i a^4 \operatorname{Tan}[c+d x]}{d}+\frac{4 a^4 \operatorname{Tan}[c+d x]^2}{d}+\frac{8 i a^4 \operatorname{Tan}[c+d x]^3}{3 d}-\frac{67 a^4 \operatorname{Tan}[c+d x]^4}{60 d}-\frac{\operatorname{Tan}[c+d x]^4\left(a^2+i a^2 \operatorname{Tan}[c+d x]\right)^2}{6 d}-\frac{7 \operatorname{Tan}[c+d x]^4\left(a^4+i a^4 \operatorname{Tan}[c+d x]\right)}{15 d}$$

Result (type 3, 349 leaves):

$$\frac{1}{240\,d} a^4 \operatorname{Sec}[c] \operatorname{Sec}[c+d x]^6 \big(345 \operatorname{Cos}[3 c+2 d x]+450 \, i \, d x \operatorname{Cos}[3 c+2 d x]+120 \operatorname{Cos}[3 c+4 d x]+180 \, i \, d x \operatorname{Cos}[3 c+4 d x]+120 \operatorname{Cos}[5 c+4 d x]+180 \, i \, d x \operatorname{Cos}[5 c+4 d x]+30 \, i \, d x \operatorname{Cos}[5 c+6 d x]+30 \, i \, d x \operatorname{Cos}[7 c+6 d x]+225 \operatorname{Cos}[3 c+2 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]+90 \operatorname{Cos}[3 c+4 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]+90 \operatorname{Cos}[5 c+4 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]+15 \operatorname{Cos}[5 c+6 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]+15 \operatorname{Cos}[7 c+6 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]+15 \operatorname{Cos}[c+2 d x] \big(23+30 \, i \, d x+15 \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]\big)+10 \operatorname{Cos}[c] \big(49+60 \, i \, d x+30 \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]\big)+860 \, i \operatorname{Sin}[c]-780 \, i \operatorname{Sin}[c+2 d x]+510 \, i \operatorname{Sin}[3 c+2 d x]-366 \, i \operatorname{Sin}[3 c+4 d x]+150 \, i \operatorname{Sin}[5 c+4 d x]-86 \, i \operatorname{Sin}[5 c+6 d x]\big)$$

Problem 35: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c+d x]^2 \,(a+i\, a \operatorname{Tan}[c+d x])^4 \, dx$$

Optimal (type 3, 116 leaves, 5 steps):

$$-8 a^4 x+\frac{8 \, i \, a^4 \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}+\frac{4 a^4 \operatorname{Tan}[c+d x]}{d}-\frac{i\, a \,(a+i\, a \operatorname{Tan}[c+d x])^3}{3 d}-\frac{i\,(a+i\, a \operatorname{Tan}[c+d x])^5}{5 a d}-\frac{i\,\big(a^2+i\, a^2 \operatorname{Tan}[c+d x]\big)^2}{d}$$

Result (type 3, 294 leaves):

$$-\frac{1}{120\,d} a^4 \operatorname{Sec}[c] \operatorname{Sec}[c+d x]^5 \big(-90 \, i \operatorname{Cos}[2 c+3 d x]+150 \, d x \operatorname{Cos}[2 c+3 d x]-90 \, i \operatorname{Cos}[4 c+3 d x]+150 \, d x \operatorname{Cos}[4 c+3 d x]+30 \, d x \operatorname{Cos}[4 c+5 d x]+30 \, d x \operatorname{Cos}[6 c+5 d x]+30 \operatorname{Cos}[d x] \big(-7 \, i+10 \, d x-5 \, i \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]\big)+30 \operatorname{Cos}[2 c+d x] \big(-7 \, i+10 \, d x-5 \, i \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]\big)-75 \, i \operatorname{Cos}[2 c+3 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]-75 \, i \operatorname{Cos}[4 c+3 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]-15 \, i \operatorname{Cos}[4 c+5 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]-15 \, i \operatorname{Cos}[6 c+5 d x] \operatorname{Log}\big[\operatorname{Cos}[c+d x]^2\big]-445 \operatorname{Sin}[d x]+345 \operatorname{Sin}[2 c+d x]-275 \operatorname{Sin}[2 c+3 d x]+120 \operatorname{Sin}[4 c+3 d x]-79 \operatorname{Sin}[4 c+5 d x]\big)$$

Problem 36: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c+d x] \,(a+i\, a \operatorname{Tan}[c+d x])^4 \, dx$$

Optimal (type 3, 108 leaves, 5 steps):

$$-8 \, i \, a^4 x-\frac{8 a^4 \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}+\frac{4 \, i \, a^4 \operatorname{Tan}[c+d x]}{d}+\frac{a\,(a+i\, a \operatorname{Tan}[c+d x])^3}{3 d}+\frac{(a+i\, a \operatorname{Tan}[c+d x])^4}{4 d}+\frac{\big(a^2+i\, a^2 \operatorname{Tan}[c+d x]\big)^2}{d}$$

Result (type 3, 231 leaves):

$$-\frac{1}{12\,d}\,i\,a^4\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^4\,\Big(-12\,i\,\mathrm{Cos}[3\,c+2\,d\,x]+24\,d\,x\,\mathrm{Cos}[3\,c+2\,d\,x]+6\,d\,x\,\mathrm{Cos}[3\,c+4\,d\,x]+6\,d\,x\,\mathrm{Cos}[5\,c+4\,d\,x]+12\,\mathrm{Cos}[c+2\,d\,x]\,\left(-i+2\,d\,x-i\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)+3\,\mathrm{Cos}[c]\,\left(-7\,i+12\,d\,x-6\,i\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\right)-12\,i\,\mathrm{Cos}[3\,c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-3\,i\,\mathrm{Cos}[3\,c+4\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-3\,i\,\mathrm{Cos}[5\,c+4\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+42\,\mathrm{Sin}[c]-38\,\mathrm{Sin}[c+2\,d\,x]+18\,\mathrm{Sin}[3\,c+2\,d\,x]-14\,\mathrm{Sin}[3\,c+4\,d\,x]\Big)$$

Problem 39: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^2\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\,dx$$

Optimal (type 3, 71 leaves, 5 steps):

$$-8\,a^4\,x+\frac{4\,i\,a^4\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+\frac{4\,i\,a^4\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{\mathrm{Cot}[c+d\,x]\,\left(a^2+i\,a^2\,\mathrm{Tan}[c+d\,x]\right)^2}{d}$$

Result (type 3, 151 leaves):

$$\frac{1}{4\,d}a^4\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]\,\Big(6\,d\,x\,\mathrm{Cos}[4\,c+2\,d\,x]-i\,\mathrm{Cos}[4\,c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+\mathrm{Cos}[2\,d\,x]\,\left(-6\,d\,x+i\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]+i\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\right)-i\,\mathrm{Cos}[4\,c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+2\,\mathrm{Sin}[2\,d\,x]+4\,\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Sin}[2\,c]\,\mathrm{Sin}\left[2\,(c+d\,x)\right]\Big)$$

Problem 41: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^4\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\,dx$$

Optimal (type 3, 103 leaves, 5 steps):

$$8\,a^4\,x+\frac{4\,a^4\,\mathrm{Cot}[c+d\,x]}{d}-\frac{8\,i\,a^4\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a\,\mathrm{Cot}[c+d\,x]^3\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^3}{3\,d}-\frac{i\,\mathrm{Cot}[c+d\,x]^2\,\left(a^2+i\,a^2\,\mathrm{Tan}[c+d\,x]\right)^2}{d}$$

Result (type 3, 240 leaves):

$$\frac{1}{6\,d\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4}a^4\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]^3\,\left(\mathrm{Cos}[4\,d\,x]+i\,\mathrm{Sin}[4\,d\,x]\right)\Big(6\,i\,\mathrm{Cos}[2\,c+d\,x]-36\,d\,x\,\mathrm{Cos}[2\,c+d\,x]-12\,d\,x\,\mathrm{Cos}[2\,c+3\,d\,x]+12\,d\,x\,\mathrm{Cos}[4\,c+3\,d\,x]+\mathrm{Cos}[d\,x]\,\left(-6\,i+36\,d\,x-9\,i\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\right)+9\,i\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+3\,i\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-3\,i\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-21\,\mathrm{Sin}[d\,x]-48\,\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Sin}[c]\,\mathrm{Sin}[c+d\,x]^3-12\,\mathrm{Sin}[2\,c+d\,x]+11\,\mathrm{Sin}[2\,c+3\,d\,x]\Big)$$

Problem 43: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^6\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\,dx$$

Optimal (type 3, 142 leaves, 7 steps):

$$-8 a^4 x-\frac{8 a^4 \mathrm{Cot}[c+d x]}{d}+\frac{4 i a^4 \mathrm{Cot}[c+d x]^2}{d}+\frac{23 a^4 \mathrm{Cot}[c+d x]^3}{15 d}+\frac{8 i a^4 \mathrm{Log}[\mathrm{Sin}[c+d x]]}{d}-\frac{\mathrm{Cot}[c+d x]^5\left(a^2+i a^2 \mathrm{Tan}[c+d x]\right)^2}{5 d}-\frac{3 i \mathrm{Cot}[c+d x]^4\left(a^4+i a^4 \mathrm{Tan}[c+d x]\right)}{5 d}$$

Result (type 3, 740 leaves):

$$a^4\left(\left((i+\mathrm{Cot}[c+d x])^4 \mathrm{Csc}[c](-\mathrm{Cos}[c]-5 i \mathrm{Sin}[c])\left(\frac{1}{5}\mathrm{Cos}[4 c]-\frac{1}{5} i \mathrm{Sin}[4 c]\right)\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)+\left((i+\mathrm{Cot}[c+d x])^4 \mathrm{Csc}[c] \mathrm{Csc}[c+d x]\left(\frac{1}{5}\mathrm{Cos}[4 c]-\frac{1}{5} i \mathrm{Sin}[4 c]\right) \mathrm{Sin}[d x]\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)+\left((i+\mathrm{Cot}[c+d x])^4 \mathrm{Csc}[c]\left(-\frac{41}{15}\mathrm{Cos}[4 c]+\frac{41}{15} i \mathrm{Sin}[4 c]\right) \mathrm{Sin}[d x] \mathrm{Sin}[c+d x]\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)+\left((i+\mathrm{Cot}[c+d x])^4 \mathrm{Csc}[c](41 \mathrm{Cos}[c]+90 i \mathrm{Sin}[c])\left(\frac{1}{15}\mathrm{Cos}[4 c]-\frac{1}{15} i \mathrm{Sin}[4 c]\right) \mathrm{Sin}[c+d x]^2\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)+\left((i+\mathrm{Cot}[c+d x])^4 \mathrm{Csc}[c]\left(\frac{158}{15}\mathrm{Cos}[4 c]-\frac{158}{15} i \mathrm{Sin}[4 c]\right) \mathrm{Sin}[d x] \mathrm{Sin}[c+d x]^3\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)-\frac{8 x \mathrm{Cos}[4 c](i+\mathrm{Cot}[c+d x])^4 \mathrm{Sin}[c+d x]^4}{(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4}+\frac{8 \mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]] \mathrm{Cos}[4 c](i+\mathrm{Cot}[c+d x])^4 \mathrm{Sin}[c+d x]^4}{d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4}+\frac{4 i \mathrm{Cos}[4 c](i+\mathrm{Cot}[c+d x])^4 \mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right] \mathrm{Sin}[c+d x]^4}{d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4}+\left(x(i+\mathrm{Cot}[c+d x])^4\left(-40 \mathrm{Cos}[c]^4-8 i \mathrm{Cos}[c]^4 \mathrm{Cot}[c]+80 i \mathrm{Cos}[c]^3 \mathrm{Sin}[c]+80 \mathrm{Cos}[c]^2 \mathrm{Sin}[c]^2-40 i \mathrm{Cos}[c] \mathrm{Sin}[c]^3-8 \mathrm{Sin}[c]^4+i \mathrm{Cot}[c](8 \mathrm{Cos}[4 c]-8 i \mathrm{Sin}[4 c])\right) \mathrm{Sin}[c+d x]^4\right)\Big/(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4+\frac{8 i x(i+\mathrm{Cot}[c+d x])^4 \mathrm{Sin}[4 c] \mathrm{Sin}[c+d x]^4}{(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4}-\left(8 i \mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]](i+\mathrm{Cot}[c+d x])^4 \mathrm{Sin}[4 c] \mathrm{Sin}[c+d x]^4\right)\Big/\left(d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4\right)+\frac{4(i+\mathrm{Cot}[c+d x])^4 \mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right] \mathrm{Sin}[4 c] \mathrm{Sin}[c+d x]^4}{d(\mathrm{Cos}[d x]+i \mathrm{Sin}[d x])^4}\right)$$

Problem 44: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d x]^7(a+i a \mathrm{Tan}[c+d x])^4\, dx$$

Optimal (type 3, 162 leaves, 8 steps):

$$-8 i a^4 x - \frac{8 i a^4 \text{Cot}[c+d x]}{d} - \frac{4 a^4 \text{Cot}[c+d x]^2}{d} + \frac{8 i a^4 \text{Cot}[c+d x]^3}{3 d} + \frac{67 a^4 \text{Cot}[c+d x]^4}{60 d} - \frac{8 a^4 \text{Log}[\text{Sin}[c+d x]]}{d} - \frac{\text{Cot}[c+d x]^6 \left(a^2 + i a^2 \text{Tan}[c+d x]\right)^2}{6 d} - \frac{7 i \text{Cot}[c+d x]^5 \left(a^4 + i a^4 \text{Tan}[c+d x]\right)}{15 d}$$

Result (type 3, 363 leaves):

$$\frac{1}{240 d} a^4 \text{Csc}[c] \text{Csc}[c+d x]^6 \left(860 i \text{Cos}[c] - 780 i \text{Cos}[c+2 d x] - 510 i \text{Cos}[3 c+2 d x] + 366 i \text{Cos}[3 c+4 d x] + 150 i \text{Cos}[5 c+4 d x] - 86 i \text{Cos}[5 c+6 d x] - 490 \text{Sin}[c] - 600 i d x \text{Sin}[c] - 300 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[c] - 345 \text{Sin}[c+2 d x] - 450 i d x \text{Sin}[c+2 d x] - 225 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[c+2 d x] + 345 \text{Sin}[3 c+2 d x] + 450 i d x \text{Sin}[3 c+2 d x] + 225 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[3 c+2 d x] + 120 \text{Sin}[3 c+4 d x] + 180 i d x \text{Sin}[3 c+4 d x] + 90 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[3 c+4 d x] - 120 \text{Sin}[5 c+4 d x] - 180 i d x \text{Sin}[5 c+4 d x] - 90 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[5 c+4 d x] - 30 i d x \text{Sin}[5 c+6 d x] - 15 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[5 c+6 d x] + 30 i d x \text{Sin}[7 c+6 d x] + 15 \text{Log}\left[\text{Sin}[c+d x]^2\right] \text{Sin}[7 c+6 d x]\right)$$

Problem 45: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^6}{a + i a \text{Tan}[c+d x]} \, dx$$

Optimal (type 3, 130 leaves, 6 steps):

$$\frac{5 x}{2 a} + \frac{3 i \text{Log}[\text{Cos}[c+d x]]}{a d} - \frac{5 \text{Tan}[c+d x]}{2 a d} + \frac{3 i \text{Tan}[c+d x]^2}{2 a d} + \frac{5 \text{Tan}[c+d x]^3}{6 a d} - \frac{3 i \text{Tan}[c+d x]^4}{4 a d} - \frac{\text{Tan}[c+d x]^5}{2 d \left(a + i a \text{Tan}[c+d x]\right)}$$

Result (type 3, 840 leaves):

$$\frac{5\,x\,\text{Cos}[c]\,\text{Sec}[c+d\,x]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\frac{3\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Cos}[c]\,\text{Sec}[c+d\,x]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\frac{3\,i\,\text{Cos}[c]\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{2\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\left(\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]\,\left(-\frac{1}{4}\,i\,\text{Cos}[c]-\frac{\text{Sin}[c]}{4}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(\frac{1}{6}\,i\,\text{Cos}[c]-\frac{\text{Sin}[c]}{6}\right)\,\left(9\,\text{Cos}[c]-2\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\right)\Big/$$
$$\left(d\,\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)\right)+$$

$$\frac{\text{Sec}[c+d\,x]^5\,\left(-\frac{1}{4}\,i\,\text{Cos}[c]+\frac{\text{Sin}[c]}{4}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\frac{5\,i\,x\,\text{Sec}[c+d\,x]\,\text{Sin}[c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\frac{3\,i\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}-$$

$$\frac{3\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)}{2\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)}+$$

$$\left(\text{Sec}[c+d\,x]\,\left(-\frac{\text{Cos}[c]}{4}+\frac{1}{4}\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\,\text{Sin}[2\,d\,x]\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)\right)+\left(7\,i\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\right.$$
$$\left.\left(-\text{Cos}[c-d\,x]+\text{Cos}[c+d\,x]-i\,\text{Sin}[c-d\,x]+i\,\text{Sin}[c+d\,x]\right)\right)\Big/$$
$$\left(6\,d\,\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)\right)-\left(i\,\text{Sec}[c+d\,x]^4\right.$$
$$\left.\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\,\left(-\text{Cos}[c-d\,x]+\text{Cos}[c+d\,x]-i\,\text{Sin}[c-d\,x]+i\,\text{Sin}[c+d\,x]\right)\right)\Big/$$
$$\left(6\,d\,\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)\right)+$$
$$\left(x\,\text{Sec}[c+d\,x]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)\,\left(-3\,\text{Sec}[c]-i\,\left(3\,\text{Cos}[c]+3\,i\,\text{Sin}[c]\right)\,\text{Tan}[c]\right)\right)\Big/$$
$$\left(a+i\,a\,\text{Tan}[c+d\,x]\right)$$

Problem 46: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^5}{a+i\,a\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 109 leaves, 5 steps) :

$$-\frac{5\,\mathrm{i}\,x}{2\,a}+\frac{2\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{a\,d}+\frac{5\,\mathrm{i}\,\mathrm{Tan}[c+d\,x]}{2\,a\,d}+\frac{\mathrm{Tan}[c+d\,x]^2}{a\,d}-\frac{5\,\mathrm{i}\,\mathrm{Tan}[c+d\,x]^3}{6\,a\,d}-\frac{\mathrm{Tan}[c+d\,x]^4}{2\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}$$

Result (type 3, 775 leaves):

$$-\frac{5\,\mathrm{i}\,x\,\mathrm{Cos}[c]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{2\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}-\frac{2\,\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[c]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+\frac{\mathrm{Cos}[c]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+$$

$$\left(\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]\,\left(-\frac{\mathrm{Cos}[c]}{4}+\frac{1}{4}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\right)\Big/\left(d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])\right)+$$

$$\left(\mathrm{Sec}[c+d\,x]^3\,\left(\frac{\mathrm{Cos}[c]}{6}+\frac{1}{6}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\,(3\,\mathrm{Cos}[c]-2\,\mathrm{i}\,\mathrm{Sin}[c])\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\right)\Big/\left(d\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])\right)+$$

$$\frac{5\,x\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}[c]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{2\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+\frac{2\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}[c]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+\frac{\mathrm{i}\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}[c]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])}{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+$$

$$\frac{\mathrm{Sec}[c+d\,x]\,\left(\frac{1}{4}\,\mathrm{i}\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{4}\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\,\mathrm{Sin}[2\,d\,x]}{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])}+\Big(\mathrm{Sec}[c+d\,x]^4\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\,(\mathrm{Cos}[c-d\,x]-\mathrm{Cos}[c+d\,x]+\mathrm{i}\,\mathrm{Sin}[c-d\,x]-\mathrm{i}\,\mathrm{Sin}[c+d\,x])\Big)\Big/$$

$$\left(6\,d\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])\right)+\Big(7\,\mathrm{Sec}[c+d\,x]^2\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\,(-\mathrm{Cos}[c-d\,x]+\mathrm{Cos}[c+d\,x]-\mathrm{i}\,\mathrm{Sin}[c-d\,x]+\mathrm{i}\,\mathrm{Sin}[c+d\,x])\Big)\Big/$$

$$\left(6\,d\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])\right)+$$

$$\Big(x\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])\,(2\,\mathrm{i}\,\mathrm{Sec}[c]+(-2\,\mathrm{Cos}[c]-2\,\mathrm{i}\,\mathrm{Sin}[c])\,\mathrm{Tan}[c])\Big)\Big/(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])$$

Problem 47: Result more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Tan}[c+d\,x]^4}{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 90 leaves, 4 steps):

$$-\frac{3x}{2a}-\frac{2\,i\,\text{Log}[\text{Cos}[c+dx]]}{ad}+\frac{3\,\text{Tan}[c+dx]}{2ad}-\frac{i\,\text{Tan}[c+dx]^2}{ad}-\frac{\text{Tan}[c+dx]^3}{2d\,(a+i\,a\,\text{Tan}[c+dx])}$$

Result (type 3, 196 leaves):

$$\frac{1}{4d\,(a+i\,a\,\text{Tan}[c+dx])}\text{Cos}[c]\,\text{Sec}[c+dx]\,(\text{Cos}[dx]+i\,\text{Sin}[dx])\\ \Big(-6dx-4\,i\,\text{Log}\big[\text{Cos}[c+dx]^2\big]+8dx\,\text{Sec}[c]^2-2\,i\,\text{Sec}[c+dx]^2+4\,\text{Sec}[c]\,\text{Sec}[c+dx]\,\text{Sin}[dx]+\\ \text{Sin}[2dx]+\text{ArcTan}[\text{Tan}[dx]]\,(-8-8\,i\,\text{Tan}[c])+2\,i\,dx\,\text{Tan}[c]+\\ 4\,\text{Log}\big[\text{Cos}[c+dx]^2\big]\,\text{Tan}[c]+2\,\text{Sec}[c+dx]^2\,\text{Tan}[c]+4\,i\,\text{Sec}[c]\,\text{Sec}[c+dx]\,\text{Sin}[dx]\,\text{Tan}[c]-\\ i\,\text{Sin}[2dx]\,\text{Tan}[c]-8dx\,\text{Tan}[c]^2+\text{Cos}[2dx]\,(i+\text{Tan}[c])\Big)$$

Problem 48: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+dx]^3}{a+i\,a\,\text{Tan}[c+dx]}\,dx$$

Optimal (type 3, 74 leaves, 3 steps):

$$\frac{3\,i\,x}{2a}-\frac{\text{Log}[\text{Cos}[c+dx]]}{ad}-\frac{3\,i\,\text{Tan}[c+dx]}{2ad}-\frac{\text{Tan}[c+dx]^2}{2d\,(a+i\,a\,\text{Tan}[c+dx])}$$

Result (type 3, 174 leaves):

$$-\frac{1}{4d\,(a+i\,a\,\text{Tan}[c+dx])}\\ i\,\text{Cos}[c]\,\text{Sec}[c+dx]\,(\text{Cos}[dx]+i\,\text{Sin}[dx])\,\Big(-6dx-2\,i\,\text{Log}\big[\text{Cos}[c+dx]^2\big]+4dx\,\text{Sec}[c]^2+\\ 4\,\text{Sec}[c]\,\text{Sec}[c+dx]\,\text{Sin}[dx]+\text{Sin}[2dx]+\text{ArcTan}[\text{Tan}[dx]]\,(-4-4\,i\,\text{Tan}[c])-\\ 2\,i\,dx\,\text{Tan}[c]+2\,\text{Log}\big[\text{Cos}[c+dx]^2\big]\,\text{Tan}[c]+4\,i\,\text{Sec}[c]\,\text{Sec}[c+dx]\,\text{Sin}[dx]\,\text{Tan}[c]-\\ i\,\text{Sin}[2dx]\,\text{Tan}[c]-4dx\,\text{Tan}[c]^2+\text{Cos}[2dx]\,(i+\text{Tan}[c])\Big)$$

Problem 53: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+dx]^2}{a+i\,a\,\text{Tan}[c+dx]}\,dx$$

Optimal (type 3, 70 leaves, 4 steps):

$$-\frac{3x}{2a}-\frac{3\,\text{Cot}[c+dx]}{2ad}-\frac{i\,\text{Log}[\text{Sin}[c+dx]]}{ad}+\frac{\text{Cot}[c+dx]}{2d\,(a+i\,a\,\text{Tan}[c+dx])}$$

Result (type 3, 286 leaves):

$$\frac{1}{32\,a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[c+d\,x]\right)}\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+d\,x]\,\Big(8\,\mathrm{Cos}[c]-9\,\mathrm{Cos}[c+2\,d\,x]+2\,\mathrm{i}\,d\,x\,\mathrm{Cos}[c+2\,d\,x]+\mathrm{Cos}[3\,c+2\,d\,x]-2\,\mathrm{i}\,d\,x\,\mathrm{Cos}[3\,c+2\,d\,x]-2\,\mathrm{Cos}[c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+2\,\mathrm{Cos}[3\,c+2\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+10\,\mathrm{i}\,\mathrm{Sin}[c]-4\,d\,x\,\mathrm{Sin}[c]-4\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[c]+16\,\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[c]\,\left(\mathrm{Cos}[c+d\,x]+\mathrm{i}\,\mathrm{Sin}[c+d\,x]\right)\mathrm{Sin}[c+d\,x]-7\,\mathrm{i}\,\mathrm{Sin}[c+2\,d\,x]-2\,d\,x\,\mathrm{Sin}[c+2\,d\,x]-2\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[c+2\,d\,x]-\mathrm{i}\,\mathrm{Sin}[3\,c+2\,d\,x]+2\,d\,x\,\mathrm{Sin}[3\,c+2\,d\,x]+2\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[3\,c+2\,d\,x]\Big)$$

Problem 54: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c+d\,x]^3}{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 90 leaves, 5 steps):

$$\frac{3\,\mathrm{i}\,x}{2\,a}+\frac{3\,\mathrm{i}\,\mathrm{Cot}[c+d\,x]}{2\,a\,d}-\frac{\mathrm{Cot}[c+d\,x]^2}{a\,d}-\frac{2\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a\,d}+\frac{\mathrm{Cot}[c+d\,x]^2}{2\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 414 leaves):

$$\frac{1}{64\,a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[c+d\,x]\right)}\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Csc}[c+d\,x]^2\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+d\,x]\,\Big(-3\,\mathrm{Cos}[2\,c+d\,x]+6\,\mathrm{i}\,d\,x\,\mathrm{Cos}[2\,c+d\,x]+7\,\mathrm{Cos}[2\,c+3\,d\,x]+2\,\mathrm{i}\,d\,x\,\mathrm{Cos}[2\,c+3\,d\,x]+\mathrm{Cos}[4\,c+3\,d\,x]-2\,\mathrm{i}\,d\,x\,\mathrm{Cos}[4\,c+3\,d\,x]+\mathrm{Cos}[d\,x]\,\left(-5-6\,\mathrm{i}\,d\,x-12\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\right)+12\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+4\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-4\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-25\,\mathrm{i}\,\mathrm{Sin}[d\,x]+2\,d\,x\,\mathrm{Sin}[d\,x]-4\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[d\,x]+64\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[c]\,\left(\mathrm{Cos}[c+d\,x]+\mathrm{i}\,\mathrm{Sin}[c+d\,x]\right)\mathrm{Sin}[c+d\,x]^2+\mathrm{i}\,\mathrm{Sin}[2\,c+d\,x]-2\,d\,x\,\mathrm{Sin}[2\,c+d\,x]+4\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[2\,c+d\,x]+9\,\mathrm{i}\,\mathrm{Sin}[2\,c+3\,d\,x]-2\,d\,x\,\mathrm{Sin}[2\,c+3\,d\,x]+4\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[2\,c+3\,d\,x]-\mathrm{i}\,\mathrm{Sin}[4\,c+3\,d\,x]+2\,d\,x\,\mathrm{Sin}[4\,c+3\,d\,x]-4\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\mathrm{Sin}[4\,c+3\,d\,x]\Big)$$

Problem 55: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c+d\,x]^4}{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 108 leaves, 6 steps):

$$\frac{5\,x}{2\,a}+\frac{5\,\mathrm{Cot}[c+d\,x]}{2\,a\,d}+\frac{\mathrm{i}\,\mathrm{Cot}[c+d\,x]^2}{a\,d}-\frac{5\,\mathrm{Cot}[c+d\,x]^3}{6\,a\,d}+\frac{2\,\mathrm{i}\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a\,d}+\frac{\mathrm{Cot}[c+d\,x]^3}{2\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 365 leaves):

$$\frac{1}{12\,a\,d\,(-i+\text{Tan}[c+d\,x])}\text{Csc}[c]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,\Big(14\,\text{Csc}[c+d\,x]-28\,\text{Cos}[c-d\,x]\,\text{Csc}[2\,(c+d\,x)]+$$
$$14\,i\,\text{Sec}[c+d\,x]-24\,d\,x\,\text{Sec}[c+d\,x]+24\,d\,x\,\text{Cos}[c]^2\,\text{Sec}[c+d\,x]+$$
$$3\,\text{Cos}[c]\,\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]+30\,d\,x\,\text{Sec}[c+d\,x]\,\text{Sin}[c]^2-$$
$$3\,i\,\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]^2+12\,i\,\text{Log}[\text{Sin}[c+d\,x]^2]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]^2+$$
$$24\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]\,(-i\,\text{Cos}[c]+\text{Sin}[c])+2\,\text{Csc}[c+d\,x]^2$$
$$\text{Sec}[c+d\,x]\,(\text{Cos}[c]+i\,\text{Sin}[c])\,(i\,\text{Cos}[c]+2\,\text{Sin}[c])-3\,i\,d\,x\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c]+$$
$$6\,\text{Log}[\text{Sin}[c+d\,x]^2]\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c]-3\,i\,\text{Cos}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[c]\,\text{Sin}[2\,d\,x]-$$
$$3\,\text{Sec}[c+d\,x]\,\text{Sin}[c]^2\,\text{Sin}[2\,d\,x]-28\,i\,\text{Csc}[2\,(c+d\,x)]\,\text{Sin}[c-d\,x]+$$
$$2\,\text{Csc}[c+d\,x]^3\,(-1+\text{Cos}[c-d\,x]\,\text{Sec}[c+d\,x]+i\,\text{Sec}[c+d\,x]\,\text{Sin}[c-d\,x])\Big)$$

Problem 56: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^6}{(a+i\,a\,\text{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 142 leaves, 6 steps):

$$-\frac{25\,x}{4\,a^2}-\frac{6\,i\,\text{Log}[\text{Cos}[c+d\,x]]}{a^2\,d}+\frac{25\,\text{Tan}[c+d\,x]}{4\,a^2\,d}-\frac{3\,i\,\text{Tan}[c+d\,x]^2}{a^2\,d}-$$
$$\frac{25\,\text{Tan}[c+d\,x]^3}{12\,a^2\,d}+\frac{3\,i\,\text{Tan}[c+d\,x]^4}{2\,a^2\,d\,(1+i\,\text{Tan}[c+d\,x])}-\frac{\text{Tan}[c+d\,x]^5}{4\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^2}$$

Result (type 3, 882 leaves):

$$-\frac{25\,x\,\text{Cos}[2\,c]\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{4\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}-\frac{6\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Cos}[2\,c]\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}+\frac{5\,i\,\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{4\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}-$$

$$\left(3\,i\,\text{Cos}[2\,c]\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)+$$

$$\left(\text{Cos}[4\,d\,x]\,\text{Sec}[c+d\,x]^2\,\left(-\frac{1}{16}\,i\,\text{Cos}[2\,c]-\frac{1}{16}\,\text{Sin}[2\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)+\left(\text{Sec}[c]\,\text{Sec}[c+d\,x]^4\,\left(3\,\text{Cos}[c]-i\,\text{Sin}[c]\right)\right.$$

$$\left.\left(-\frac{1}{3}\,i\,\text{Cos}[2\,c]+\frac{1}{3}\,\text{Sin}[2\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)-$$

$$\frac{25\,i\,x\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{4\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}-\frac{6\,i\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}+$$

$$\frac{3\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}+\frac{5\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\,\text{Sin}[2\,d\,x]}{4\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}+$$

$$\left(\text{Sec}[c+d\,x]^2\,\left(-\frac{1}{16}\,\text{Cos}[2\,c]+\frac{1}{16}\,i\,\text{Sin}[2\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\,\text{Sin}[4\,d\,x]\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)-\left(13\,i\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right.$$

$$\left.\left(-\text{Cos}[2\,c-d\,x]+\text{Cos}[2\,c+d\,x]-i\,\text{Sin}[2\,c-d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(6\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)+\left(i\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^5\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right.$$

$$\left.\left(-\text{Cos}[2\,c-d\,x]+\text{Cos}[2\,c+d\,x]-i\,\text{Sin}[2\,c-d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(6\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2\right)+\left(x\,\text{Sec}[c+d\,x]^2\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right.$$

$$\left.\left(6+6\,i\,\text{Tan}[c]+i\,\left(6\,\text{Cos}[2\,c]+6\,i\,\text{Sin}[2\,c]\right)\,\text{Tan}[c]\right)\right)\Big/\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2$$

Problem 57: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^5}{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 124 leaves, 5 steps):

$$\frac{15\,i\,x}{4\,a^2}-\frac{4\,\text{Log}[\text{Cos}[c+d\,x]]}{a^2\,d}-\frac{15\,i\,\text{Tan}[c+d\,x]}{4\,a^2\,d}-\frac{2\,\text{Tan}[c+d\,x]^2}{a^2\,d}+\frac{5\,i\,\text{Tan}[c+d\,x]^3}{4\,a^2\,d\,(1+i\,\text{Tan}[c+d\,x])}-\frac{\text{Tan}[c+d\,x]^4}{4\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^2}$$

Result (type 3, 300 leaves):

$$\frac{1}{16\,a^2\,d\,(-i+\text{Tan}[c+d\,x])^2}\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(64\,i\,d\,x-16\,\text{Cos}[2\,d\,x]-16\,\text{Cos}[2\,c-d\,x]\,\text{Sec}[c]\,\text{Sec}[c+d\,x]+16\,\text{Cos}[2\,c+d\,x]\,\text{Sec}[c]\,\text{Sec}[c+d\,x]-128\,i\,d\,x\,\text{Sin}[c]^2+60\,d\,x\,\text{Sin}[2\,c]-i\,\text{Cos}[4\,d\,x]\,\text{Sin}[2\,c]+32\,i\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[2\,c]+8\,i\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,c]+64\,\text{ArcTan}[\text{Tan}[d\,x]]\,(-i\,\text{Cos}[2\,c]+\text{Sin}[2\,c])+16\,i\,\text{Sin}[2\,d\,x]-\text{Sin}[2\,c]\,\text{Sin}[4\,d\,x]-16\,i\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c-d\,x]+16\,i\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c+d\,x]-64\,d\,x\,\text{Tan}[c]+\text{Cos}[2\,c]\,(-60\,i\,d\,x+\text{Cos}[4\,d\,x]+32\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]+8\,\text{Sec}[c+d\,x]^2-i\,\text{Sin}[4\,d\,x]-64\,d\,x\,\text{Tan}[c]))$$

Problem 58: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^4}{(a+i\,a\,\text{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 104 leaves, 4 steps):

$$\frac{9\,x}{4\,a^2}+\frac{2\,i\,\text{Log}[\text{Cos}[c+d\,x]]}{a^2\,d}-\frac{9\,\text{Tan}[c+d\,x]}{4\,a^2\,d}+\frac{i\,\text{Tan}[c+d\,x]^2}{a^2\,d\,(1+i\,\text{Tan}[c+d\,x])}-\frac{\text{Tan}[c+d\,x]^3}{4\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^2}$$

Result (type 3, 273 leaves):

$$-\frac{1}{16\,a^2\,d\,(-i+\text{Tan}[c+d\,x])^2}\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(-32\,d\,x-12\,i\,\text{Cos}[2\,d\,x]-8\,i\,\text{Cos}[2\,c-d\,x]\,\text{Sec}[c]\,\text{Sec}[c+d\,x]+8\,i\,\text{Cos}[2\,c+d\,x]\,\text{Sec}[c]\,\text{Sec}[c+d\,x]+64\,d\,x\,\text{Sin}[c]^2+32\,\text{ArcTan}[\text{Tan}[d\,x]]\,(\text{Cos}[2\,c]+i\,\text{Sin}[2\,c])+36\,i\,d\,x\,\text{Sin}[2\,c]+\text{Cos}[4\,d\,x]\,\text{Sin}[2\,c]-16\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[2\,c]-12\,\text{Sin}[2\,d\,x]-i\,\text{Sin}[2\,c]\,\text{Sin}[4\,d\,x]+8\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c-d\,x]-8\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,c+d\,x]-32\,i\,d\,x\,\text{Tan}[c]+\text{Cos}[2\,c]\,(36\,d\,x+i\,\text{Cos}[4\,d\,x]+16\,i\,\text{Log}\left[\text{Cos}[c+d\,x]^2\right]+\text{Sin}[4\,d\,x]-32\,i\,d\,x\,\text{Tan}[c]))$$

Problem 64: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^2}{(a+i\,a\,\text{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 97 leaves, 5 steps):

$$-\frac{9\,x}{4\,a^2}-\frac{9\,\text{Cot}[c+d\,x]}{4\,a^2\,d}-\frac{2\,i\,\text{Log}[\text{Sin}[c+d\,x]]}{a^2\,d}+\frac{\text{Cot}[c+d\,x]}{a^2\,d\,(1+i\,\text{Tan}[c+d\,x])}+\frac{\text{Cot}[c+d\,x]}{4\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^2}$$

Result (type 3, 276 leaves):

$$-\frac{1}{16\,a^2\,d\,\left(-\mathrm{i}+\mathrm{Tan}[c+d\,x]\right)^2}\mathrm{Sec}[c+d\,x]^2\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^2\,\left(-32\,d\,x+64\,d\,x\,\mathrm{Cos}[c]^2-12\,\mathrm{i}\,\mathrm{Cos}[2\,d\,x]+32\,\mathrm{i}\,d\,x\,\mathrm{Cot}[c]+\right.$$
$$8\,\mathrm{i}\,\mathrm{Cos}[2\,c-d\,x]\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]-8\,\mathrm{i}\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]-$$
$$32\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\left(\mathrm{Cos}[2\,c]+\mathrm{i}\,\mathrm{Sin}[2\,c]\right)-36\,\mathrm{i}\,d\,x\,\mathrm{Sin}[2\,c]-\mathrm{Cos}[4\,d\,x]\,\mathrm{Sin}[2\,c]+$$
$$16\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]-12\,\mathrm{Sin}[2\,d\,x]+\mathrm{i}\,\mathrm{Sin}[2\,c]\,\mathrm{Sin}[4\,d\,x]-$$
$$\mathrm{i}\,\mathrm{Cos}[2\,c]\,\left(\mathrm{Cos}[4\,d\,x]+32\,d\,x\,\mathrm{Cot}[c]-\mathrm{i}\,\left(36\,d\,x+16\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+\mathrm{Sin}[4\,d\,x]\right)\right)-$$
$$\left.8\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sin}[2\,c-d\,x]+8\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sin}[2\,c+d\,x]\right)$$

Problem 65: Result more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d\,x]^3}{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 122 leaves, 6 steps):

$$\frac{15\,\mathrm{i}\,x}{4\,a^2}+\frac{15\,\mathrm{i}\,\mathrm{Cot}[c+d\,x]}{4\,a^2\,d}-\frac{2\,\mathrm{Cot}[c+d\,x]^2}{a^2\,d}-$$
$$\frac{4\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^2\,d}+\frac{5\,\mathrm{Cot}[c+d\,x]^2}{4\,a^2\,d\,\left(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right)}+\frac{\mathrm{Cot}[c+d\,x]^2}{4\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^2}$$

Result (type 3, 319 leaves):

$$\frac{1}{16\,a^2\,d\,\left(-\mathrm{i}+\mathrm{Tan}[c+d\,x]\right)^2}\mathrm{Sec}[c+d\,x]^2\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^2$$
$$\left(-64\,\mathrm{i}\,d\,x+128\,\mathrm{i}\,d\,x\,\mathrm{Cos}[c]^2-60\,\mathrm{i}\,d\,x\,\mathrm{Cos}[2\,c]+16\,\mathrm{Cos}[2\,d\,x]+\mathrm{Cos}[2\,c]\,\mathrm{Cos}[4\,d\,x]-\right.$$
$$64\,d\,x\,\mathrm{Cot}[c]+64\,d\,x\,\mathrm{Cos}[2\,c]\,\mathrm{Cot}[c]-16\,\mathrm{Cos}[2\,c-d\,x]\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]+$$
$$16\,\mathrm{Cos}[2\,c+d\,x]\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]+8\,\mathrm{Cos}[2\,c]\,\mathrm{Csc}[c+d\,x]^2+32\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+$$
$$60\,d\,x\,\mathrm{Sin}[2\,c]-\mathrm{i}\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sin}[2\,c]+8\,\mathrm{i}\,\mathrm{Csc}[c+d\,x]^2\,\mathrm{Sin}[2\,c]+$$
$$32\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]+64\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\left(-\mathrm{i}\,\mathrm{Cos}[2\,c]+\mathrm{Sin}[2\,c]\right)-$$
$$16\,\mathrm{i}\,\mathrm{Sin}[2\,d\,x]-\mathrm{i}\,\mathrm{Cos}[2\,c]\,\mathrm{Sin}[4\,d\,x]-\mathrm{Sin}[2\,c]\,\mathrm{Sin}[4\,d\,x]-$$
$$\left.16\,\mathrm{i}\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sin}[2\,c-d\,x]+16\,\mathrm{i}\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sin}[2\,c+d\,x]\right)$$

Problem 66: Result more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Tan}[c+d\,x]^6}{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 161 leaves, 6 steps):

$$\frac{55\,x}{8\,a^3}+\frac{7\,\mathrm{i}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{a^3\,d}-\frac{55\,\mathrm{Tan}[c+d\,x]}{8\,a^3\,d}+\frac{7\,\mathrm{i}\,\mathrm{Tan}[c+d\,x]^2}{2\,a^3\,d}-$$
$$\frac{\mathrm{Tan}[c+d\,x]^5}{6\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3}+\frac{13\,\mathrm{i}\,\mathrm{Tan}[c+d\,x]^4}{24\,a\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^2}+\frac{55\,\mathrm{Tan}[c+d\,x]^3}{24\,d\,\left(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 898 leaves):

$$\frac{55\,x\,\text{Cos}[3\,c]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{8\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$

$$\frac{7\,i\,\text{Cos}[3\,c]\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$

$$\left(\text{Cos}[4\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(\frac{9}{32}\,i\,\text{Cos}[c]+\frac{9\,\text{Sin}[c]}{32}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(-\frac{39}{16}\,i\,\text{Cos}[c]+\frac{39\,\text{Sin}[c]}{16}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+\frac{\text{Sec}[c+d\,x]^5\,\left(\frac{1}{2}\,i\,\text{Cos}[3\,c]-\frac{1}{2}\,\text{Sin}[3\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$
$$\left(\text{Cos}[6\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,i\,\text{Cos}[3\,c]-\frac{1}{48}\,\text{Sin}[3\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+\frac{55\,i\,x\,\text{Sec}[c+d\,x]^3\,\text{Sin}[3\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{8\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}-$$
$$\frac{7\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[3\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$
$$\left(\text{Sec}[c+d\,x]^3\,\left(-\frac{39\,\text{Cos}[c]}{16}-\frac{39}{16}\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[2\,d\,x]\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\text{Sec}[c+d\,x]^3\,\left(\frac{9\,\text{Cos}[c]}{32}-\frac{9}{32}\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[4\,d\,x]\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\text{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,\text{Cos}[3\,c]+\frac{1}{48}\,i\,\text{Sin}[3\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[6\,d\,x]\right)\Big/$$
$$\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+\left(3\,i\,\text{Sec}[c+d\,x]^4\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(-\text{Cos}[3\,c-d\,x]+\text{Cos}[3\,c+d\,x]-i\,\text{Sin}[3\,c-d\,x]+i\,\text{Sin}[3\,c+d\,x]\right)\right)\Big/$$
$$\left(2\,d\,\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(x\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\left(-\frac{7\,\text{Cos}[c]}{2}+\frac{7\,\text{Cos}[c]^3}{2}-7\,i\,\text{Sin}[c]+\right.\right.$$
$$14\,i\,\text{Cos}[c]^2\,\text{Sin}[c]-21\,\text{Cos}[c]\,\text{Sin}[c]^2-14\,i\,\text{Sin}[c]^3+\frac{7}{2}\,\text{Sin}[c]\,\text{Tan}[c]+$$
$$\left.\left.\frac{7}{2}\,\text{Sin}[c]^3\,\text{Tan}[c]-i\,\left(7\,\text{Cos}[3\,c]+7\,i\,\text{Sin}[3\,c]\right)\,\text{Tan}[c]\right)\right)\Big/\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3$$

Problem 74: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^2}{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 133 leaves, 6 steps):

$$-\frac{25 x}{8 a^3}-\frac{25 \operatorname{Cot}[c+d x]}{8 a^3 d}-\frac{3 i \operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^3 d}+\frac{\operatorname{Cot}[c+d x]}{6 d (a+i a \operatorname{Tan}[c+d x])^3}+\frac{11 \operatorname{Cot}[c+d x]}{24 a d (a+i a \operatorname{Tan}[c+d x])^2}+\frac{3 \operatorname{Cot}[c+d x]}{2 d \left(a^3+i a^3 \operatorname{Tan}[c+d x]\right)}$$

Result (type 3, 899 leaves):

$$-\frac{25\,x\,\text{Cos}[3\,c]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{8\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}-\frac{3\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Cos}[3\,c]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}-$$

$$\left(3\,i\,\text{Cos}[3\,c]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/\left(2\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Cos}[4\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(-\frac{7}{32}\,i\,\text{Cos}[c]-\frac{7\,\text{Sin}[c]}{32}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(-\frac{23}{16}\,i\,\text{Cos}[c]+\frac{23\,\text{Sin}[c]}{16}\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(x\,\text{Sec}[c+d\,x]^3\,\left(-6\,\text{Cos}[c]+3\,i\,\text{Cos}[c]\,\text{Cot}[c]-3\,i\,\text{Sin}[c]-i\,\text{Cot}[c]\,\left(3\,\text{Cos}[3\,c]+3\,i\,\text{Sin}[3\,c]\right)\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3+$$

$$\left(\text{Cos}[6\,d\,x]\,\text{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,i\,\text{Cos}[3\,c]-\frac{1}{48}\,\text{Sin}[3\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)-\frac{25\,i\,x\,\text{Sec}[c+d\,x]^3\,\text{Sin}[3\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{8\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}-$$

$$\frac{3\,i\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[3\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$

$$\frac{3\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[3\,c]\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3}{2\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(-\frac{23\,\text{Cos}[c]}{16}-\frac{23}{16}\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[2\,d\,x]\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(-\frac{7\,\text{Cos}[c]}{32}+\frac{7}{32}\,i\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[4\,d\,x]\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,\text{Cos}[3\,c]+\frac{1}{48}\,i\,\text{Sin}[3\,c]\right)\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\text{Sin}[6\,d\,x]\right)\Big/\left(d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}[c+d\,x]^3\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^3\,\left(\frac{1}{2}\,i\,\text{Cos}[3\,c-d\,x]-\frac{1}{2}\,i\,\text{Cos}[3\,c+d\,x]-\frac{1}{2}\,\text{Sin}[3\,c-d\,x]+\frac{1}{2}\,\text{Sin}[3\,c+d\,x]\right)\right)\Big/\left(2\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3\right)$$

Problem 75: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^6}{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^4}\,dx$$

Optimal (type 3, 171 leaves, 6 steps):

$$-\frac{65\,x}{16\,a^4}-\frac{4\,i\,\text{Log}[\text{Cos}[c+d\,x]]}{a^4\,d}+\frac{65\,\text{Tan}[c+d\,x]}{16\,a^4\,d}-\frac{2\,i\,\text{Tan}[c+d\,x]^2}{a^4\,d\,\left(1+i\,\text{Tan}[c+d\,x]\right)}+\frac{31\,\text{Tan}[c+d\,x]^3}{48\,a^4\,d\,\left(1+i\,\text{Tan}[c+d\,x]\right)^2}-\frac{\text{Tan}[c+d\,x]^5}{8\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^4}+\frac{7\,i\,\text{Tan}[c+d\,x]^4}{24\,a\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}$$

Result (type 3, 429 leaves):

$$-\frac{1}{1536\,a^4\,d\,\left(-i+\text{Tan}[c+d\,x]\right)^4}\text{Sec}[c]\,\text{Sec}[c+d\,x]^5\,\big(-536\,i\,\text{Cos}[d\,x]-536\,i\,\text{Cos}[2\,c+d\,x]-893\,i\,\text{Cos}[2\,c+3\,d\,x]+1560\,d\,x\,\text{Cos}[2\,c+3\,d\,x]-1661\,i\,\text{Cos}[4\,c+3\,d\,x]+1560\,d\,x\,\text{Cos}[4\,c+3\,d\,x]+771\,i\,\text{Cos}[4\,c+5\,d\,x]+1560\,d\,x\,\text{Cos}[4\,c+5\,d\,x]+3\,i\,\text{Cos}[6\,c+5\,d\,x]+1560\,d\,x\,\text{Cos}[6\,c+5\,d\,x]+1536\,i\,\text{Cos}[2\,c+3\,d\,x]\,\text{Log}[\text{Cos}[c+d\,x]]+1536\,i\,\text{Cos}[4\,c+3\,d\,x]\,\text{Log}[\text{Cos}[c+d\,x]]+1536\,i\,\text{Cos}[4\,c+5\,d\,x]\,\text{Log}[\text{Cos}[c+d\,x]]+1536\,i\,\text{Cos}[6\,c+5\,d\,x]\,\text{Log}[\text{Cos}[c+d\,x]]+832\,\text{Sin}[d\,x]+832\,\text{Sin}[2\,c+d\,x]+835\,\text{Sin}[2\,c+3\,d\,x]+1560\,i\,d\,x\,\text{Sin}[2\,c+3\,d\,x]-1536\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sin}[2\,c+3\,d\,x]+1603\,\text{Sin}[4\,c+3\,d\,x]+1560\,i\,d\,x\,\text{Sin}[4\,c+3\,d\,x]-1536\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sin}[4\,c+3\,d\,x]-765\,\text{Sin}[4\,c+5\,d\,x]+1560\,i\,d\,x\,\text{Sin}[4\,c+5\,d\,x]-1536\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sin}[4\,c+5\,d\,x]+3\,\text{Sin}[6\,c+5\,d\,x]+1560\,i\,d\,x\,\text{Sin}[6\,c+5\,d\,x]-1536\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sin}[6\,c+5\,d\,x]\big)$$

Problem 83: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^2}{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^4}\,dx$$

Optimal (type 3, 159 leaves, 7 steps):

$$-\frac{65\,x}{16\,a^4}-\frac{65\,\text{Cot}[c+d\,x]}{16\,a^4\,d}-\frac{4\,i\,\text{Log}[\text{Sin}[c+d\,x]]}{a^4\,d}+\frac{31\,\text{Cot}[c+d\,x]}{48\,a^4\,d\,\left(1+i\,\text{Tan}[c+d\,x]\right)^2}+\frac{2\,\text{Cot}[c+d\,x]}{a^4\,d\,\left(1+i\,\text{Tan}[c+d\,x]\right)}+\frac{\text{Cot}[c+d\,x]}{8\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^4}+\frac{7\,\text{Cot}[c+d\,x]}{24\,a\,d\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}$$

Result (type 3, 444 leaves):

$$\frac{1}{384\, a^4\, d\, (-i + \text{Tan}[c + d x])^4} i\, \text{Csc}[c]\, \text{Sec}[c + d x]^4\, (\text{Cos}[d x] + i\, \text{Sin}[d x])^4\, \Big(1536\, d x\, \text{Cos}[c]^3 + 4608\, i\, d x\, \text{Cos}[c]^2\, \text{Sin}[c] + 1536\, i\, \text{ArcTan}[\text{Tan}[d x]]\, \text{Sin}[c]\, (\text{Cos}[4 c] + i\, \text{Sin}[4 c]) - 64\, \text{Cos}[c]\, \big(24\, d x\, \text{Cos}[4 c] + 24\, i\, d x\, \text{Sin}[4 c] + \text{Sin}[c]^2\, (72\, d x - i\, \text{Cos}[6 d x] - \text{Sin}[6 d x])\big) + i\, \big(-192\, i\, \text{Cos}[4 c - d x]\, \text{Csc}[c + d x] + 192\, i\, \text{Cos}[4 c + d x]\, \text{Csc}[c + d x] + 1560\, d x\, \text{Cos}[4 c]\, \text{Sin}[c] + 864\, i\, \text{Cos}[2 c]\, \text{Cos}[2 d x]\, \text{Sin}[c] + 180\, i\, \text{Cos}[4 d x]\, \text{Sin}[c] + 32\, i\, \text{Cos}[2 c]\, \text{Cos}[6 d x]\, \text{Sin}[c] + 3\, i\, \text{Cos}[4 c]\, \text{Cos}[8 d x]\, \text{Sin}[c] + 768\, i\, \text{Cos}[4 c]\, \text{Log}[\text{Sin}[c + d x]^2]\, \text{Sin}[c] - 1536\, d x\, \text{Sin}[c]^3 - 864\, \text{Cos}[2 d x]\, \text{Sin}[c]\, \text{Sin}[2 c] + 1560\, i\, d x\, \text{Sin}[c]\, \text{Sin}[4 c] + 3\, \text{Cos}[8 d x]\, \text{Sin}[c]\, \text{Sin}[4 c] - 768\, \text{Log}[\text{Sin}[c + d x]^2]\, \text{Sin}[c]\, \text{Sin}[4 c] + 864\, \text{Cos}[2 c]\, \text{Sin}[c]\, \text{Sin}[2 d x] + 864\, i\, \text{Sin}[c]\, \text{Sin}[2 c]\, \text{Sin}[2 d x] + 180\, \text{Sin}[c]\, \text{Sin}[4 d x] + 32\, \text{Cos}[2 c]\, \text{Sin}[c]\, \text{Sin}[6 d x] + 3\, \text{Cos}[4 c]\, \text{Sin}[c]\, \text{Sin}[8 d x] - 3\, i\, \text{Sin}[c]\, \text{Sin}[4 c]\, \text{Sin}[8 d x] + 192\, \text{Csc}[c + d x]\, \text{Sin}[4 c - d x] - 192\, \text{Csc}[c + d x]\, \text{Sin}[4 c + d x]\big)\Big)$$

Problem 89: Unable to integrate problem.

$$\int \text{Cot}[c + d x]\, \sqrt{a + i\, a\, \text{Tan}[c + d x]}\, dx$$

Optimal (type 3, 78 leaves, 6 steps):

$$-\frac{2 \sqrt{a}\, \text{ArcTanh}\left[\frac{\sqrt{a + i\, a\, \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{d} + \frac{\sqrt{2}\, \sqrt{a}\, \text{ArcTanh}\left[\frac{\sqrt{a + i\, a\, \text{Tan}[c+d x]}}{\sqrt{2}\, \sqrt{a}}\right]}{d}$$

Result (type 8, 26 leaves):

$$\int \text{Cot}[c + d x]\, \sqrt{a + i\, a\, \text{Tan}[c + d x]}\, dx$$

Problem 90: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c + d x]^2\, \sqrt{a + i\, a\, \text{Tan}[c + d x]}\, dx$$

Optimal (type 3, 111 leaves, 8 steps):

$$-\frac{i \sqrt{a}\, \text{ArcTanh}\left[\frac{\sqrt{a + i\, a\, \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{d} + \frac{i \sqrt{2}\, \sqrt{a}\, \text{ArcTanh}\left[\frac{\sqrt{a + i\, a\, \text{Tan}[c+d x]}}{\sqrt{2}\, \sqrt{a}}\right]}{d} - \frac{\text{Cot}[c + d x]\, \sqrt{a + i\, a\, \text{Tan}[c + d x]}}{d}$$

Result (type 3, 290 leaves):

$$\left(i \sqrt{e^{i d x}} \left(4 \operatorname{ArcSinh}\left[e^{i (c+d x)}\right] + \sqrt{2} \left(\operatorname{Log}\left[1 - e^{i (c+d x)}\right] - \operatorname{Log}\left[1 + e^{i (c+d x)}\right] + \operatorname{Log}\left[1 - e^{i (c+d x)} + \sqrt{2} \sqrt{1 + e^{2 i (c+d x)}}\right] - \operatorname{Log}\left[1 + e^{i (c+d x)} + \sqrt{2} \sqrt{1 + e^{2 i (c+d x)}}\right]\right)\right) \sqrt{a + i a \operatorname{Tan}[c + d x]}\right) \Big/ \left(2 \sqrt{2} d \sqrt{\frac{e^{i (c+d x)}}{1 + e^{2 i (c+d x)}}} \sqrt{1 + e^{2 i (c+d x)}} \sqrt{\operatorname{Sec}[c + d x]} \sqrt{\operatorname{Cos}[d x] + i \operatorname{Sin}[d x]}\right) + \frac{(-\operatorname{Cot}[c] + \operatorname{Csc}[c] \operatorname{Csc}[c + d x] \operatorname{Sin}[d x]) \sqrt{a + i a \operatorname{Tan}[c + d x]}}{d}$$

Problem 96: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c + d x] (a + i a \operatorname{Tan}[c + d x])^{3/2} \, dx$$

Optimal (type 3, 79 leaves, 6 steps):

$$-\frac{2 a^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{d} + \frac{2 \sqrt{2} a^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{2} \sqrt{a}}\right]}{d}$$

Result (type 3, 201 leaves):

$$\frac{1}{\sqrt{2} d} e^{-3 i (c+d x)} \left(\frac{a e^{2 i (c+d x)}}{1 + e^{2 i (c+d x)}}\right)^{3/2} \left(1 + e^{2 i (c+d x)}\right)^{3/2} \left(4 \operatorname{ArcSinh}\left[e^{i (c+d x)}\right] + \sqrt{2} \left(\operatorname{Log}\left[1 - e^{i (c+d x)}\right] - \operatorname{Log}\left[1 + e^{i (c+d x)}\right] + \operatorname{Log}\left[1 - e^{i (c+d x)} + \sqrt{2} \sqrt{1 + e^{2 i (c+d x)}}\right] - \operatorname{Log}\left[1 + e^{i (c+d x)} + \sqrt{2} \sqrt{1 + e^{2 i (c+d x)}}\right]\right)\right)$$

Problem 103: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c + d x] (a + i a \operatorname{Tan}[c + d x])^{5/2} \, dx$$

Optimal (type 3, 104 leaves, 7 steps):

$$-\frac{2 a^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{d} + \frac{4 \sqrt{2} a^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{2} \sqrt{a}}\right]}{d} - \frac{2 a^2 \sqrt{a + i a \operatorname{Tan}[c + d x]}}{d}$$

Result (type 3, 276 leaves):

$$-\frac{1}{\sqrt{2}\,d}a^2\,e^{-i\,(c+d\,x)}\left(2\sqrt{2}\,e^{i\,(c+d\,x)}-4\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{ArcSinh}\left[e^{i\,(c+d\,x)}\right]-\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Log}\left[1-e^{i\,(c+d\,x)}\right]+\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Log}\left[1+e^{i\,(c+d\,x)}\right]-\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Log}\left[1-e^{i\,(c+d\,x)}+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right]+\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Log}\left[1+e^{i\,(c+d\,x)}+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right]\right)\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}$$

Problem 104: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 3, 114 leaves, 7 steps):

$$-\frac{5\,i\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{d}+\frac{4\,i\,\sqrt{2}\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{d}-\frac{a^2\,\text{Cot}[c+d\,x]\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 3, 251 leaves):

$$\frac{1}{2\sqrt{2}\,d}i\,a^2\,e^{-i\,(c+2\,d\,x)}\sqrt{\frac{a\,e^{2\,i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\sqrt{1+e^{2\,i\,(c+d\,x)}}\left(16\,\text{ArcSinh}\left[e^{i\,(c+d\,x)}\right]+2\,i\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Csc}[c+d\,x]+5\sqrt{2}\left(\text{Log}\left[1-e^{i\,(c+d\,x)}\right]-\text{Log}\left[1+e^{i\,(c+d\,x)}\right]+\text{Log}\left[1-e^{i\,(c+d\,x)}+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right]-\text{Log}\left[1+e^{i\,(c+d\,x)}+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right]\right)\right)\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)$$

Problem 114: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 99 leaves, 7 steps):

$$-\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{\sqrt{2}\,\sqrt{a}\,d}+\frac{1}{d\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}$$

Result (type 3, 256 leaves):

$$\left(\sqrt{1+e^{2 i (c+d x)}}+e^{i (c+d x)} \text{ArcSinh}\left[e^{i (c+d x)}\right]+\sqrt{2}\, e^{i (c+d x)} \text{Log}\left[1-e^{i (c+d x)}\right]-\right.$$
$$\sqrt{2}\, e^{i (c+d x)} \text{Log}\left[1+e^{i (c+d x)}\right]+\sqrt{2}\, e^{i (c+d x)} \text{Log}\left[1-e^{i (c+d x)}+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right]-$$
$$\left.\sqrt{2}\, e^{i (c+d x)} \text{Log}\left[1+e^{i (c+d x)}+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right]\right)\Big/\left(d \sqrt{1+e^{2 i (c+d x)}} \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Problem 132: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]}{(a+i a \text{Tan}[c+d x])^{5/2}}\, dx$$

Optimal (type 3, 159 leaves, 9 steps):

$$-\frac{2 \text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{5/2} d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{2} \sqrt{a}}\right]}{4 \sqrt{2}\, a^{5/2} d}+$$
$$\frac{1}{5 d (a+i a \text{Tan}[c+d x])^{5/2}}+\frac{1}{2 a d (a+i a \text{Tan}[c+d x])^{3/2}}+\frac{7}{4 a^2 d \sqrt{a+i a \text{Tan}[c+d x]}}$$

Result (type 3, 344 leaves):

$$\frac{1}{80 a^2 d \sqrt{a+i a \text{Tan}[c+d x]}}$$
$$e^{-6 i (c+d x)} \left(1+e^{2 i (c+d x)}\right)^{3/2} \left(\sqrt{1+e^{2 i (c+d x)}}+7 e^{2 i (c+d x)} \sqrt{1+e^{2 i (c+d x)}}+\right.$$
$$41 e^{4 i (c+d x)} \sqrt{1+e^{2 i (c+d x)}}+5 e^{5 i (c+d x)} \text{ArcSinh}\left[e^{i (c+d x)}\right]+20 \sqrt{2}\, e^{5 i (c+d x)} \text{Log}\left[1-e^{i (c+d x)}\right]-$$
$$20 \sqrt{2}\, e^{5 i (c+d x)} \text{Log}\left[1+e^{i (c+d x)}\right]+20 \sqrt{2}\, e^{5 i (c+d x)} \text{Log}\left[1-e^{i (c+d x)}+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right]-$$
$$\left.20 \sqrt{2}\, e^{5 i (c+d x)} \text{Log}\left[1+e^{i (c+d x)}+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right]\right) \text{Sec}[c+d x]^2$$

Problem 188: Result more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Tan}[c+d x]} \sqrt{a+i a \text{Tan}[c+d x]}\, dx$$

Optimal (type 3, 104 leaves, 7 steps):

$$-\frac{2 (-1)^{3/4} \sqrt{a} \text{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}-\frac{(1+i) \sqrt{a} \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}$$

Result (type 3, 232 leaves):

$$\left(e^{-i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}} \left(-4 \text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2} \left(\text{Log}\left[1-3 e^{2 i (c+d x)}-2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]-\text{Log}\left[1-3 e^{2 i (c+d x)}+2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right) \sqrt{a+i a \text{Tan}[c+d x]}\right) \Bigg/ \left(4 d \sqrt{-\frac{i \left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}}\right)$$

Problem 189: Unable to integrate problem.

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{\text{Tan}[c+d x]}} \, dx$$

Optimal (type 3, 49 leaves, 2 steps):

$$\frac{(1-i) \sqrt{a} \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{\text{Tan}[c+d x]}} \, dx$$

Problem 190: Unable to integrate problem.

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{3/2}} \, dx$$

Optimal (type 3, 82 leaves, 3 steps):

$$\frac{(1+i) \sqrt{a} \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}-\frac{2 \sqrt{a+i a \text{Tan}[c+d x]}}{d \sqrt{\text{Tan}[c+d x]}}$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{3/2}} \, dx$$

Problem 191: Unable to integrate problem.

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{5/2}} \, dx$$

Optimal (type 3, 120 leaves, 5 steps):

$$-\frac{(1-i)\sqrt{a}\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}-\frac{2\sqrt{a+i a \text{Tan}[c+d x]}}{3 d \text{Tan}[c+d x]^{3/2}}-\frac{2 i \sqrt{a+i a \text{Tan}[c+d x]}}{3 d \sqrt{\text{Tan}[c+d x]}}$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{5/2}}\,dx$$

Problem 192: Unable to integrate problem.

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{7/2}}\,dx$$

Optimal (type 3, 154 leaves, 6 steps):

$$-\frac{(1+i)\sqrt{a}\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}-\frac{2\sqrt{a+i a \text{Tan}[c+d x]}}{5 d \text{Tan}[c+d x]^{5/2}}-\frac{2 i \sqrt{a+i a \text{Tan}[c+d x]}}{15 d \text{Tan}[c+d x]^{3/2}}+\frac{26\sqrt{a+i a \text{Tan}[c+d x]}}{15 d \sqrt{\text{Tan}[c+d x]}}$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\text{Tan}[c+d x]^{7/2}}\,dx$$

Problem 196: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \text{Tan}[c+d x])^{3/2}}{\sqrt{\text{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 104 leaves, 7 steps):

$$\frac{2(-1)^{1/4} a^{3/2}\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}+\frac{(2-2 i) a^{3/2}\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}$$

Result (type 3, 255 leaves):

$$-\left(\left(i a e^{-i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\sqrt{\frac{a e^{2 i (c+d x)}}{1+e^{2 i (c+d x)}}}\left(8 \text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2}\left(-\text{Log}\left[1-3 e^{2 i (c+d x)}-2\sqrt{2}\, e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]+\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\, e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right)\right)\Big/\left(2\sqrt{2}\, d\sqrt{-\frac{i\left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}}\right)\right)$$

Problem 197: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{3/2}}\, dx$$

Optimal (type 3, 83 leaves, 3 steps):

$$\frac{(2 + 2 i)\, a^{3/2} \operatorname{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+i\, a \operatorname{Tan}[c+d x]}}\right]}{d} - \frac{2 a \sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{d \sqrt{\operatorname{Tan}[c + d x]}}$$

Result (type 3, 168 leaves):

$$-\left(\left(2 i \sqrt{2}\, a^2 e^{i (c+d x)} \left(e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}} - \left(-1 + e^{2 i (c+d x)}\right) \operatorname{Log}\left[e^{-i c} \left(e^{i (c+d x)} + \sqrt{-1 + e^{2 i (c+d x)}}\right)\right]\right) \sqrt{\operatorname{Tan}[c + d x]}\right) \Big/ \left(d \left(-1 + e^{2 i (c+d x)}\right)^{3/2} \sqrt{\frac{a\, e^{2 i (c+d x)}}{1 + e^{2 i (c+d x)}}}\right)\right)$$

Problem 202: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c + d x]^{3/2} (a + i\, a \operatorname{Tan}[c + d x])^{5/2}\, dx$$

Optimal (type 3, 219 leaves, 10 steps):

$$-\frac{45 (-1)^{1/4} a^{5/2} \operatorname{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+i\, a \operatorname{Tan}[c+d x]}}\right]}{8 d} - \frac{(4 - 4 i)\, a^{5/2} \operatorname{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+i\, a \operatorname{Tan}[c+d x]}}\right]}{d} + \frac{19 a^2 \sqrt{\operatorname{Tan}[c + d x]} \sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{8 d} + \frac{13 i\, a^2 \operatorname{Tan}[c + d x]^{3/2} \sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{12 d} - \frac{a^2 \operatorname{Tan}[c + d x]^{5/2} \sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{3 d}$$

Result (type 3, 465 leaves):

$$\frac{1}{32\,d\,\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\sqrt{\text{Tan}[c+d\,x]}}\text{Cos}[c+d\,x]^2\left(45\sqrt{2}\,\text{Log}\left[\frac{2\,e^{\frac{7\,i\,c}{2}}\left(i\sqrt{2}+\sqrt{2}\,e^{i\,(c+d\,x)}-2\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right)}{45\left(-i+e^{i\,(c+d\,x)}\right)}\right]-\right.$$

$$45\sqrt{2}\,\text{Log}\left[\frac{2\,e^{\frac{7\,i\,c}{2}}\left(-i\sqrt{2}+\sqrt{2}\,e^{i\,(c+d\,x)}+2\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right)}{45\left(i+e^{i\,(c+d\,x)}\right)}\right]+128\,\text{Log}\left[\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\right.$$

$$\left.\left.\left(\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]+\sqrt{-1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]}\right)\right]\right)$$

$$\sqrt{-1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]}\,\left(i\,\text{Cos}[3\,c+d\,x]+\text{Sin}[3\,c+d\,x]\right)$$
$$\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{5/2}+$$

$$\left(\text{Cos}[c+d\,x]^2\left(\frac{91}{24}\text{Cos}[2\,c]+\text{Sec}[c+d\,x]^2\left(-\frac{1}{3}\text{Cos}[2\,c]+\frac{1}{3}i\,\text{Sin}[2\,c]\right)-\right.\right.$$
$$\left.\left.\frac{91}{24}i\,\text{Sin}[2\,c]+\text{Sec}[c+d\,x]\left(-\frac{13}{12}\text{Cos}[3\,c+d\,x]+\frac{13}{12}i\,\text{Sin}[3\,c+d\,x]\right)\right)\right.$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\Big/\left(d\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)^2\right)$$

Problem 204: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{5/2}}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 139 leaves, 8 steps):

$$\frac{5\,(-1)^{1/4}\,a^{5/2}\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]}{d}+$$
$$\frac{(4-4\,i)\,a^{5/2}\,\text{ArcTanh}\left[\frac{(1+i)\,\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{a^2\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 3, 360 leaves):

$$\frac{1}{4\, d\, \left(\text{Cos}[d\, x] + i\, \text{Sin}[d\, x]\right)^2 \sqrt{\text{Tan}[c + d\, x]}} \text{Cos}[c + d\, x]^2 \left(a + i\, a\, \text{Tan}[c + d\, x]\right)^{5/2}$$
$$\left(-i \left(5 \sqrt{2}\, \text{Log}\left[-\frac{2\, e^{\frac{7 i c}{2}} \left(i \sqrt{2} + \sqrt{2}\, e^{i (c+d x)} - 2 \sqrt{-1 + e^{2 i (c+d x)}}\right)}{5 \left(-i + e^{i (c+d x)}\right)}\right] - 5 \sqrt{2}\right.\right.$$
$$\text{Log}\left[-\frac{2\, e^{\frac{7 i c}{2}} \left(-i \sqrt{2} + \sqrt{2}\, e^{i (c+d x)} + 2 \sqrt{-1 + e^{2 i (c+d x)}}\right)}{5 \left(i + e^{i (c+d x)}\right)}\right] + 16\, \text{Log}\Big[\left(\text{Cos}[c] - i\, \text{Sin}[c]\right)$$
$$\left.\left.\left(\text{Cos}[c + d\, x] + i\, \text{Sin}[c + d\, x] + \sqrt{-1 + \text{Cos}[2 (c + d\, x)] + i\, \text{Sin}[2 (c + d\, x)]}\right)\Big]\right)\right.$$
$$\sqrt{-1 + \text{Cos}[2 (c + d\, x)] + i\, \text{Sin}[2 (c + d\, x)]} \left(\text{Cos}[3 c + d\, x] - i\, \text{Sin}[3 c + d\, x]\right) -$$
$$\left.4\, \text{Cos}[2 c]\, \text{Tan}[c + d\, x] + 4\, i\, \text{Sin}[2 c]\, \text{Tan}[c + d\, x]\right)$$

Problem 212: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c + d\, x]^{3/2}}{\sqrt{a + i\, a\, \text{Tan}[c + d\, x]}}\, dx$$

Optimal (type 3, 140 leaves, 8 steps):

$$-\frac{2 \left(-1\right)^{1/4} \text{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i\, a\, \text{Tan}[c+d x]}}\right]}{\sqrt{a}\, d} -$$
$$\frac{\left(\frac{1}{2} - \frac{i}{2}\right) \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i\, a\, \text{Tan}[c+d x]}}\right]}{\sqrt{a}\, d} - \frac{\sqrt{\text{Tan}[c + d\, x]}}{d \sqrt{a + i\, a\, \text{Tan}[c + d\, x]}}$$

Result (type 3, 316 leaves):

$$\left(i\, e^{-2 i (c+d x)} \sqrt{\frac{a\, e^{2 i (c+d x)}}{1 + e^{2 i (c+d x)}}}\right.$$
$$\left(-2 + 2\, e^{2 i (c+d x)} + 2\, e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}}\, \text{Log}\left[e^{i (c+d x)} + \sqrt{-1 + e^{2 i (c+d x)}}\right] -\right.$$
$$\sqrt{2}\, e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}}\, \text{Log}\left[1 - 3\, e^{2 i (c+d x)} - 2 \sqrt{2}\, e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}}\right] +$$
$$\left.\left.\sqrt{2}\, e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}}\, \text{Log}\left[1 - 3\, e^{2 i (c+d x)} + 2 \sqrt{2}\, e^{i (c+d x)} \sqrt{-1 + e^{2 i (c+d x)}}\right]\right)\right) \Big/$$
$$\left(2 \sqrt{2}\, a\, d \sqrt{\text{Tan}[c + d\, x]}\right)$$

Problem 248: Unable to integrate problem.

$$\int \mathrm{Tan}[c+d x]^{4/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\, a\, \mathrm{AppellF1}\left[\frac{7}{3}, \frac{1}{2}, 1, \frac{10}{3}, -\mathrm{i}\, \mathrm{Tan}[c+d x], \mathrm{i}\, \mathrm{Tan}[c+d x]\right] \sqrt{1+\mathrm{i}\, \mathrm{Tan}[c+d x]}\, \mathrm{Tan}[c+d x]^{7/3}\right) \Big/ \left(7\, d \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \mathrm{Tan}[c+d x]^{4/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Problem 249: Unable to integrate problem.

$$\int \mathrm{Tan}[c+d x]^{2/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\, a\, \mathrm{AppellF1}\left[\frac{5}{3}, \frac{1}{2}, 1, \frac{8}{3}, -\mathrm{i}\, \mathrm{Tan}[c+d x], \mathrm{i}\, \mathrm{Tan}[c+d x]\right] \sqrt{1+\mathrm{i}\, \mathrm{Tan}[c+d x]}\, \mathrm{Tan}[c+d x]^{5/3}\right) \Big/ \left(5\, d \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \mathrm{Tan}[c+d x]^{2/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Problem 250: Unable to integrate problem.

$$\int \mathrm{Tan}[c+d x]^{1/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\, a\, \mathrm{AppellF1}\left[\frac{4}{3}, \frac{1}{2}, 1, \frac{7}{3}, -\mathrm{i}\, \mathrm{Tan}[c+d x], \mathrm{i}\, \mathrm{Tan}[c+d x]\right] \sqrt{1+\mathrm{i}\, \mathrm{Tan}[c+d x]}\, \mathrm{Tan}[c+d x]^{4/3}\right) \Big/ \left(4\, d \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \mathrm{Tan}[c+d x]^{1/3} \sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}\, dx$$

Problem 251: Unable to integrate problem.

$$\int \frac{\sqrt{a+\mathrm{i}\, a\, \mathrm{Tan}[c+d x]}}{\mathrm{Tan}[c+d x]^{1/3}}\, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},1,\frac{5}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\sqrt{1+i\,\text{Tan}[c+d\,x]}\,\text{Tan}[c+d\,x]^{2/3}\right)\Big/\left(2\,d\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{1/3}}\,dx$$

Problem 252: Unable to integrate problem.

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{2/3}}\,dx$$

Optimal (type 6, 80 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},1,\frac{4}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\sqrt{1+i\,\text{Tan}[c+d\,x]}\,\text{Tan}[c+d\,x]^{1/3}\right)\Big/\left(d\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{2/3}}\,dx$$

Problem 253: Unable to integrate problem.

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{4/3}}\,dx$$

Optimal (type 6, 80 leaves, 4 steps):

$$-\left(\left(3\,a\,\text{AppellF1}\left[-\frac{1}{3},\frac{1}{2},1,\frac{2}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\sqrt{1+i\,\text{Tan}[c+d\,x]}\right)\Big/\left(d\,\text{Tan}[c+d\,x]^{1/3}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)\right)$$

Result (type 8, 30 leaves):

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{4/3}}\,dx$$

Problem 254: Unable to integrate problem.

$$\int\text{Tan}[c+d\,x]^{4/3}\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{7}{3},-\frac{1}{2},1,\frac{10}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\right.$$
$$\left.\text{Tan}[c+d\,x]^{7/3}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)\Big/\left(7\,d\,\sqrt{1+i\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int\text{Tan}[c+d\,x]^{4/3}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Problem 255: Unable to integrate problem.

$$\int\text{Tan}[c+d\,x]^{2/3}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{5}{3},-\frac{1}{2},1,\frac{8}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\text{Tan}[c+d\,x]^{5/3}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(5\,d\,\sqrt{1+i\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int\text{Tan}[c+d\,x]^{2/3}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Problem 256: Unable to integrate problem.

$$\int\text{Tan}[c+d\,x]^{1/3}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{4}{3},-\frac{1}{2},1,\frac{7}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\text{Tan}[c+d\,x]^{4/3}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(4\,d\,\sqrt{1+i\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int\text{Tan}[c+d\,x]^{1/3}\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Problem 257: Unable to integrate problem.

$$\int\frac{\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{3/2}}{\text{Tan}[c+d\,x]^{1/3}}\,dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3\,a\,\text{AppellF1}\left[\frac{2}{3},-\frac{1}{2},1,\frac{5}{3},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]\text{Tan}[c+d\,x]^{2/3}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,d\,\sqrt{1+i\,\text{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{1/3}} \, dx$$

Problem 258: Unable to integrate problem.

$$\int \frac{(a + i a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{2/3}} \, dx$$

Optimal (type 6, 80 leaves, 4 steps):

$$\left(3 a \operatorname{AppellF1}\left[\frac{1}{3}, -\frac{1}{2}, 1, \frac{4}{3}, -i \operatorname{Tan}[c + d x], i \operatorname{Tan}[c + d x]\right] \operatorname{Tan}[c + d x]^{1/3} \sqrt{a + i a \operatorname{Tan}[c + d x]}\right) \Big/ \left(d \sqrt{1 + i \operatorname{Tan}[c + d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{2/3}} \, dx$$

Problem 259: Unable to integrate problem.

$$\int \frac{(a + i a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{4/3}} \, dx$$

Optimal (type 6, 80 leaves, 4 steps):

$$-\left(\left(3 a \operatorname{AppellF1}\left[-\frac{1}{3}, -\frac{1}{2}, 1, \frac{2}{3}, -i \operatorname{Tan}[c + d x], i \operatorname{Tan}[c + d x]\right] \sqrt{a + i a \operatorname{Tan}[c + d x]}\right) \Big/ \left(d \sqrt{1 + i \operatorname{Tan}[c + d x]} \operatorname{Tan}[c + d x]^{1/3}\right)\right)$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \operatorname{Tan}[c + d x])^{3/2}}{\operatorname{Tan}[c + d x]^{4/3}} \, dx$$

Problem 260: Unable to integrate problem.

$$\int \frac{\operatorname{Tan}[c + d x]^{4/3}}{\sqrt{a + i a \operatorname{Tan}[c + d x]}} \, dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\left(3 \operatorname{AppellF1}\left[\frac{7}{3}, \frac{3}{2}, 1, \frac{10}{3}, -i \operatorname{Tan}[c + d x], i \operatorname{Tan}[c + d x]\right] \sqrt{1 + i \operatorname{Tan}[c + d x]} \operatorname{Tan}[c + d x]^{7/3}\right) \Big/ \left(7 d \sqrt{a + i a \operatorname{Tan}[c + d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\operatorname{Tan}[c + d x]^{4/3}}{\sqrt{a + i a \operatorname{Tan}[c + d x]}} \, dx$$

Problem 261: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^{2/3}}{\sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{5}{3}, \frac{3}{2}, 1, \frac{8}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \text{Tan}[c+d x]^{5/3}\right) \Big/ \left(5 d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\text{Tan}[c+d x]^{2/3}}{\sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Problem 262: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^{1/3}}{\sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{4}{3}, \frac{3}{2}, 1, \frac{7}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \text{Tan}[c+d x]^{4/3}\right) \Big/ \left(4 d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\text{Tan}[c+d x]^{1/3}}{\sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Problem 263: Unable to integrate problem.

$$\int \frac{1}{\text{Tan}[c+d x]^{1/3} \sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{2}{3}, \frac{3}{2}, 1, \frac{5}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \text{Tan}[c+d x]^{2/3}\right) \Big/ \left(2 d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\text{Tan}[c+d x]^{1/3} \sqrt{a+i a \text{Tan}[c+d x]}} \, dx$$

Problem 264: Unable to integrate problem.

$$\int \frac{1}{\mathrm{Tan}[c+d\,x]^{2/3}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 79 leaves, 4 steps):

$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{3},\frac{3}{2},1,\frac{4}{3},-\mathrm{i}\,\mathrm{Tan}[c+d\,x],\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]\sqrt{1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]}\;\mathrm{Tan}[c+d\,x]^{1/3}\right)\Big/\left(d\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\mathrm{Tan}[c+d\,x]^{2/3}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Problem 265: Unable to integrate problem.

$$\int \frac{1}{\mathrm{Tan}[c+d\,x]^{4/3}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 79 leaves, 4 steps):

$$-\left(\left(3\,\mathrm{AppellF1}\left[-\frac{1}{3},\frac{3}{2},1,\frac{2}{3},-\mathrm{i}\,\mathrm{Tan}[c+d\,x],\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]\sqrt{1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]}\right)\Big/\left(d\,\mathrm{Tan}[c+d\,x]^{1/3}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\right)\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\mathrm{Tan}[c+d\,x]^{4/3}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Problem 266: Unable to integrate problem.

$$\int \frac{\mathrm{Tan}[c+d\,x]^{4/3}}{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 6, 84 leaves, 4 steps):

$$\left(3\,\mathrm{AppellF1}\left[\frac{7}{3},\frac{5}{2},1,\frac{10}{3},-\mathrm{i}\,\mathrm{Tan}[c+d\,x],\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]\sqrt{1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]}\;\mathrm{Tan}[c+d\,x]^{7/3}\right)\Big/\left(7\,a\,d\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\mathrm{Tan}[c+d\,x]^{4/3}}{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Problem 267: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^{2/3}}{(a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Optimal (type 6, 84 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{5}{3}, \frac{5}{2}, 1, \frac{8}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \, \text{Tan}[c+d x]^{5/3}\right) \Big/ \left(5 a d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\text{Tan}[c+d x]^{2/3}}{(a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Problem 268: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^{1/3}}{(a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Optimal (type 6, 84 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{4}{3}, \frac{5}{2}, 1, \frac{7}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \, \text{Tan}[c+d x]^{4/3}\right) \Big/ \left(4 a d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\text{Tan}[c+d x]^{1/3}}{(a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Problem 269: Unable to integrate problem.

$$\int \frac{1}{\text{Tan}[c+d x]^{1/3} (a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Optimal (type 6, 84 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{2}{3}, \frac{5}{2}, 1, \frac{5}{3}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] \sqrt{1+i \text{Tan}[c+d x]} \, \text{Tan}[c+d x]^{2/3}\right) \Big/ \left(2 a d \sqrt{a+i a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\text{Tan}[c+d x]^{1/3} (a+i a \text{Tan}[c+d x])^{3/2}} \, dx$$

Problem 270: Unable to integrate problem.

$$\int \frac{1}{\text{Tan}[c+d x]^{2/3} \left(a+\text{i} a \text{Tan}[c+d x]\right)^{3/2}} \, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$\left(3 \text{AppellF1}\left[\frac{1}{3}, \frac{5}{2}, 1, \frac{4}{3}, -\text{i} \text{Tan}[c+d x], \text{i} \text{Tan}[c+d x]\right] \sqrt{1+\text{i} \text{Tan}[c+d x]} \text{Tan}[c+d x]^{1/3}\right) \Big/ \left(a d \sqrt{a+\text{i} a \text{Tan}[c+d x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\text{Tan}[c+d x]^{2/3} \left(a+\text{i} a \text{Tan}[c+d x]\right)^{3/2}} \, dx$$

Problem 271: Unable to integrate problem.

$$\int \frac{1}{\text{Tan}[c+d x]^{4/3} \left(a+\text{i} a \text{Tan}[c+d x]\right)^{3/2}} \, dx$$

Optimal (type 6, 82 leaves, 4 steps):

$$-\left(\left(3 \text{AppellF1}\left[-\frac{1}{3}, \frac{5}{2}, 1, \frac{2}{3}, -\text{i} \text{Tan}[c+d x], \text{i} \text{Tan}[c+d x]\right] \sqrt{1+\text{i} \text{Tan}[c+d x]}\right) \Big/ \left(a d \text{Tan}[c+d x]^{1/3} \sqrt{a+\text{i} a \text{Tan}[c+d x]}\right)\right)$$

Result (type 8, 30 leaves):

$$\int \frac{1}{\text{Tan}[c+d x]^{4/3} \left(a+\text{i} a \text{Tan}[c+d x]\right)^{3/2}} \, dx$$

Problem 272: Attempted integration timed out after 120 seconds.

$$\int \text{Tan}[c+d x]^3 \left(a+\text{i} a \text{Tan}[c+d x]\right)^{1/3} dx$$

Optimal (type 3, 234 leaves, 8 steps):

$$-\frac{\text{i} a^{1/3} x}{2 \times 2^{2/3}}+\frac{\sqrt{3} a^{1/3} \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3} \left(a+\text{i} a \text{Tan}[c+d x]\right)^{1/3}}{\sqrt{3} a^{1/3}}\right]}{2^{2/3} d}-\frac{a^{1/3} \text{Log}[\text{Cos}[c+d x]]}{2 \times 2^{2/3} d}-\frac{3 a^{1/3} \text{Log}\left[2^{1/3} a^{1/3}-\left(a+\text{i} a \text{Tan}[c+d x]\right)^{1/3}\right]}{2 \times 2^{2/3} d}-\frac{18 \left(a+\text{i} a \text{Tan}[c+d x]\right)^{1/3}}{7 d}+\frac{3 \text{Tan}[c+d x]^2 \left(a+\text{i} a \text{Tan}[c+d x]\right)^{1/3}}{7 d}-\frac{3 \left(a+\text{i} a \text{Tan}[c+d x]\right)^{4/3}}{28 a d}$$

Result (type 1, 1 leaves):

???

Problem 273: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Tan}[c+d\,x]^2\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\,dx$$

Optimal (type 3, 185 leaves, 6 steps):

$$\frac{a^{1/3}\,x}{2\times 2^{2/3}}+\frac{i\,\sqrt{3}\,a^{1/3}\,\mathrm{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2^{2/3}\,d}-\frac{i\,a^{1/3}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{2\times 2^{2/3}\,d}-\frac{3\,i\,a^{1/3}\,\mathrm{Log}\left[2^{1/3}\,a^{1/3}-\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]}{2\times 2^{2/3}\,d}-\frac{3\,i\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{4/3}}{4\,a\,d}$$

Result (type 1, 1 leaves):

???

Problem 274: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Tan}[c+d\,x]\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\,dx$$

Optimal (type 3, 174 leaves, 6 steps):

$$\frac{i\,a^{1/3}\,x}{2\times 2^{2/3}}-\frac{\sqrt{3}\,a^{1/3}\,\mathrm{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2^{2/3}\,d}+\frac{a^{1/3}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{2\times 2^{2/3}\,d}+\frac{3\,a^{1/3}\,\mathrm{Log}\left[2^{1/3}\,a^{1/3}-\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]}{2\times 2^{2/3}\,d}+\frac{3\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{d}$$

Result (type 1, 1 leaves):

???

Problem 275: Result unnecessarily involves higher level functions.

$$\int \left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\,dx$$

Optimal (type 3, 156 leaves, 5 steps):

$$-\frac{a^{1/3}\,x}{2\times 2^{2/3}}-\frac{i\,\sqrt{3}\,a^{1/3}\,\mathrm{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2^{2/3}\,d}+\frac{i\,a^{1/3}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{2\times 2^{2/3}\,d}+\frac{3\,i\,a^{1/3}\,\mathrm{Log}\left[2^{1/3}\,a^{1/3}-\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]}{2\times 2^{2/3}\,d}$$

Result (type 5, 66 leaves):

$$-\frac{1}{2\,d}3\,i\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/3}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^{1/3}$$

Problem 276: Unable to integrate problem.

$$\int \text{Cot}[c+d x] \left(a+i a \text{Tan}[c+d x]\right)^{1/3} dx$$

Optimal (type 3, 260 leaves, 11 steps):

$$-\frac{i a^{1/3} x}{2\times 2^{2/3}}-\frac{\sqrt{3} a^{1/3} \text{ArcTan}\left[\frac{a^{1/3}+2 (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3} a^{1/3}}\right]}{d}+\frac{\sqrt{3} a^{1/3} \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3} a^{1/3}}\right]}{2^{2/3} d}-\frac{a^{1/3} \text{Log}[\text{Cos}[c+d x]]}{2\times 2^{2/3} d}-\frac{a^{1/3} \text{Log}[\text{Tan}[c+d x]]}{2 d}+\frac{3 a^{1/3} \text{Log}\left[a^{1/3}-\left(a+i a \text{Tan}[c+d x]\right)^{1/3}\right]}{2 d}-\frac{3 a^{1/3} \text{Log}\left[2^{1/3} a^{1/3}-\left(a+i a \text{Tan}[c+d x]\right)^{1/3}\right]}{2\times 2^{2/3} d}$$

Result (type 8, 26 leaves):

$$\int \text{Cot}[c+d x] \left(a+i a \text{Tan}[c+d x]\right)^{1/3} dx$$

Problem 277: Attempted integration timed out after 120 seconds.

$$\int \text{Cot}[c+d x]^2 \left(a+i a \text{Tan}[c+d x]\right)^{1/3} dx$$

Optimal (type 3, 299 leaves, 12 steps):

$$\frac{a^{1/3} x}{2\times 2^{2/3}}-\frac{i a^{1/3} \text{ArcTan}\left[\frac{a^{1/3}+2 (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3} a^{1/3}}\right]}{\sqrt{3} d}+\frac{i \sqrt{3} a^{1/3} \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3} a^{1/3}}\right]}{2^{2/3} d}-\frac{i a^{1/3} \text{Log}[\text{Cos}[c+d x]]}{2\times 2^{2/3} d}-\frac{i a^{1/3} \text{Log}[\text{Tan}[c+d x]]}{6 d}+\frac{i a^{1/3} \text{Log}\left[a^{1/3}-\left(a+i a \text{Tan}[c+d x]\right)^{1/3}\right]}{2 d}-\frac{3 i a^{1/3} \text{Log}\left[2^{1/3} a^{1/3}-\left(a+i a \text{Tan}[c+d x]\right)^{1/3}\right]}{2\times 2^{2/3} d}-\frac{\text{Cot}[c+d x] \left(a+i a \text{Tan}[c+d x]\right)^{1/3}}{d}$$

Result (type 1, 1 leaves):

???

Problem 278: Attempted integration timed out after 120 seconds.

$$\int \text{Cot}[c+d x]^3 \left(a+i a \text{Tan}[c+d x]\right)^{1/3} dx$$

Optimal (type 3, 327 leaves, 13 steps):

$$\frac{i\, a^{1/3}\, x}{2\times 2^{2/3}}+\frac{8\, a^{1/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{3\sqrt{3}\, d}-\frac{\sqrt{3}\, a^{1/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2^{2/3}\, d}+\frac{a^{1/3}\, \text{Log}[\text{Cos}[c+d\, x]]}{2\times 2^{2/3}\, d}+\frac{4\, a^{1/3}\, \text{Log}[\text{Tan}[c+d\, x]]}{9\, d}-\frac{4\, a^{1/3}\, \text{Log}\left[a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{3\, d}+\frac{3\, a^{1/3}\, \text{Log}\left[2^{1/3}\, a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{2\times 2^{2/3}\, d}-\frac{i\, \text{Cot}[c+d\, x]\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{6\, d}-\frac{\text{Cot}[c+d\, x]^2\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{2\, d}$$

Result (type 1, 1 leaves):

???

Problem 279: Result unnecessarily involves higher level functions.

$$\int (a+i\, a\, \text{Tan}[c+d\, x])^{2/3}\, dx$$

Optimal (type 3, 156 leaves, 5 steps):

$$-\frac{a^{2/3}\, x}{2\times 2^{1/3}}+\frac{i\sqrt{3}\, a^{2/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2^{1/3}\, d}+\frac{i\, a^{2/3}\, \text{Log}[\text{Cos}[c+d\, x]]}{2\times 2^{1/3}\, d}+\frac{3\, i\, a^{2/3}\, \text{Log}\left[2^{1/3}\, a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{2\times 2^{1/3}\, d}$$

Result (type 5, 86 leaves):

$$-\frac{1}{2\times 2^{1/3}\, d}3\, i\left(\frac{a\, e^{2\, i\, (c+d\, x)}}{1+e^{2\, i\, (c+d\, x)}}\right)^{2/3}\left(1+e^{2\, i\, (c+d\, x)}\right)^{2/3}\, \text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\, i\, (c+d\, x)}\right]$$

Problem 280: Attempted integration timed out after 120 seconds.

$$\int \text{Tan}[c+d\, x]^3\, (a+i\, a\, \text{Tan}[c+d\, x])^{4/3}\, dx$$

Optimal (type 3, 251 leaves, 9 steps):

$$-\frac{i\, a^{4/3}\, x}{2^{2/3}}+\frac{2^{1/3}\sqrt{3}\, a^{4/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}-\frac{a^{4/3}\, \text{Log}[\text{Cos}[c+d\, x]]}{2^{2/3}\, d}-\frac{3\, a^{4/3}\, \text{Log}\left[2^{1/3}\, a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{2^{2/3}\, d}-\frac{3\, a\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{d}-\frac{9\, (a+i\, a\, \text{Tan}[c+d\, x])^{4/3}}{20\, d}+\frac{3\, \text{Tan}[c+d\, x]^2\, (a+i\, a\, \text{Tan}[c+d\, x])^{4/3}}{10\, d}-\frac{6\, (a+i\, a\, \text{Tan}[c+d\, x])^{7/3}}{35\, a\, d}$$

Result (type 1, 1 leaves):

???

Problem 281: Attempted integration timed out after 120 seconds.

$$\int \operatorname{Tan}[c+d x]^2 \left(a+i a \operatorname{Tan}[c+d x]\right)^{4/3} dx$$

Optimal (type 3, 203 leaves, 7 steps):

$$\frac{a^{4/3} x}{2^{2/3}}+\frac{i\, 2^{1/3} \sqrt{3}\, a^{4/3} \operatorname{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \operatorname{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}-\frac{i a^{4/3} \operatorname{Log}[\operatorname{Cos}[c+d x]]}{2^{2/3} d}-\frac{3 i a^{4/3} \operatorname{Log}\left[2^{1/3} a^{1/3}-\left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}\right]}{2^{2/3} d}-\frac{3 i a \left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}}{d}-\frac{3 i \left(a+i a \operatorname{Tan}[c+d x]\right)^{7/3}}{7 a d}$$

Result (type 1, 1 leaves):

???

Problem 282: Attempted integration timed out after 120 seconds.

$$\int \operatorname{Tan}[c+d x] \left(a+i a \operatorname{Tan}[c+d x]\right)^{4/3} dx$$

Optimal (type 3, 192 leaves, 7 steps):

$$\frac{i a^{4/3} x}{2^{2/3}}-\frac{2^{1/3} \sqrt{3}\, a^{4/3} \operatorname{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \operatorname{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}+\frac{a^{4/3} \operatorname{Log}[\operatorname{Cos}[c+d x]]}{2^{2/3} d}+\frac{3 a^{4/3} \operatorname{Log}\left[2^{1/3} a^{1/3}-\left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}\right]}{2^{2/3} d}+\frac{3 a \left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}}{d}+\frac{3 \left(a+i a \operatorname{Tan}[c+d x]\right)^{4/3}}{4 d}$$

Result (type 1, 1 leaves):

???

Problem 283: Result unnecessarily involves higher level functions.

$$\int \left(a+i a \operatorname{Tan}[c+d x]\right)^{4/3} dx$$

Optimal (type 3, 175 leaves, 6 steps):

$$-\frac{a^{4/3} x}{2^{2/3}}-\frac{i\, 2^{1/3} \sqrt{3}\, a^{4/3} \operatorname{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \operatorname{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}+\frac{i a^{4/3} \operatorname{Log}[\operatorname{Cos}[c+d x]]}{2^{2/3} d}+\frac{3 i a^{4/3} \operatorname{Log}\left[2^{1/3} a^{1/3}-\left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}\right]}{2^{2/3} d}+\frac{3 i a \left(a+i a \operatorname{Tan}[c+d x]\right)^{1/3}}{d}$$

Result (type 5, 68 leaves):

$$-\frac{1}{d}3\,i\,a\left(-1+\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/3}\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]\right)\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{1/3}$$

Problem 284: Unable to integrate problem.

$$\int \text{Cot}[c+d\,x]\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{4/3}\,dx$$

Optimal (type 3, 254 leaves, 13 steps):

$$-\frac{i\,a^{4/3}\,x}{2^{2/3}}-\frac{\sqrt{3}\,a^{4/3}\,\text{ArcTan}\left[\frac{a^{1/3}+2\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{d}+\frac{2^{1/3}\,\sqrt{3}\,a^{4/3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{d}-\frac{a^{4/3}\,\text{Log}[\text{Cos}[c+d\,x]]}{2^{2/3}\,d}-\frac{a^{4/3}\,\text{Log}[\text{Tan}[c+d\,x]]}{2\,d}+\frac{3\,a^{4/3}\,\text{Log}\left[a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{2\,d}-\frac{3\,a^{4/3}\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{2^{2/3}\,d}$$

Result (type 8, 26 leaves):

$$\int \text{Cot}[c+d\,x]\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{4/3}\,dx$$

Problem 285: Unable to integrate problem.

$$\int \text{Cot}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{4/3}\,dx$$

Optimal (type 3, 315 leaves, 13 steps):

$$\frac{a^{4/3}\,x}{2^{2/3}}-\frac{4\,i\,a^{4/3}\,\text{ArcTan}\left[\frac{a^{1/3}+2\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{\sqrt{3}\,d}+\frac{i\,2^{1/3}\,\sqrt{3}\,a^{4/3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{d}-\frac{i\,a^{4/3}\,\text{Log}[\text{Cos}[c+d\,x]]}{2^{2/3}\,d}-\frac{2\,i\,a^{4/3}\,\text{Log}[\text{Tan}[c+d\,x]]}{3\,d}+\frac{2\,i\,a^{4/3}\,\text{Log}\left[a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{d}-\frac{3\,i\,a^{4/3}\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{2^{2/3}\,d}+\frac{i\,a\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{d}-\frac{\text{Cot}[c+d\,x]\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}{d}$$

Result (type 8, 28 leaves):

$$\int \text{Cot}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{4/3}\,dx$$

Problem 286: Attempted integration timed out after 120 seconds.

$$\int \text{Cot}[c+d\,x]^3\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{4/3}\,dx$$

Optimal (type 3, 321 leaves, 13 steps):

$$\frac{i\, a^{4/3}\, x}{2^{2/3}}+\frac{11\, a^{4/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{3\, \sqrt{3}\, d}-\frac{2^{1/3}\, \sqrt{3}\, a^{4/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}+\frac{a^{4/3}\, \text{Log}[\text{Cos}[c+d\, x]]}{2^{2/3}\, d}+\frac{11\, a^{4/3}\, \text{Log}[\text{Tan}[c+d\, x]]}{18\, d}-\frac{11\, a^{4/3}\, \text{Log}\left[a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{6\, d}+\frac{3\, a^{4/3}\, \text{Log}\left[2^{1/3}\, a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{2^{2/3}\, d}-\frac{2\, i\, a\, \text{Cot}[c+d\, x]\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{3\, d}-\frac{\text{Cot}[c+d\, x]^2\, (a+i\, a\, \text{Tan}[c+d\, x])^{4/3}}{2\, d}$$

Result (type 1, 1 leaves):

???

Problem 287: Result unnecessarily involves higher level functions.

$$\int (a+i\, a\, \text{Tan}[c+d\, x])^{5/3}\, dx$$

Optimal (type 3, 177 leaves, 6 steps):

$$-\frac{a^{5/3}\, x}{2^{1/3}}+\frac{i\, 2^{2/3}\, \sqrt{3}\, a^{5/3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{d}+\frac{i\, a^{5/3}\, \text{Log}[\text{Cos}[c+d\, x]]}{2^{1/3}\, d}+\frac{3\, i\, a^{5/3}\, \text{Log}\left[2^{1/3}\, a^{1/3}-(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right]}{2^{1/3}\, d}+\frac{3\, i\, a\, (a+i\, a\, \text{Tan}[c+d\, x])^{2/3}}{2\, d}$$

Result (type 5, 88 leaves):

$$-\frac{1}{2^{1/3}\, d}3\, i\, a\left(\frac{a\, e^{2\, i\, (c+d\, x)}}{1+e^{2\, i\, (c+d\, x)}}\right)^{2/3}\left(-1+\left(1+e^{2\, i\, (c+d\, x)}\right)^{2/3}\, \text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\, i\, (c+d\, x)}\right]\right)$$

Problem 288: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Tan}[c+d\, x]^m}{(a+i\, a\, \text{Tan}[c+d\, x])^{1/3}}\, dx$$

Optimal (type 6, 83 leaves, 3 steps):

$$\left(\text{AppellF1}\left[1+m,\frac{4}{3},1,2+m,-i\, \text{Tan}[c+d\, x],i\, \text{Tan}[c+d\, x]\right](1+i\, \text{Tan}[c+d\, x])^{1/3}\, \text{Tan}[c+d\, x]^{1+m}\right)\Big/\left(d\, (1+m)\, (a+i\, a\, \text{Tan}[c+d\, x])^{1/3}\right)$$

Result (type 1, 1 leaves):

???

Problem 289: Unable to integrate problem.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\left(2\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-i\,\text{Tan}[c+d\,x],\,i\,\text{Tan}[c+d\,x]\right]\,(1+i\,\text{Tan}[c+d\,x])^{1/3}\,\text{Tan}[c+d\,x]^{3/2}\right)\Big/\left(3\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Problem 290: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Tan}[c+d\,x]^4}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 3, 282 leaves, 9 steps):

$$-\frac{x}{4\times 2^{1/3}\,a^{1/3}}+\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2\times 2^{1/3}\,a^{1/3}\,d}+\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{4\times 2^{1/3}\,a^{1/3}\,d}+\frac{3\,i\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\times 2^{1/3}\,a^{1/3}\,d}-\frac{15\,i\,\text{Tan}[c+d\,x]^2}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}+\frac{3\,\text{Tan}[c+d\,x]^3}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}+\frac{45\,i\,(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}}{8\,a\,d}-\frac{39\,i\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/3}}{20\,a^2\,d}$$

Result (type 5, 131 leaves):

$$-\left(\left(3\,i\,\text{Sec}[c+d\,x]^3\left(5\,e^{-i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{8/3}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]-4\,(37\,\text{Cos}[c+d\,x]+12\,\text{Cos}[3\,(c+d\,x)]+2\,i\,\text{Sin}[c+d\,x]+7\,i\,\text{Sin}[3\,(c+d\,x)])\right)\right)\Big/\left(160\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)\right)$$

Problem 291: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Tan}[c+d\,x]^3}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 3, 237 leaves, 8 steps):

$$-\frac{i x}{4\times 2^{1/3} a^{1/3}}-\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2\times 2^{1/3} a^{1/3} d}-\frac{\text{Log}[\text{Cos}[c+d x]]}{4\times 2^{1/3} a^{1/3} d}-\frac{3\,\text{Log}\left[2^{1/3} a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{4\times 2^{1/3} a^{1/3} d}+\frac{21}{10 d (a+i a \text{Tan}[c+d x])^{1/3}}+\frac{3\,\text{Tan}[c+d x]^2}{5 d (a+i a \text{Tan}[c+d x])^{1/3}}+\frac{3 (a+i a \text{Tan}[c+d x])^{2/3}}{10 a d}$$

Result (type 5, 98 leaves):

$$\left(3\,\text{Sec}[c+d x]^2\left(40+24\,\text{Cos}[2(c+d x)]+5\left(1+e^{2 i (c+d x)}\right)^{5/3}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i (c+d x)}\right]+4 i\,\text{Sin}[2(c+d x)]\right)\right)\Big/\left(80 d (a+i a \text{Tan}[c+d x])^{1/3}\right)$$

Problem 292: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Tan}[c+d x]^2}{(a+i a \text{Tan}[c+d x])^{1/3}}\,dx$$

Optimal (type 3, 213 leaves, 7 steps):

$$\frac{x}{4\times 2^{1/3} a^{1/3}}-\frac{i\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2\times 2^{1/3} a^{1/3} d}-\frac{i\,\text{Log}[\text{Cos}[c+d x]]}{4\times 2^{1/3} a^{1/3} d}-\frac{3 i\,\text{Log}\left[2^{1/3} a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{4\times 2^{1/3} a^{1/3} d}-\frac{3 i}{2 d (a+i a \text{Tan}[c+d x])^{1/3}}-\frac{3 i (a+i a \text{Tan}[c+d x])^{2/3}}{2 a d}$$

Result (type 5, 108 leaves):

$$\left(3 i\left(-2-6 e^{2 i (c+d x)}+e^{2 i (c+d x)}\left(1+e^{2 i (c+d x)}\right)^{2/3}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i (c+d x)}\right]\right)\right)\Big/\left(4 d\left(1+e^{2 i (c+d x)}\right)(a+i a \text{Tan}[c+d x])^{1/3}\right)$$

Problem 293: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Tan}[c+d x]}{(a+i a \text{Tan}[c+d x])^{1/3}}\,dx$$

Optimal (type 3, 178 leaves, 6 steps):

$$\frac{i x}{4\times 2^{1/3} a^{1/3}}+\frac{\sqrt{3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2\times 2^{1/3} a^{1/3} d}+\frac{\text{Log}[\text{Cos}[c+d x]]}{4\times 2^{1/3} a^{1/3} d}+\frac{3 \text{Log}\left[2^{1/3} a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{4\times 2^{1/3} a^{1/3} d}-\frac{3}{2 d (a+i a \text{Tan}[c+d x])^{1/3}}$$

Result (type 5, 140 leaves):

$$-\left(\left(3\left(2\left(1+e^{2 i d x}\right) \text{Cos}[c]+e^{i (c+2 d x)}\left(1+e^{2 i (c+d x)}\right)^{2/3} \text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i (c+d x)}\right]+2 i\left(-1+e^{2 i d x}\right) \text{Sin}[c]\right)\right)\Big/\left(4 d\left(\left(1+e^{2 i d x}\right) \text{Cos}[c]+i\left(-1+e^{2 i d x}\right) \text{Sin}[c]\right)(a+i a \text{Tan}[c+d x])^{1/3}\right)\right)$$

Problem 294: Result unnecessarily involves higher level functions.

$$\int \frac{1}{(a+i a \text{Tan}[c+d x])^{1/3}} \, dx$$

Optimal (type 3, 184 leaves, 6 steps):

$$-\frac{x}{4\times 2^{1/3} a^{1/3}}+\frac{i \sqrt{3}\, \text{ArcTan}\left[\frac{a^{1/3}+2^{2/3} (a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\, a^{1/3}}\right]}{2\times 2^{1/3} a^{1/3} d}+\frac{i \text{Log}[\text{Cos}[c+d x]]}{4\times 2^{1/3} a^{1/3} d}+\frac{3 i \text{Log}\left[2^{1/3} a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{4\times 2^{1/3} a^{1/3} d}+\frac{3 i}{2 d (a+i a \text{Tan}[c+d x])^{1/3}}$$

Result (type 5, 141 leaves):

$$\left(3\left(-2\left(1+e^{2 i d x}\right) \text{Cos}[c]+e^{i (c+2 d x)}\left(1+e^{2 i (c+d x)}\right)^{2/3} \text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i (c+d x)}\right]-2 i\left(-1+e^{2 i d x}\right) \text{Sin}[c]\right)\right)\Big/\left(4 d\left(i\left(1+e^{2 i d x}\right) \text{Cos}[c]-\left(-1+e^{2 i d x}\right) \text{Sin}[c]\right)(a+i a \text{Tan}[c+d x])^{1/3}\right)$$

Problem 295: Unable to integrate problem.

$$\int \frac{\text{Cot}[c+d x]}{(a+i a \text{Tan}[c+d x])^{1/3}} \, dx$$

Optimal (type 3, 286 leaves, 13 steps):

$$-\frac{i x}{4\times 2^{1/3} a^{1/3}}+\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{a^{1/3}\,d}-\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2\times 2^{1/3}\,a^{1/3}\,d}-\frac{\text{Log}[\text{Cos}[c+d\,x]]}{4\times 2^{1/3}\,a^{1/3}\,d}-\frac{\text{Log}[\text{Tan}[c+d\,x]]}{2\,a^{1/3}\,d}+\frac{3\,\text{Log}\left[a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{2\,a^{1/3}\,d}-\frac{3\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\times 2^{1/3}\,a^{1/3}\,d}+\frac{3}{2\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 8, 26 leaves):

$$\int\frac{\text{Cot}[c+d\,x]}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Problem 296: Unable to integrate problem.

$$\int\frac{\text{Cot}[c+d\,x]^2}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 3, 327 leaves, 13 steps):

$$\frac{x}{4\times 2^{1/3}\,a^{1/3}}-\frac{i\,\text{ArcTan}\left[\frac{a^{1/3}+2\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{\sqrt{3}\,a^{1/3}\,d}-\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2\times 2^{1/3}\,a^{1/3}\,d}-\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{4\times 2^{1/3}\,a^{1/3}\,d}+\frac{i\,\text{Log}[\text{Tan}[c+d\,x]]}{6\,a^{1/3}\,d}-\frac{i\,\text{Log}\left[a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{2\,a^{1/3}\,d}-\frac{3\,i\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\times 2^{1/3}\,a^{1/3}\,d}-\frac{5\,i}{2\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}-\frac{\text{Cot}[c+d\,x]}{d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 8, 28 leaves):

$$\int\frac{\text{Cot}[c+d\,x]^2}{(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}\,dx$$

Problem 297: Result unnecessarily involves higher level functions.

$$\int\frac{1}{(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}}\,dx$$

Optimal (type 3, 184 leaves, 6 steps):

$$-\frac{x}{4\times 2^{2/3}\,a^{2/3}}-\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{2\times 2^{2/3}\,a^{2/3}\,d}+\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{4\times 2^{2/3}\,a^{2/3}\,d}+\frac{3\,i\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\times 2^{2/3}\,a^{2/3}\,d}+\frac{3\,i}{4\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}}$$

Result (type 5, 141 leaves):

$$\left(3\left(1+e^{2 i d x}\right)\mathrm{Cos}[c]-6 e^{i (c+2 d x)}\left(1+e^{2 i (c+d x)}\right)^{1/3}\mathrm{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{3},\frac{4}{3},-e^{2 i (c+d x)}\right]+3 i\left(-1+e^{2 i d x}\right)\mathrm{Sin}[c]\right)\Big/\left(4 d\left(-i\left(1+e^{2 i d x}\right)\mathrm{Cos}[c]+\left(-1+e^{2 i d x}\right)\mathrm{Sin}[c]\right)\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{2/3}\right)$$

Problem 298: Unable to integrate problem.

$$\int\frac{\mathrm{Tan}[c+d x]^m}{\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{4/3}}\,dx$$

Optimal (type 6, 86 leaves, 3 steps):

$$\left(\mathrm{AppellF1}\left[1+m,\frac{7}{3},1,2+m,-i\,\mathrm{Tan}[c+d x],i\,\mathrm{Tan}[c+d x]\right]\left(1+i\,\mathrm{Tan}[c+d x]\right)^{1/3}\mathrm{Tan}[c+d x]^{1+m}\right)\Big/\left(a\,d\,(1+m)\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{1/3}\right)$$

Result (type 8, 28 leaves):

$$\int\frac{\mathrm{Tan}[c+d x]^m}{\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{4/3}}\,dx$$

Problem 299: Unable to integrate problem.

$$\int\frac{\sqrt{\mathrm{Tan}[c+d x]}}{\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{4/3}}\,dx$$

Optimal (type 6, 84 leaves, 4 steps):

$$\left(2\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{7}{3},1,\frac{5}{2},-i\,\mathrm{Tan}[c+d x],i\,\mathrm{Tan}[c+d x]\right]\left(1+i\,\mathrm{Tan}[c+d x]\right)^{1/3}\mathrm{Tan}[c+d x]^{3/2}\right)\Big/\left(3\,a\,d\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{1/3}\right)$$

Result (type 8, 30 leaves):

$$\int\frac{\sqrt{\mathrm{Tan}[c+d x]}}{\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{4/3}}\,dx$$

Problem 300: Result unnecessarily involves higher level functions.

$$\int\frac{\mathrm{Tan}[c+d x]^4}{\left(a+i\,a\,\mathrm{Tan}[c+d x]\right)^{4/3}}\,dx$$

Optimal (type 3, 282 leaves, 9 steps):

$$-\frac{x}{8\times 2^{1/3}a^{4/3}}+\frac{i\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}a^{4/3}d}+\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{1/3}a^{4/3}d}+\frac{3\,i\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{1/3}a^{4/3}d}-\frac{39\,i\,\text{Tan}[c+d\,x]^2}{40\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}+\frac{3\,\text{Tan}[c+d\,x]^3}{5\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}-\frac{51\,i}{10\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}-\frac{87\,i\,(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}}{40\,a^2\,d}$$

Result (type 5, 141 leaves):

$$-\left(\left(3\,\text{Sec}[c+d\,x]^3\left(275\,\text{Cos}[c+d\,x]+113\,\text{Cos}[3\,(c+d\,x)]+5\,e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/3}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]+150\,i\,\text{Sin}[c+d\,x]+118\,i\,\text{Sin}[3\,(c+d\,x)]\right)\right)\Big/\left(160\,a\,d\,(-i+\text{Tan}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)\right)$$

Problem 301: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Tan}[c+d\,x]^3}{(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 3, 237 leaves, 8 steps):

$$-\frac{i\,x}{8\times 2^{1/3}a^{4/3}}-\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}a^{4/3}d}-\frac{\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{1/3}a^{4/3}d}-\frac{3\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{1/3}a^{4/3}d}+\frac{15}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}+\frac{3\,\text{Tan}[c+d\,x]^2}{2\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}-\frac{27}{4\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 5, 126 leaves):

$$\left(3\,i\,\text{Sec}[c+d\,x]^2\left(9+17\,\text{Cos}[2\,(c+d\,x)]-e^{2\,i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{2/3}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]+18\,i\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(16\,a\,d\,(-i+\text{Tan}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)$$

Problem 302: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Tan}[c+d\,x]^2}{(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 3, 213 leaves, 7 steps):

$$\frac{x}{8\times 2^{1/3}\,a^{4/3}}-\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}\,a^{4/3}\,d}-\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{1/3}\,a^{4/3}\,d}-\frac{3\,i\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{1/3}\,a^{4/3}\,d}-\frac{3\,i}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}+\frac{9\,i}{4\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 5, 123 leaves):

$$\left(3\,\text{Sec}[c+d\,x]^2\left(5+5\,\text{Cos}[2\,(c+d\,x)]+e^{2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]+6\,i\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(16\,a\,d\,(-i+\text{Tan}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)$$

Problem 303: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Tan}[c+d\,x]}{(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 3, 205 leaves, 7 steps):

$$\frac{i\,x}{8\times 2^{1/3}\,a^{4/3}}+\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}\,a^{4/3}\,d}+\frac{\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{1/3}\,a^{4/3}\,d}+\frac{3\,\text{Log}\left[2^{1/3}\,a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{1/3}\,a^{4/3}\,d}-\frac{3}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}+\frac{3}{4\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 5, 125 leaves):

$$\left(3\,i\,\text{Sec}[c+d\,x]^2\left(-1-\text{Cos}[2\,(c+d\,x)]+e^{2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]-2\,i\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(16\,a\,d\,(-i+\text{Tan}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right)$$

Problem 304: Result unnecessarily involves higher level functions.

$$\int\frac{1}{(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 3, 213 leaves, 7 steps):

$$-\frac{x}{8\times 2^{1/3}a^{4/3}}+\frac{i\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}a^{4/3}d}+\frac{i\,\text{Log}[\text{Cos}[c+d x]]}{8\times 2^{1/3}a^{4/3}d}+\frac{3 i\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{8\times 2^{1/3}a^{4/3}d}+\frac{3 i}{8 d (a+i a \text{Tan}[c+d x])^{4/3}}+\frac{3 i}{4 a d (a+i a \text{Tan}[c+d x])^{1/3}}$$

Result (type 5, 124 leaves):

$$\left(3\,\text{Sec}[c+d x]^2\left(3+3\,\text{Cos}[2(c+d x)]-e^{2 i (c+d x)}\left(1+e^{2 i (c+d x)}\right)^{2/3}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i (c+d x)}\right]+2 i\,\text{Sin}[2(c+d x)]\right)\right)\Big/\left(16 a d(-i+\text{Tan}[c+d x])(a+i a \text{Tan}[c+d x])^{1/3}\right)$$

Problem 305: Unable to integrate problem.

$$\int\frac{\text{Cot}[c+d x]}{(a+i a \text{Tan}[c+d x])^{4/3}}\,dx$$

Optimal (type 3, 313 leaves, 15 steps):

$$-\frac{i x}{8\times 2^{1/3}a^{4/3}}+\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2(a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{a^{4/3}d}-\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}(a+i a \text{Tan}[c+d x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}a^{4/3}d}-\frac{\text{Log}[\text{Cos}[c+d x]]}{8\times 2^{1/3}a^{4/3}d}-\frac{\text{Log}[\text{Tan}[c+d x]]}{2 a^{4/3}d}+\frac{3\,\text{Log}\left[a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{2 a^{4/3}d}-\frac{3\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i a \text{Tan}[c+d x])^{1/3}\right]}{8\times 2^{1/3}a^{4/3}d}+\frac{3}{8 d (a+i a \text{Tan}[c+d x])^{4/3}}+\frac{9}{4 a d (a+i a \text{Tan}[c+d x])^{1/3}}$$

Result (type 8, 26 leaves):

$$\int\frac{\text{Cot}[c+d x]}{(a+i a \text{Tan}[c+d x])^{4/3}}\,dx$$

Problem 306: Unable to integrate problem.

$$\int\frac{\text{Cot}[c+d x]^2}{(a+i a \text{Tan}[c+d x])^{4/3}}\,dx$$

Optimal (type 3, 354 leaves, 14 steps):

$$\frac{x}{8\times 2^{1/3}a^{4/3}}-\frac{4\,i\,\text{ArcTan}\left[\frac{a^{1/3}+2\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{\sqrt{3}\,a^{4/3}\,d}-\frac{i\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{1/3}a^{4/3}\,d}-\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{1/3}a^{4/3}\,d}+\frac{2\,i\,\text{Log}[\text{Tan}[c+d\,x]]}{3\,a^{4/3}\,d}-\frac{2\,i\,\text{Log}\left[a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{a^{4/3}\,d}-\frac{3\,i\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{1/3}a^{4/3}\,d}-\frac{11\,i}{8\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}-\frac{\text{Cot}[c+d\,x]}{d\,(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}-\frac{19\,i}{4\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 8, 28 leaves):

$$\int\frac{\text{Cot}[c+d\,x]^2}{(a+i\,a\,\text{Tan}[c+d\,x])^{4/3}}\,dx$$

Problem 307: Result unnecessarily involves higher level functions.

$$\int\frac{1}{(a+i\,a\,\text{Tan}[c+d\,x])^{5/3}}\,dx$$

Optimal (type 3, 213 leaves, 7 steps):

$$-\frac{x}{8\times 2^{2/3}a^{5/3}}-\frac{i\sqrt{3}\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}}{\sqrt{3}\,a^{1/3}}\right]}{4\times 2^{2/3}a^{5/3}\,d}+\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{8\times 2^{2/3}a^{5/3}\,d}+\frac{3\,i\,\text{Log}\left[2^{1/3}a^{1/3}-(a+i\,a\,\text{Tan}[c+d\,x])^{1/3}\right]}{8\times 2^{2/3}a^{5/3}\,d}+\frac{3\,i}{10\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/3}}+\frac{3\,i}{8\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}}$$

Result (type 5, 124 leaves):

$$\left(3\,\text{Sec}[c+d\,x]^2\left(9+9\,\text{Cos}[2\,(c+d\,x)]-10\,e^{2\,i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/3}\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]+5\,i\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(80\,a\,d\,(-i+\text{Tan}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{2/3}\right)$$

Problem 308: Unable to integrate problem.

$$\int(e\,\text{Tan}[c+d\,x])^m\,(a+i\,a\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 43 leaves, 2 steps):

$$\frac{1}{d\,e\,(1+m)}a\,\text{Hypergeometric2F1}[1,1+m,2+m,i\,\text{Tan}[c+d\,x]]\,(e\,\text{Tan}[c+d\,x])^{1+m}$$

Result (type 8, 26 leaves):

$$\int (e\,\mathrm{Tan}[c+d\,x])^m\,(a+i\,a\,\mathrm{Tan}[c+d\,x])\,dx$$

Problem 310: Unable to integrate problem.

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^4\,dx$$

Optimal (type 5, 189 leaves, 6 steps):

$$-\frac{2\,a^4\,(16+11\,n+2\,n^2)\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}}{d\,f\,(1+n)\,(2+n)\,(3+n)}+\frac{1}{d\,f\,(1+n)}8\,a^4\,\mathrm{Hypergeometric2F1}[1,1+n,2+n,i\,\mathrm{Tan}[e+f\,x]]\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}-\frac{(d\,\mathrm{Tan}[e+f\,x])^{1+n}\,(a^2+i\,a^2\,\mathrm{Tan}[e+f\,x])^2}{d\,f\,(3+n)}-\frac{2\,(4+n)\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}\,(a^4+i\,a^4\,\mathrm{Tan}[e+f\,x])}{d\,f\,(2+n)\,(3+n)}$$

Result (type 8, 28 leaves):

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^4\,dx$$

Problem 311: Unable to integrate problem.

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3\,dx$$

Optimal (type 5, 127 leaves, 5 steps):

$$-\frac{a^3\,(5+2\,n)\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}}{d\,f\,(1+n)\,(2+n)}+\frac{1}{d\,f\,(1+n)}4\,a^3\,\mathrm{Hypergeometric2F1}[1,1+n,2+n,i\,\mathrm{Tan}[e+f\,x]]\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}-\frac{(d\,\mathrm{Tan}[e+f\,x])^{1+n}\,(a^3+i\,a^3\,\mathrm{Tan}[e+f\,x])}{d\,f\,(2+n)}$$

Result (type 8, 28 leaves):

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3\,dx$$

Problem 312: Unable to integrate problem.

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^2\,dx$$

Optimal (type 5, 75 leaves, 4 steps):

$$-\frac{a^2\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}}{d\,f\,(1+n)}+\frac{1}{d\,f\,(1+n)}2\,a^2\,\mathrm{Hypergeometric2F1}[1,1+n,2+n,i\,\mathrm{Tan}[e+f\,x]]\,(d\,\mathrm{Tan}[e+f\,x])^{1+n}$$

Result (type 8, 28 leaves):

$$\int (d\,\text{Tan}[e+f\,x])^n\,(a+i\,a\,\text{Tan}[e+f\,x])^2\,dx$$

Problem 313: Unable to integrate problem.

$$\int (d\,\text{Tan}[e+f\,x])^n\,(a+i\,a\,\text{Tan}[e+f\,x])\,dx$$

Optimal (type 5, 43 leaves, 2 steps):

$$\frac{1}{d\,f\,(1+n)}a\,\text{Hypergeometric2F1}[1,\,1+n,\,2+n,\,i\,\text{Tan}[e+f\,x]]\,(d\,\text{Tan}[e+f\,x])^{1+n}$$

Result (type 8, 26 leaves):

$$\int (d\,\text{Tan}[e+f\,x])^n\,(a+i\,a\,\text{Tan}[e+f\,x])\,dx$$

Problem 314: Unable to integrate problem.

$$\int \frac{(d\,\text{Tan}[e+f\,x])^n}{a+i\,a\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 5, 158 leaves, 6 steps):

$$\frac{1}{2\,a\,d\,f\,(1+n)}(1-n)\,\text{Hypergeometric2F1}\left[1,\,\frac{1+n}{2},\,\frac{3+n}{2},\,-\text{Tan}[e+f\,x]^2\right]\,(d\,\text{Tan}[e+f\,x])^{1+n}+$$
$$\frac{1}{2\,a\,d^2\,f\,(2+n)}i\,n\,\text{Hypergeometric2F1}\left[1,\,\frac{2+n}{2},\,\frac{4+n}{2},\,-\text{Tan}[e+f\,x]^2\right]\,(d\,\text{Tan}[e+f\,x])^{2+n}+$$
$$\frac{(d\,\text{Tan}[e+f\,x])^{1+n}}{2\,d\,f\,(a+i\,a\,\text{Tan}[e+f\,x])}$$

Result (type 8, 28 leaves):

$$\int \frac{(d\,\text{Tan}[e+f\,x])^n}{a+i\,a\,\text{Tan}[e+f\,x]}\,dx$$

Problem 315: Unable to integrate problem.

$$\int \frac{(d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 5, 209 leaves, 7 steps):

$$\frac{1}{4\,a^2\,d\,f\,(1+n)}(1-n)^2\,\text{Hypergeometric2F1}\left[1,\frac{1+n}{2},\frac{3+n}{2},-\text{Tan}[e+f\,x]^2\right](d\,\text{Tan}[e+f\,x])^{1+n}+$$
$$\frac{(2-n)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{4\,a^2\,d\,f\,(1+i\,\text{Tan}[e+f\,x])}+\frac{1}{4\,a^2\,d^2\,f\,(2+n)}$$
$$i\,(2-n)\,n\,\text{Hypergeometric2F1}\left[1,\frac{2+n}{2},\frac{4+n}{2},-\text{Tan}[e+f\,x]^2\right](d\,\text{Tan}[e+f\,x])^{2+n}+$$
$$\frac{(d\,\text{Tan}[e+f\,x])^{1+n}}{4\,d\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2}$$

Result (type 8, 28 leaves):

$$\int\frac{(d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^2}\,dx$$

Problem 316: Unable to integrate problem.

$$\int\frac{(d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 5, 274 leaves, 8 steps):

$$\frac{1}{24\,a^3\,d\,f\,(1+n)}(1-2\,n)\,(1-n)\,(3-n)$$
$$\text{Hypergeometric2F1}\left[1,\frac{1+n}{2},\frac{3+n}{2},-\text{Tan}[e+f\,x]^2\right](d\,\text{Tan}[e+f\,x])^{1+n}+\frac{1}{24\,a^3\,d^2\,f\,(2+n)}$$
$$i\,(5-2\,n)\,(2-n)\,n\,\text{Hypergeometric2F1}\left[1,\frac{2+n}{2},\frac{4+n}{2},-\text{Tan}[e+f\,x]^2\right](d\,\text{Tan}[e+f\,x])^{2+n}+$$
$$\frac{(d\,\text{Tan}[e+f\,x])^{1+n}}{6\,d\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^3}+\frac{(7-2\,n)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{24\,a\,d\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2}+\frac{(5-2\,n)\,(2-n)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{24\,d\,f\,(a^3+i\,a^3\,\text{Tan}[e+f\,x])}$$

Result (type 8, 28 leaves):

$$\int\frac{(d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Problem 317: Unable to integrate problem.

$$\int\frac{(d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^4}\,dx$$

Optimal (type 5, 326 leaves, 9 steps):

$$\frac{1}{48\,a^4\,d\,f\,(1+n)}(1-n)\,(3-n)\,(1-4\,n+n^2)$$
$$\text{Hypergeometric2F1}\left[1,\frac{1+n}{2},\frac{3+n}{2},-\text{Tan}[e+f\,x]^2\right]\,(d\,\text{Tan}[e+f\,x])^{1+n}+$$
$$\frac{(13-7\,n+n^2)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{48\,a^4\,d\,f\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])^2}+\frac{(2-n)^2\,(4-n)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{48\,a^4\,d\,f\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])}+\frac{1}{48\,a^4\,d^2\,f\,(2+n)}$$
$$\mathrm{i}\,(2-n)^2\,(4-n)\,n\,\text{Hypergeometric2F1}\left[1,\frac{2+n}{2},\frac{4+n}{2},-\text{Tan}[e+f\,x]^2\right]\,(d\,\text{Tan}[e+f\,x])^{2+n}+$$
$$\frac{(d\,\text{Tan}[e+f\,x])^{1+n}}{8\,d\,f\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^4}+\frac{(5-n)\,(d\,\text{Tan}[e+f\,x])^{1+n}}{24\,a\,d\,f\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^3}$$

Result (type 8, 28 leaves):

$$\int\frac{(d\,\text{Tan}[e+f\,x])^n}{(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^4}\,dx$$

Problem 320: Unable to integrate problem.

$$\int(d\,\text{Tan}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 6, 89 leaves, 3 steps):

$$\left(a\,\text{AppellF1}\left[1+n,-\frac{1}{2},1,2+n,-\mathrm{i}\,\text{Tan}[e+f\,x],\mathrm{i}\,\text{Tan}[e+f\,x]\right]\right.$$
$$\left.(d\,\text{Tan}[e+f\,x])^{1+n}\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\right)\Big/\left(d\,f\,(1+n)\,\sqrt{1+\mathrm{i}\,\text{Tan}[e+f\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int(d\,\text{Tan}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Problem 321: Unable to integrate problem.

$$\int(d\,\text{Tan}[e+f\,x])^n\,\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 6, 89 leaves, 3 steps):

$$\left(a\,\text{AppellF1}\left[1+n,\frac{1}{2},1,2+n,-\mathrm{i}\,\text{Tan}[e+f\,x],\mathrm{i}\,\text{Tan}[e+f\,x]\right]\right.$$
$$\left.\sqrt{1+\mathrm{i}\,\text{Tan}[e+f\,x]}\,(d\,\text{Tan}[e+f\,x])^{1+n}\right)\Big/\left(d\,f\,(1+n)\,\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\right)$$

Result (type 8, 30 leaves):

$$\int(d\,\text{Tan}[e+f\,x])^n\,\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Problem 322: Attempted integration timed out after 120 seconds.

$$\int \frac{(d \operatorname{Tan}[e+f x])^n}{\sqrt{a+i a \operatorname{Tan}[e+f x]}} \, dx$$

Optimal (type 6, 88 leaves, 3 steps):

$$\left(\operatorname{AppellF1}\left[1+n, \frac{3}{2}, 1, 2+n, -i \operatorname{Tan}[e+f x], i \operatorname{Tan}[e+f x]\right] \sqrt{1+i \operatorname{Tan}[e+f x]} \, (d \operatorname{Tan}[e+f x])^{1+n}\right) \Big/ \left(d f (1+n) \sqrt{a+i a \operatorname{Tan}[e+f x]}\right)$$

Result (type 1, 1 leaves):

???

Problem 323: Unable to integrate problem.

$$\int \frac{(d \operatorname{Tan}[e+f x])^n}{(a+i a \operatorname{Tan}[e+f x])^{3/2}} \, dx$$

Optimal (type 6, 91 leaves, 3 steps):

$$\left(\operatorname{AppellF1}\left[1+n, \frac{5}{2}, 1, 2+n, -i \operatorname{Tan}[e+f x], i \operatorname{Tan}[e+f x]\right] \sqrt{1+i \operatorname{Tan}[e+f x]} \, (d \operatorname{Tan}[e+f x])^{1+n}\right) \Big/ \left(a d f (1+n) \sqrt{a+i a \operatorname{Tan}[e+f x]}\right)$$

Result (type 8, 30 leaves):

$$\int \frac{(d \operatorname{Tan}[e+f x])^n}{(a+i a \operatorname{Tan}[e+f x])^{3/2}} \, dx$$

Problem 324: Unable to integrate problem.

$$\int (d \operatorname{Tan}[e+f x])^n (a+i a \operatorname{Tan}[e+f x])^m \, dx$$

Optimal (type 6, 88 leaves, 3 steps):

$$\frac{1}{d f (1+n)} \operatorname{AppellF1}[1+n, 1-m, 1, 2+n, -i \operatorname{Tan}[e+f x], i \operatorname{Tan}[e+f x]] \, (1+i \operatorname{Tan}[e+f x])^{-m} (d \operatorname{Tan}[e+f x])^{1+n} (a+i a \operatorname{Tan}[e+f x])^m$$

Result (type 8, 28 leaves):

$$\int (d \operatorname{Tan}[e+f x])^n (a+i a \operatorname{Tan}[e+f x])^m \, dx$$

Problem 325: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^4\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 205 leaves, 6 steps):

$$\frac{2\,i\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,\left(6+5\,m+m^2\right)}-\frac{1}{2\,d\,m}$$
$$i\,\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+i\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m-$$
$$\frac{i\,m\,\text{Tan}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,\left(6+5\,m+m^2\right)}+$$
$$\frac{\text{Tan}[c+d\,x]^3\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,(3+m)}+\frac{i\,\left(6+3\,m+m^2\right)\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{1+m}}{a\,d\,(1+m)\,(2+m)\,(3+m)}$$

Result (type 8, 26 leaves):

$$\int \text{Tan}[c+d\,x]^4\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 326: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^3\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 144 leaves, 5 steps):

$$-\frac{2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,m\,(2+m)}+\frac{1}{2\,d\,m}$$
$$\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+i\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m+$$
$$\frac{\text{Tan}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,(2+m)}-\frac{m\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^{1+m}}{a\,d\,\left(2+3\,m+m^2\right)}$$

Result (type 8, 26 leaves):

$$\int \text{Tan}[c+d\,x]^3\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 327: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^2\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 82 leaves, 3 steps):

$$\frac{1}{2\,d\,m}\,\mathrm{i}\,\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+\mathrm{i}\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m-\frac{\mathrm{i}\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^{1+m}}{a\,d\,(1+m)}$$

Result (type 8, 26 leaves):

$$\int \text{Tan}[c+d\,x]^2\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 328: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 70 leaves, 3 steps):

$$\frac{\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m}{d\,m}-\frac{1}{2\,d\,m}\,\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+\mathrm{i}\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Result (type 5, 153 leaves):

$$\frac{1}{d\,m\,(1+m)}2^{-1+m}\,\left(e^{\mathrm{i}\,d\,x}\right)^m\,\left(\frac{e^{\mathrm{i}\,(c+d\,x)}}{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right)^m\,\left(1+m-e^{2\,\mathrm{i}\,(c+d\,x)}\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)^m\,m\,\text{Hypergeometric2F1}\left[1+m,\,1+m,\,2+m,\,-e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)\,\text{Sec}[c+d\,x]^{-m}\,\left(\text{Cos}[d\,x]+\mathrm{i}\,\text{Sin}[d\,x]\right)^{-m}\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Problem 329: Result more than twice size of optimal antiderivative.

$$\int \left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 49 leaves, 2 steps):

$$-\frac{1}{2\,d\,m}\,\mathrm{i}\,\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+\mathrm{i}\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Result (type 5, 130 leaves):

$$-\frac{1}{d\,m}\,\mathrm{i}\,2^{-1+m}\,\left(e^{\mathrm{i}\,d\,x}\right)^m\,\left(\frac{e^{\mathrm{i}\,(c+d\,x)}}{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right)^m\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)^m\,\text{Hypergeometric2F1}\left[m,\,m,\,1+m,\,-e^{2\,\mathrm{i}\,(c+d\,x)}\right]\,\text{Sec}[c+d\,x]^{-m}\,\left(\text{Cos}[d\,x]+\mathrm{i}\,\text{Sin}[d\,x]\right)^{-m}\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Problem 330: Unable to integrate problem.

$$\int \text{Cot}[c+d\,x]\,\left(a+\mathrm{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 89 leaves, 5 steps):

$$\frac{1}{2\,d\,m}\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m-$$
$$\frac{1}{d\,m}\text{Hypergeometric2F1}[1,\,m,\,1+m,\,1+\mathbb{i}\,\text{Tan}[c+d\,x]]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Result (type 8, 24 leaves):

$$\int\text{Cot}[c+d\,x]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 331: Unable to integrate problem.

$$\int\text{Cot}[c+d\,x]^2\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 5, 116 leaves, 6 steps):

$$-\frac{\text{Cot}[c+d\,x]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m}{d}+\frac{1}{2\,d\,m}$$
$$\mathbb{i}\,\text{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)\right]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m-$$
$$\frac{1}{d}\mathbb{i}\,\text{Hypergeometric2F1}[1,\,m,\,1+m,\,1+\mathbb{i}\,\text{Tan}[c+d\,x]]\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Result (type 8, 26 leaves):

$$\int\text{Cot}[c+d\,x]^2\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 332: Unable to integrate problem.

$$\int\text{Tan}[c+d\,x]^{3/2}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\frac{1}{5\,d}2\,\text{AppellF1}\left[\frac{5}{2},\,1-m,\,1,\,\frac{7}{2},\,-\mathbb{i}\,\text{Tan}[c+d\,x],\,\mathbb{i}\,\text{Tan}[c+d\,x]\right]$$
$$\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)^{-m}\,\text{Tan}[c+d\,x]^{5/2}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m$$

Result (type 8, 28 leaves):

$$\int\text{Tan}[c+d\,x]^{3/2}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Problem 333: Unable to integrate problem.

$$\int\sqrt{\text{Tan}[c+d\,x]}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^m\,dx$$

Optimal (type 6, 81 leaves, 4 steps):

$$\frac{1}{3 d} 2 \text{AppellF1}\left[\frac{3}{2}, 1-m, 1, \frac{5}{2}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] (1+i \text{Tan}[c+d x])^{-m} \text{Tan}[c+d x]^{3/2} (a+i a \text{Tan}[c+d x])^m$$

Result (type 8, 28 leaves):

$$\int \sqrt{\text{Tan}[c+d x]} (a+i a \text{Tan}[c+d x])^m dx$$

Problem 334: Unable to integrate problem.

$$\int \frac{(a+i a \text{Tan}[c+d x])^m}{\sqrt{\text{Tan}[c+d x]}} dx$$

Optimal (type 6, 79 leaves, 4 steps):

$$\frac{1}{d} 2 \text{AppellF1}\left[\frac{1}{2}, 1-m, 1, \frac{3}{2}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] (1+i \text{Tan}[c+d x])^{-m} \sqrt{\text{Tan}[c+d x]} (a+i a \text{Tan}[c+d x])^m$$

Result (type 8, 28 leaves):

$$\int \frac{(a+i a \text{Tan}[c+d x])^m}{\sqrt{\text{Tan}[c+d x]}} dx$$

Problem 335: Unable to integrate problem.

$$\int \frac{(a+i a \text{Tan}[c+d x])^m}{\text{Tan}[c+d x]^{3/2}} dx$$

Optimal (type 6, 79 leaves, 4 steps):

$$-\frac{1}{d \sqrt{\text{Tan}[c+d x]}} 2 \text{AppellF1}\left[-\frac{1}{2}, 1-m, 1, \frac{1}{2}, -i \text{Tan}[c+d x], i \text{Tan}[c+d x]\right] (1+i \text{Tan}[c+d x])^{-m} (a+i a \text{Tan}[c+d x])^m$$

Result (type 8, 28 leaves):

$$\int \frac{(a+i a \text{Tan}[c+d x])^m}{\text{Tan}[c+d x]^{3/2}} dx$$

Problem 378: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]^5 \sqrt{1+\text{Tan}[e+f x]} dx$$

Optimal (type 3, 264 leaves, 11 steps):

$$-\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{f}-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{f}+\frac{2\sqrt{1+\text{Tan}[e+f x]}}{f}+\frac{52\left(1+\text{Tan}[e+f x]\right)^{3/2}}{315 f}-\frac{26\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{3/2}}{105 f}-\frac{4\,\text{Tan}[e+f x]^2\left(1+\text{Tan}[e+f x]\right)^{3/2}}{21 f}+\frac{2\,\text{Tan}[e+f x]^3\left(1+\text{Tan}[e+f x]\right)^{3/2}}{9 f}$$

Result (type 3, 150 leaves):

$$\Big(\text{Cos}[e+f x]\left(1+\text{Tan}[e+f x]\right)\Big(-315\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]-315\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]+2\sqrt{1+\text{Tan}[e+f x]}\ \big(445+35\,\text{Sec}[e+f x]^4-18\,\text{Tan}[e+f x]+\text{Sec}[e+f x]^2\left(-139+5\,\text{Tan}[e+f x]\right)\big)\Big)\Big)\Big/\Big(315 f\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\Big)$$

Problem 379: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]^3\sqrt{1+\text{Tan}[e+f x]}\,dx$$

Optimal (type 3, 208 leaves, 9 steps):

$$\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{f}+\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{f}-\frac{2\sqrt{1+\text{Tan}[e+f x]}}{f}-\frac{4\left(1+\text{Tan}[e+f x]\right)^{3/2}}{15 f}+\frac{2\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{3/2}}{5 f}$$

Result (type 3, 100 leaves):

$$\frac{1}{15 f}\left(15\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]+15\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]+2\sqrt{1+\text{Tan}[e+f x]}\ \left(-20+3\,\text{Sec}[e+f x]^2+\text{Tan}[e+f x]\right)\right)$$

Problem 380: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Tan}[e+f x]\,\sqrt{1+\mathrm{Tan}[e+f x]}\,dx$$

Optimal (type 3, 166 leaves, 6 steps):

$$-\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\ \mathrm{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \mathrm{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}+\frac{2\sqrt{1+\mathrm{Tan}[e+f x]}}{f}$$

Result (type 3, 78 leaves):

$$-\frac{1}{f}\left(\sqrt{1-i}\ \mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1-i}}\right]+\sqrt{1+i}\ \mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1+i}}\right]-2\sqrt{1+\mathrm{Tan}[e+f x]}\right)$$

Problem 381: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[e+f x]\,\sqrt{1+\mathrm{Tan}[e+f x]}\,dx$$

Optimal (type 3, 165 leaves, 9 steps):

$$\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\ \mathrm{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}-\frac{2\,\mathrm{ArcTanh}\left[\sqrt{1+\mathrm{Tan}[e+f x]}\right]}{f}+\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \mathrm{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}$$

Result (type 4, 4921 leaves):

$$-\left(\left(2\times 2^{3/4}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]\,\mathrm{Cot}[e+f x]\right.\right.$$

$$\left(\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-\right.$$

$$(1-\mathbb{i})\ \text{EllipticPi}\left[-\mathbb{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$(1+\mathbb{i})\ \text{EllipticPi}\left[\mathbb{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\ \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\ \sqrt{1+\text{Tan}[e+f x]}\right)\Big/$$

$$\left(f\sqrt{-\left(-2+\sqrt{2}\right)\text{Sec}[e+f x]}\ \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right.$$

$$\Bigg(-\left(1\Big/\left(\sqrt{-\left(-2+\sqrt{2}\right)\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right)\right)$$

$$2^{3/4}\left(\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$(1-i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(1+i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}\left[\frac{1}{2}(e+f x)\right]$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}+$$

$$\left(1\Big/\left(\sqrt{-\left(-2+\sqrt{2}\right)\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)^2\right)\right)2\times 2^{3/4}$$

$$\text{Cos}\left[\frac{1}{2}(e+f x)\right]\left(\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$(1-i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(1+i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\left(\frac{3}{2}\text{Cos}\left[\frac{3}{2}(e+f x)\right]-\frac{1}{2}\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}-$$

$$\left(2^{3/4}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\left(\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.\right.$$

$$(1-i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(1+i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\left(\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]\right)\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}\right)\Bigg/\left(\sqrt{-\left(-2+\sqrt{2}\right)\text{Sec}[e+f\,x]}\right.$$

$$\left.\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]\right)\right)+$$

$$\left(1\Bigg/\left(\sqrt{-\left(-2+\sqrt{2}\right)\text{Sec}[e+f\,x]}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]\right)\right)\right)$$

$$2^{3/4}\left(\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.$$

$$(1-i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(1+i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\Bigg)$$

$$\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\ -$$

$$\Bigg(2^{3/4}\,\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]\Bigg(\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$\left(1-i\right)\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$\left(1+i\right)\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)}{\left(-1+\text{Sin}[e+f x]\right)^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)$$

$$\left.\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\right) \Big/ \left(\sqrt{-\left(-2+\sqrt{2}\right)\mathrm{Sec}[e+f x]}\right.$$

$$\left.\sqrt{\frac{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}{-1+\mathrm{Sin}[e+f x]}}\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{3}{2}\left(e+f x\right)\right]\right)\right)-$$

$$\left(2^{3/4}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]\left(\mathrm{EllipticPi}\left[-1-\sqrt{2},\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.\right.$$

$$\left(1-i\right)\mathrm{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left(1+i\right)\mathrm{EllipticPi}\left[i\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.\mathrm{EllipticPi}\left[1+\sqrt{2},\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}\sqrt{\frac{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}{-1+\mathrm{Sin}[e+f x]}}\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)$$

$$\left.\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\right) \Big/$$

$$\left(\sqrt{-\left(-2+\sqrt{2}\right)\,\text{Sec}[e+f\,x]}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)\right.$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\right)-$$

$$\left(1\Big/\left(\sqrt{-\left(-2+\sqrt{2}\right)\,\text{Sec}[e+f\,x]}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)\right)\right)$$

$$2\times 2^{3/4}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}$$

$$\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}$$

$$\left(\left(\frac{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{2\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\right)\Big/\right.$$

$$\left(2^{3/4}\,\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left.\left(1-\frac{\sqrt{2}\,\left(-1-\sqrt{2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)+$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{2\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\right)\Big/$$

$$\left(2^{3/4}\,\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\Bigg) -$$

$$\left((1+i)\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right) -$$

$$\left((1-i)\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\Bigg)\Bigg) -$$

$$\left(1\Big/\left(\left(-\left(-2+\sqrt{2}\right)\text{Sec}[e+f x]\right)^{3/2}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right)\right)$$

$$2^{3/4}\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(e+f x)\right]$$

$$\left(\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-\right.$$

$$(1-i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(1+i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\text{Sec}[e+f x]\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}$$

$$\left.\left.\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\text{Tan}[e+f x]\right)\right)\right)$$

Problem 382: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f x]^3\sqrt{1+\text{Tan}[e+f x]}\,dx$$

Optimal (type 3, 221 leaves, 11 steps):

$$-\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\,\text{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{f}+$$

$$\frac{9\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{4 f}-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\,\text{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{f}-$$

$$\frac{\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]}}{4 f}-\frac{\text{Cot}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}}{2 f}$$

Result (type 4, 4049 leaves) :

$$\frac{\left(\frac{1}{2}-\frac{1}{4}\,\text{Cot}[e+f\,x]-\frac{1}{2}\,\text{Csc}[e+f\,x]^2\right)\sqrt{1+\text{Tan}[e+f\,x]}}{f}-$$

$$\left(\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.\right.$$

$$9\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8-8\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8+8\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.9\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\left(-\frac{5\,\text{Csc}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]}}{8\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}-\frac{\text{Cos}[2(e+f\,x)]\,\text{Csc}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]}}{2\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}-\right.$$

$$\left.\frac{\text{Csc}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]}\,\text{Sin}[2(e+f\,x)]}{2\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\sqrt{1+\text{Tan}[e+f\,x]}\right)\Big/$$

$$\left(2\times 2^{1/4} f \sqrt{\frac{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}{-1+\mathrm{Sin}[e+f x]}}\right.$$

$$\left(-\frac{1}{4\times 2^{1/4}\sqrt{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}\sqrt{\frac{\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]}{-1+\mathrm{Sin}[e+f x]}}}\right.$$

$$\left(\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$9\,\mathrm{EllipticPi}\left[-1-\sqrt{2},\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8-8\,i)\,\mathrm{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8+8\,i)\,\mathrm{EllipticPi}\left[i\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.9\,\mathrm{EllipticPi}\left[1+\sqrt{2},\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\mathrm{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$9\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8-8\,\text{i})\,\text{EllipticPi}\left[-\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(8+8\,\text{i})\,\text{EllipticPi}\left[\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.9\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{4\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$9\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(8-8\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(8+8\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$\left.9\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\left(\frac{\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f\,x]\,(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x])}{(-1+\text{Sin}[e+f\,x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}-$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}}$$

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.$$

$$9\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(8-8\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(8+8\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$\left.9\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)-$$

$$\frac{1}{2\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)-$$

$$\left(9\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(9\left(\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left((4+4\,i)\,2^{1/4}\left(\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left((4-4\,i)\,2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\Bigg)\Bigg)$$

Problem 383: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f x]^5\sqrt{1+\text{Tan}[e+f x]}\,dx$$

Optimal (type 3, 273 leaves, 13 steps):

$$\frac{\sqrt{\frac{1}{2}\left(-1+\sqrt{2}\right)}\,\text{ArcTan}\left[\frac{4-3\sqrt{2}+\left(2-\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{-7+5\sqrt{2}}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{f}-$$

$$\frac{139\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{64 f}+\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\,\text{ArcTanh}\left[\frac{4+3\sqrt{2}+\left(2+\sqrt{2}\right)\text{Tan}[e+f x]}{2\sqrt{7+5\sqrt{2}}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{f}+$$

$$\frac{11\,\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]}}{64 f}+\frac{53\,\text{Cot}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}}{96 f}-$$

$$\frac{\text{Cot}[e+f x]^3\sqrt{1+\text{Tan}[e+f x]}}{24 f}-\frac{\text{Cot}[e+f x]^4\sqrt{1+\text{Tan}[e+f x]}}{4 f}$$

Result (type 4, 4090 leaves):

$$\frac{1}{f}\left(-\frac{77}{96}+\frac{41}{192}\text{Cot}[e+f x]+\frac{101}{96}\text{Csc}[e+f x]^2-\frac{1}{24}\text{Cot}[e+f x]\,\text{Csc}[e+f x]^2-\frac{1}{4}\text{Csc}[e+f x]^4\right)$$

$$\sqrt{1+\text{Tan}[e+f x]}+\Bigg(\Bigg(11\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Big],-3-2\sqrt{2}\Big]-$$

$$139\,\text{EllipticPi}\Big[-1-\sqrt{2},\text{ArcSin}\Big[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Big],-3-2\sqrt{2}\Big]+$$

$$(128-128\,i)\,\text{EllipticPi}\Big[-i\left(1+\sqrt{2}\right),\text{ArcSin}\Big[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Big],-3-2\sqrt{2}\Big]+$$

$$(128+128\,i)\,\text{EllipticPi}\Big[i\left(1+\sqrt{2}\right),\text{ArcSin}\Big[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Big],-3-2\sqrt{2}\Big]-$$

$$139\,\text{EllipticPi}\Big[1+\sqrt{2},\text{ArcSin}\Big[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Big],-3-2\sqrt{2}\Big]\Bigg)$$

$$\left(\frac{75\,\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{128\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}+\frac{\text{Cos}[2(e+f x)]\,\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{2\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}+\right.$$
$$\left.\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}\,\text{Sin}[2(e+f x)]}{2\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}\right)$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\sqrt{1+\text{Tan}[e+f x]}\Bigg)\Bigg/$$

$$\left(32\times 2^{1/4}\, f\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(\frac{1}{64\times 2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(11\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.$$

$$139\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(128-128\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$(128+128\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$\left.139\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\ (\text{Cos}[e+f x]-\text{Sin}[e+f x])\ \sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\ +$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(11\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$139\ \text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(128-128\,i)\ \text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$(128+128\,i)\ \text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.139\ \text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\ -$$

$$\frac{1}{64\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(11\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$139\,\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$(128-128\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$(128+128\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$\left.139\,\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\,(\text{Cos}[e+f x]+\text{Sin}[e+f x])}{(-1+\text{Sin}[e+f x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\left(11\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-\right.$$

$$139\,\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$(128-128\,i)\ \text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$(128+128\,i)\ \text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$\left.139\ \text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)+$$

$$\frac{1}{32\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(11\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\ \sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)-$$

$$\left(139\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(139\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)+\left((64+64\,\mathbb{i})\,2^{1/4}\right.$$

$$\left.\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\mathbb{i}\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)+\left((64-64\,\mathbb{i})\,2^{1/4}\right.$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left.\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)\right)\right)$$

Problem 384: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+fx]^4\sqrt{1+\text{Tan}[e+fx]}\,dx$$

Optimal (type 3, 318 leaves, 14 steps):

$$-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}-\frac{18\left(1+\text{Tan}[e+f x]\right)^{3/2}}{35 f}-$$

$$\frac{8\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{3/2}}{35 f}+\frac{2\,\text{Tan}[e+f x]^2\left(1+\text{Tan}[e+f x]\right)^{3/2}}{7 f}$$

Result (type 3, 118 leaves):

$$\frac{1}{35 f}\left(-35\,i\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]+35\,i\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]+\right.$$
$$\left.2\sqrt{1+\text{Tan}[e+f x]}\ \left(\text{Sec}[e+f x]^2\left(1+5\,\text{Tan}[e+f x]\right)-2\left(5+9\,\text{Tan}[e+f x]\right)\right)\right)$$

Problem 385: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}\ dx$$

Optimal (type 3, 266 leaves, 12 steps):

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-$$

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}+\frac{2\left(1+\text{Tan}[e+f x]\right)^{3/2}}{3 f}$$

Result (type 3, 86 leaves) :

$$\frac{1}{3 f}\left(3\,\mathbb{i}\,\sqrt{1-\mathbb{i}}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-\mathbb{i}}}\right]-\right.$$
$$\left.3\,\mathbb{i}\,\sqrt{1+\mathbb{i}}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+\mathbb{i}}}\right]+2\left(1+\text{Tan}[e+f x]\right)^{3/2}\right)$$

Problem 386: Result unnecessarily involves imaginary or complex numbers.

$$\int\sqrt{1+\text{Tan}[e+f x]}\ \mathbb{d}x$$

Optimal (type 3, 247 leaves, 11 steps) :

$$-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}$$

Result (type 3, 67 leaves):

$$-\frac{i\left(\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]-\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]\right)}{f}$$

Problem 387: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f x]^2\ \sqrt{1+\text{Tan}[e+f x]}\ dx$$

Optimal (type 3, 288 leaves, 16 steps):

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \mathrm{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\mathrm{Tan}[e+f\,x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-$$

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \mathrm{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\mathrm{Tan}[e+f\,x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-\frac{\mathrm{ArcTanh}\left[\sqrt{1+\mathrm{Tan}[e+f\,x]}\right]}{f}-$$

$$\frac{\mathrm{Log}\left[1+\sqrt{2}+\mathrm{Tan}[e+f\,x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f\,x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}+$$

$$\frac{\mathrm{Log}\left[1+\sqrt{2}+\mathrm{Tan}[e+f\,x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f\,x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}-\frac{\mathrm{Cot}[e+f\,x]\ \sqrt{1+\mathrm{Tan}[e+f\,x]}}{f}$$

Result (type 4, 3958 leaves):

$$-\frac{\mathrm{Cot}[e+f\,x]\ \sqrt{1+\mathrm{Tan}[e+f\,x]}}{f}-$$

$$\Bigg(2^{3/4}\Bigg(\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\mathrm{EllipticPi}\Bigg[$$

$$-1-\sqrt{2},\ \mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\Bigg]-$$

$$(2+2\,i)\ \mathrm{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left(2-2\,\mathrm{i}\right)\,\text{EllipticPi}\left[\mathrm{i}\,\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\,\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\,\right]\right)$$

$$\left(\frac{\text{Cos}\left[2\,\left(e+f\,x\right)\right]\,\text{Csc}\left[e+f\,x\right]\,\sqrt{\text{Sec}\left[e+f\,x\right]}}{2\,\sqrt{\text{Cos}\left[e+f\,x\right]+\text{Sin}\left[e+f\,x\right]}}-\frac{\text{Csc}\left[e+f\,x\right]\,\sqrt{\text{Sec}\left[e+f\,x\right]}\,\,\text{Sin}\left[2\,\left(e+f\,x\right)\right]}{2\,\sqrt{\text{Cos}\left[e+f\,x\right]+\text{Sin}\left[e+f\,x\right]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]}{\left(-2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\right)}}\,\,\sqrt{1+\text{Tan}\left[e+f\,x\right]}\right)\Bigg/$$

$$\left(f\,\sqrt{\frac{\text{Cos}\left[e+f\,x\right]+\text{Sin}\left[e+f\,x\right]}{-1+\text{Sin}\left[e+f\,x\right]}}\,\left(-\frac{1}{2^{1/4}\,\sqrt{\text{Cos}\left[e+f\,x\right]+\text{Sin}\left[e+f\,x\right]}\,\,\sqrt{\frac{\text{Cos}\left[e+f\,x\right]+\text{Sin}\left[e+f\,x\right]}{-1+\text{Sin}\left[e+f\,x\right]}}}\right.\right.$$

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\,\right]+\right.$$

$$\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\,\right]-$$

$$\left(2+2\,\mathrm{i}\right)\,\text{EllipticPi}\left[-\mathrm{i}\,\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\,\right]-$$

$$\left(2-2\,\mathrm{i}\right)\,\text{EllipticPi}\left[\mathrm{i}\,\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]\right)\,\sqrt{\text{Sec}[e+f\,x]}$$

$$\left(\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]\right)\,\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]}{\left(-2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\right)}}\,-$$

$$\frac{1}{2^{1/4}\,\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]+\right.$$

$$\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]-$$

$$\left(2+2\,\mathrm{i}\right)\,\text{EllipticPi}\left[-\mathrm{i}\,\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]-$$

$$\left(2-2\,\mathrm{i}\right)\,\text{EllipticPi}\left[\mathrm{i}\,\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\,\sqrt{2}\right]\right)\,\text{Sec}[e+f\,x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(2+2 i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(2-2 i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)}{\left(-1+\text{Sin}[e+f x]\right)^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(2+2\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(2-2\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)-$$

$$\frac{1}{\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\,2^{3/4}\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\ \sqrt{1-\frac{\sqrt{2}\ \left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\ \left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right)+$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\ \sqrt{1-\frac{\sqrt{2}\ \left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\ \left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\ \left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}\right)\right)+$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\ \sqrt{1-\frac{\sqrt{2}\ \left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\ \left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\ \left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}\right)\right)-$$

$$\left(\left(1-i\right)2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left(1-\frac{i\,\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)-$$

$$\left((1+i)\,2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\right)\right)\bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left(1+\frac{i\,\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)\Bigg)\Bigg)$$

Problem 388: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[e+f\,x]^4\,\sqrt{1+\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 346 leaves, 19 steps):

$$-\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\sqrt{\frac{1}{2}\left(1+\sqrt{2}\right)}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+\frac{7\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{8 f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{2\left(1+\sqrt{2}\right)}\ f}+\frac{9\,\text{Cot}[e+f x]\ \sqrt{1+\text{Tan}[e+f x]}}{8 f}-$$

$$\frac{\text{Cot}[e+f x]^2\ \sqrt{1+\text{Tan}[e+f x]}}{12 f}-\frac{\text{Cot}[e+f x]^3\ \sqrt{1+\text{Tan}[e+f x]}}{3 f}$$

Result (type 4, 4078 leaves):

$$\frac{1}{f}\left(\frac{1}{12}+\frac{35}{24}\text{Cot}[e+f x]-\frac{1}{12}\text{Csc}[e+f x]^2-\frac{1}{3}\text{Cot}[e+f x]\ \text{Csc}[e+f x]^2\right)\sqrt{1+\text{Tan}[e+f x]}+$$

$$\Bigg(\Bigg(9\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$7\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(16+16\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(16-16\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.7\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\left(\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{16\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}-\frac{\text{Cos}\left[2\left(e+f x\right)\right]\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{2\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}+\right.$$

$$\left.\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}\,\text{Sin}\left[2\left(e+f x\right)\right]}{2\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\,\sqrt{1+\text{Tan}[e+f x]}\right)\Bigg/$$

$$\left(4\times 2^{1/4} f\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(\frac{1}{8\times 2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(9\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$7\,\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$(16+16\,i)\ \text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$(16-16\,i)\ \text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$\left.7\,\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f\,x]}$$

$$(\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x])\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\left(9\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+\right.$$

$$7\,\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$(16+16\,i)\ \text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$(16-16\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.7\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{8\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(9\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$7\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(16+16\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$(16-16\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.7\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\ (\text{Cos}[e+f x]+\text{Sin}[e+f x])}{(-1+\text{Sin}[e+f x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\left(9\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$7\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(16+16\,i)\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$(16-16\,i)\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.7\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)+$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\sqrt{\text{Sec}[e+f x]}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(9\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)+$$

$$\left(7\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left(7\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\Bigg) -$$

$$\left((8-8\,i)\,2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right) -$$

$$\left((8+8\,i)\,2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\Bigg)\Bigg)$$

Problem 389: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]^5 \left(1+\text{Tan}[e+f x]\right)^{3/2} \, dx$$

Optimal (type 3, 369 leaves, 19 steps):

$$\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$
$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}-$$
$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}+\frac{2\sqrt{1+\text{Tan}[e+f x]}}{f}+$$
$$\frac{2\left(1+\text{Tan}[e+f x]\right)^{3/2}}{3 f}+\frac{20\left(1+\text{Tan}[e+f x]\right)^{5/2}}{231 f}-\frac{50\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{5/2}}{231 f}-$$
$$\frac{4\,\text{Tan}[e+f x]^2\left(1+\text{Tan}[e+f x]\right)^{5/2}}{33 f}+\frac{2\,\text{Tan}[e+f x]^3\left(1+\text{Tan}[e+f x]\right)^{5/2}}{11 f}$$

Result (type 3, 188 leaves):

$$\Bigg(\text{Cos}[e+f x]$$
$$\left(\left(-1+i\right)\left(\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]+i\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]\right)\right.$$
$$\text{Cos}[e+f x]\left(1+\text{Tan}[e+f x]\right)^2+\frac{2}{231}\text{Sec}[e+f x]^3\left(1+\text{Tan}[e+f x]\right)^{5/2}$$
$$\left(28-110\,\text{Cos}[e+f x]^2+400\,\text{Cos}[e+f x]^4+125\,\text{Cos}[e+f x]^3\,\text{Sin}[e+f x]-\right.$$
$$\left.\left.37\,\text{Sin}\left[2\left(e+f x\right)\right]+21\,\text{Tan}[e+f x]\right)\right)\Bigg)\Bigg/\left(f\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)^2\right)$$

Problem 390: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]^3 \left(1+\text{Tan}[e+f x]\right)^{3/2} \, dx$$

Optimal (type 3, 315 leaves, 17 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}-\frac{2\sqrt{1+\text{Tan}[e+f x]}}{f}-$$

$$\frac{2\left(1+\text{Tan}[e+f x]\right)^{3/2}}{3 f}-\frac{4\left(1+\text{Tan}[e+f x]\right)^{5/2}}{35 f}+\frac{2\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{5/2}}{7 f}$$

Result (type 3, 160 leaves) :

$$\Bigg(\text{Cos}[e+f x]\Bigg(\left(1+i\right)\left(-i\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]+\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]\right)$$
$$\text{Cos}[e+f x]\left(1+\text{Tan}[e+f x]\right)^2+\frac{1}{105}\text{Sec}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{5/2}$$
$$\left(48-340\,\text{Cos}[e+f x]^2-47\,\text{Sin}[2\left(e+f x\right)]+30\,\text{Tan}[e+f x]\right)\Bigg)\Bigg)\Big/$$
$$\left(f\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)^2\right)$$

Problem 391: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]\right)^{3/2} dx$$

Optimal (type 3, 271 leaves, 14 steps) :

$$\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f\,x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f\,x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f\,x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f\,x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}+$$

$$\frac{2\sqrt{1+\text{Tan}[e+f\,x]}}{f}+\frac{2\left(1+\text{Tan}[e+f\,x]\right)^{3/2}}{3\,f}$$

Result (type 3, 145 leaves):

$$\Bigg(\text{Cos}[e+f\,x]\Bigg(\left(-1+i\right)\left(\sqrt{1-i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{1-i}}\right]+i\sqrt{1+i}\ \text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{1+i}}\right]\right)$$
$$\text{Cos}[e+f\,x]\left(1+\text{Tan}[e+f\,x]\right)^2+\frac{2}{3}\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)$$
$$\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\left(4+\text{Tan}[e+f\,x]\right)\Bigg)\Bigg)\Big/\left(f\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)^2\right)$$

Problem 392: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Cot}[e+f\,x]\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\,dx$$

Optimal (type 3, 253 leaves, 16 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-$$

$$\frac{2\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{f}-\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}$$

Result (type 3, 78 leaves):

$$\frac{1}{f}\left(-2\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]+\right.$$

$$\left.(1-\text{i})^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-\text{i}}}\right]+(1+\text{i})^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+\text{i}}}\right]\right)$$

Problem 393: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f x]^3\,(1+\text{Tan}[e+f x])^{3/2}\,dx$$

Optimal (type 3, 307 leaves, 18 steps):

$$\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f}+$$

$$\frac{5\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{4 f}+\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f}-$$

$$\frac{5\,\text{Cot}[e+f x]\ \sqrt{1+\text{Tan}[e+f x]}}{4 f}-\frac{\text{Cot}[e+f x]^2\ \sqrt{1+\text{Tan}[e+f x]}}{2 f}$$

Result (type 4, 4055 leaves):

$$\frac{\text{Cos}[e+f x]\left(\frac{1}{2}-\frac{5}{4}\text{Cot}[e+f x]-\frac{1}{2}\text{Csc}[e+f x]^2\right)(1+\text{Tan}[e+f x])^{3/2}}{f(\text{Cos}[e+f x]+\text{Sin}[e+f x])}+$$

$$\Bigg(\text{Cos}[e+f x]\Bigg(-5\,\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Bigg],-3-2\sqrt{2}\Bigg]+$$

$$5\,\text{EllipticPi}\Bigg[-1-\sqrt{2},\text{ArcSin}\Bigg[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Bigg],-3-2\sqrt{2}\Bigg]+$$

$$16\,i\,\text{EllipticPi}\Bigg[-i\left(1+\sqrt{2}\right),\text{ArcSin}\Bigg[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Bigg],-3-2\sqrt{2}\Bigg]-$$

$$16\,i\,\text{EllipticPi}\Bigg[i\left(1+\sqrt{2}\right),\text{ArcSin}\Bigg[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Bigg],-3-2\sqrt{2}\Bigg]+$$

$$5\,\text{EllipticPi}\Bigg[1+\sqrt{2},\text{ArcSin}\Bigg[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\Bigg],-3-2\sqrt{2}\Bigg]\Bigg)$$

$$\left(-\frac{5\,\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{8\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}-\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}\,\text{Sin}[2(e+f x)]}{\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}\right)$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\,(1+\text{Tan}[e+f x])^{3/2}\Bigg)\Bigg/$$

$$\left(2\times 2^{1/4}\, f\,\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(\frac{1}{4\times 2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(-5\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$16\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.5\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(-5\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$16\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.5\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{4\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(-5\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$16\,\mathrm{i}\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$16\,\mathrm{i}\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.5\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\,(\text{Cos}[e+f x]+\text{Sin}[e+f x])}{(-1+\text{Sin}[e+f x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\left(-5\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$16\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$16\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.5\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\right.$$

$$\left.\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)+\frac{1}{2\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(-\left(\left(5\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\right/\right.\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\left.\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)\right)\right)+$$

$$\left(5\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)+$$

$$\left(5\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(8\,i\,2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)+$$

$$\left(8\, i\, 2^{1/4} \left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)} - \frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right) \Big/$$

$$\left(\sqrt{2+\sqrt{2}}\, \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\, \sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left.\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\right)\right)$$

Problem 394: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f x]^5 \left(1+\text{Tan}[e+f x]\right)^{3/2} dx$$

Optimal (type 3, 361 leaves, 20 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f} + \frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{f} -$$

$$\frac{83\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{64 f} - \frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f} +$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{2\sqrt{1+\sqrt{2}}\ f} +$$

$$\frac{83\,\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]}}{64 f} + \frac{15\,\text{Cot}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}}{32 f} -$$

$$\frac{3\,\text{Cot}[e+f x]^3\sqrt{1+\text{Tan}[e+f x]}}{8 f} - \frac{\text{Cot}[e+f x]^4\sqrt{1+\text{Tan}[e+f x]}}{4 f}$$

Result (type 4, 4084 leaves):

$$\left(\text{Cos}[e+f x]\left(-\frac{23}{32}+\frac{107}{64}\text{Cot}[e+f x]+\frac{31}{32}\text{Csc}[e+f x]^2-\frac{3}{8}\text{Cot}[e+f x]\,\text{Csc}[e+f x]^2-\frac{1}{4}\text{Csc}[e+f x]^4\right)(1+\text{Tan}[e+f x])^{3/2}\right)\Big/\left(f\,(\text{Cos}[e+f x]+\text{Sin}[e+f x])\right)+$$

$$\left(\text{Cos}[e+f x]\left(83\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.\right.$$

$$83\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$256\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$256\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.83\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\left(\frac{83\,\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{128\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}+\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}\;\text{Sin}[2\,(e+f x)]}{\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\,(1+\text{Tan}[e+f x])^{3/2}\right)\Big/$$

$$\left(32\times 2^{1/4}\, f\,\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(\frac{1}{64\times 2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(83\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$83\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$256\,\mathrm{i}\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$256\,\mathrm{i}\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.83\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(83\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$83\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$256\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$256\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.83\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{64\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(83\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$83\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$256\,\mathrm{i}\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$256\,\mathrm{i}\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$\left.83\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\left(\frac{\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f\,x]\,(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x])}{(-1+\text{Sin}[e+f\,x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\;+$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}}$$

$$\left(83\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.$$

$$83\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$256\,\mathrm{i}\,\mathrm{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$256\,\mathrm{i}\,\mathrm{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.83\,\mathrm{EllipticPi}\left[1+\sqrt{2},\mathrm{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\mathrm{Sec}[e+f\,x]}$$

$$\sqrt{\mathrm{Cos}[e+f\,x]+\mathrm{Sin}[e+f\,x]}\left(-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}+\right.$$

$$\left.\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}\right)+\frac{1}{32\times2^{1/4}\sqrt{\frac{\mathrm{Cos}[e+f\,x]+\mathrm{Sin}[e+f\,x]}{-1+\mathrm{Sin}[e+f\,x]}}}$$

$$\sqrt{\mathrm{Sec}[e+f\,x]}\sqrt{\mathrm{Cos}[e+f\,x]+\mathrm{Sin}[e+f\,x]}\sqrt{-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}$$

$$\left(\left(83\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}\right)\right)\right/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\right)-$$

$$\left(83\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(83\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left(128\,i\,2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(128\,i\,2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\Bigg)\Bigg)$$

Problem 395: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Tan}[e+f x]^4\left(1+\mathrm{Tan}[e+f x]\right)^{3/2}\,dx$$

Optimal (type 3, 227 leaves, 10 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\,\mathrm{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}-$$

$$\frac{\sqrt{1+\sqrt{2}}\,\mathrm{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}+\frac{2\sqrt{1+\mathrm{Tan}[e+f x]}}{f}-\frac{22\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}}{63 f}-$$

$$\frac{8\,\mathrm{Tan}[e+f x]\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}}{63 f}+\frac{2\,\mathrm{Tan}[e+f x]^2\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}}{9 f}$$

Result (type 3, 155 leaves):

$$\left(2\,\mathrm{Cos}[e+f x]^2\left(-63\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}\right)\left(1+\mathrm{Tan}[e+f x]\right)^2+\right.\right.$$

$$\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}\left(71+7\,\mathrm{Sec}[e+f x]^4-36\,\mathrm{Tan}[e+f x]+\right.$$

$$\left.\left.\left.2\,\mathrm{Sec}[e+f x]^2\left(-13+5\,\mathrm{Tan}[e+f x]\right)\right)\right)\right)\Bigg/\left(63 f\left(\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]\right)^2\right)$$

Problem 396: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Tan}[e+f x]^2 \left(1+\mathrm{Tan}[e+f x]\right)^{3/2} \, dx$$

Optimal (type 3, 173 leaves, 8 steps):

$$\frac{\sqrt{-1+\sqrt{2}}\ \mathrm{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}+\frac{\sqrt{1+\sqrt{2}}\ \mathrm{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}-\frac{2\sqrt{1+\mathrm{Tan}[e+f x]}}{f}+\frac{2\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}}{5 f}$$

Result (type 3, 133 leaves):

$$\left(2\,\mathrm{Cos}[e+f x]^2\left(5\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}\right)\left(1+\mathrm{Tan}[e+f x]\right)^2+\left(1+\mathrm{Tan}[e+f x]\right)^{5/2}\left(-5+\mathrm{Sec}[e+f x]^2+2\,\mathrm{Tan}[e+f x]\right)\right)\right)\Big/\left(5 f\left(\mathrm{Cos}[e+f x]+\mathrm{Sin}[e+f x]\right)^2\right)$$

Problem 397: Result unnecessarily involves imaginary or complex numbers.

$$\int \left(1+\mathrm{Tan}[e+f x]\right)^{3/2} \, dx$$

Optimal (type 3, 156 leaves, 7 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\ \mathrm{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}-\frac{\sqrt{1+\sqrt{2}}\ \mathrm{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\ \sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{f}+\frac{2\sqrt{1+\mathrm{Tan}[e+f x]}}{f}$$

Result (type 3, 130 leaves):

$$\left(2\,\text{Cos}[e+f\,x]\left(\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)\,\left(1+\text{Tan}[e+f\,x]\right)^{3/2}-\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{1-\text{i}}}\right]}{\sqrt{1-\text{i}}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f\,x]}}{\sqrt{1+\text{i}}}\right]}{\sqrt{1+\text{i}}}\right)\text{Cos}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]\right)^2\right)\right)\Big/\left(f\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)^2\right)$$

Problem 398: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\,dx$$

Optimal (type 3, 178 leaves, 11 steps):

$$\frac{\sqrt{-1+\sqrt{2}}\,\text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\text{Tan}[e+f\,x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\,\sqrt{1+\text{Tan}[e+f\,x]}}\right]}{f}-\frac{3\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f\,x]}\right]}{f}+\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\text{Tan}[e+f\,x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\,\sqrt{1+\text{Tan}[e+f\,x]}}\right]}{f}-\frac{\text{Cot}[e+f\,x]\,\sqrt{1+\text{Tan}[e+f\,x]}}{f}$$

Result (type 4, 3987 leaves):

$$-\frac{\text{Cos}[e+f\,x]\,\text{Cot}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]\right)^{3/2}}{f\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)}-$$

$$\left(2^{3/4}\,\text{Cos}[e+f\,x]\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[-\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\left(\frac{\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{2\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}+\frac{\text{Cos}\left[2\left(e+f x\right)\right]\text{Csc}[e+f x]\sqrt{\text{Sec}[e+f x]}}{\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\left(1+\text{Tan}[e+f x]\right)^{3/2}\right)\Bigg/$$

$$\left(f\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(-\frac{1}{2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}-$$

$$\frac{1}{2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$3\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\left(\frac{\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f\,x]\,(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x])}{(-1+\text{Sin}[e+f\,x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\;-$$

$$\frac{1}{2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}}$$

$$\Bigg(\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$4\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$3\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)-$$

$$\frac{1}{\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\,2^{3/4}\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\Bigg/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)+$$

$$\left(3\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)\right)+$$

$$\left(3\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(2\times 2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(2\times 2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\sqrt{2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left.\left.\left.\left(1+\frac{i\,\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)\right)\right)\right)$$

Problem 399: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[e+f\,x]^4\,\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\,dx$$

Optimal (type 3, 238 leaves, 13 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\;\text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\,\text{Tan}[e+f\,x]}{\sqrt{2\,\left(-7+5\sqrt{2}\right)}\;\sqrt{1+\text{Tan}[e+f\,x]}}\right]}{f}+\frac{25\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f\,x]}\right]}{8\,f}-$$

$$\frac{\sqrt{1+\sqrt{2}}\;\text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\,\text{Tan}[e+f\,x]}{\sqrt{2\,\left(7+5\sqrt{2}\right)}\;\sqrt{1+\text{Tan}[e+f\,x]}}\right]}{f}+\frac{7\,\text{Cot}[e+f\,x]\,\sqrt{1+\text{Tan}[e+f\,x]}}{8\,f}-$$

$$\frac{7\,\text{Cot}[e+f\,x]^2\,\sqrt{1+\text{Tan}[e+f\,x]}}{12\,f}-\frac{\text{Cot}[e+f\,x]^3\,\sqrt{1+\text{Tan}[e+f\,x]}}{3\,f}$$

Result (type 4, 4049 leaves):

$$\left(\text{Cos}[e+f\,x]\,\left(\frac{7}{12}+\frac{29}{24}\,\text{Cot}[e+f\,x]-\frac{7}{12}\,\text{Csc}[e+f\,x]^2-\frac{1}{3}\,\text{Cot}[e+f\,x]\,\text{Csc}[e+f\,x]^2\right)\right.$$

$$\left.\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\right)\Big/\left(f\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)\right)+$$

$$\left(\text{Cos}[e+f\,x]\,\left(7\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.\right.$$

$$25\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.25\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\left(-\frac{9\,\text{Csc}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]}}{16\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}-\frac{\text{Cos}\left[2\,(e+f\,x)\right]\text{Csc}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]}}{\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\,\left(1+\text{Tan}[e+f\,x]\right)^{3/2}\right)\Bigg/$$

$$\left(4\times 2^{1/4}\,f\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\right.$$

$$\left(\frac{1}{8\times 2^{1/4}\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\right.$$

$$\left(7\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$25\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.25\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$(\text{Cos}[e+f x]-\text{Sin}[e+f x])\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(7\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$25\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[-\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.25\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)\text{Sec}[e+f\,x]^{3/2}$$

$$\text{Sin}[e+f\,x]\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)}}-$$

$$\frac{1}{8\times 2^{1/4}\left(\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}\right)^{3/2}}\left(7\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$25\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[-\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$25\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\,(\text{Cos}[e+f x]+\text{Sin}[e+f x])}{(-1+\text{Sin}[e+f x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\Bigg(7\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$25\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$32\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$25\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)\sqrt{\text{Sec}[e+f x]}$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\right.$$

$$\left.\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)+\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(7\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\right/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)+$$

$$\left(25\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left(25\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(16\times 2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}\right)\right)-$$

$$\left(16\times 2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}$$

$$\left.\left.\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}\right)\right)\right)\right)$$

Problem 400: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\mathrm{Tan}[e+f x]^5}{\sqrt{1+\mathrm{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 241 leaves, 10 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\ \mathrm{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{2 f}-\frac{\sqrt{1+\sqrt{2}}\ \mathrm{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{2 f}+\frac{44\sqrt{1+\mathrm{Tan}[e+f x]}}{105 f}-\frac{22\,\mathrm{Tan}[e+f x]\sqrt{1+\mathrm{Tan}[e+f x]}}{105 f}-\frac{12\,\mathrm{Tan}[e+f x]^2\sqrt{1+\mathrm{Tan}[e+f x]}}{35 f}+\frac{2\,\mathrm{Tan}[e+f x]^3\sqrt{1+\mathrm{Tan}[e+f x]}}{7 f}$$

Result (type 3, 110 leaves):

$$-\frac{1}{f}\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{1+\mathrm{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}-\frac{2}{105}\sqrt{1+\mathrm{Tan}[e+f x]}\left(40-26\,\mathrm{Tan}[e+f x]+3\,\mathrm{Sec}[e+f x]^2\left(-6+5\,\mathrm{Tan}[e+f x]\right)\right)\right)$$

Problem 401: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\mathrm{Tan}[e+f x]^3}{\sqrt{1+\mathrm{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 187 leaves, 8 steps):

$$\frac{\sqrt{-1+\sqrt{2}}\ \mathrm{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{2 f}+\frac{\sqrt{1+\sqrt{2}}\ \mathrm{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\mathrm{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\sqrt{1+\mathrm{Tan}[e+f x]}}\right]}{2 f}-\frac{4\sqrt{1+\mathrm{Tan}[e+f x]}}{3 f}+\frac{2\,\mathrm{Tan}[e+f x]\sqrt{1+\mathrm{Tan}[e+f x]}}{3 f}$$

Result (type 3, 87 leaves):

$$\frac{1}{f}\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}+\frac{2}{3}\left(-2+\text{Tan}[e+f x]\right)\sqrt{1+\text{Tan}[e+f x]}\right)$$

Problem 402: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 143 leaves, 5 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\ \text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}$$

Result (type 3, 64 leaves):

$$-\frac{\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}}{f}$$

Problem 403: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 161 leaves, 9 steps):

$$\frac{\sqrt{-1+\sqrt{2}}\ \text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}-\frac{2\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{f}+\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}$$

Result (type 3, 83 leaves):

$$\frac{1}{2 f}\left(-4\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}\right)$$

Problem 404: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[e+f x]^3}{\sqrt{1+\text{Tan}[e+f x]}}\, dx$$

Optimal (type 3, 215 leaves, 12 steps):

$$-\frac{\sqrt{-1+\sqrt{2}}\ \text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}+\frac{5\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{4 f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}+\frac{3\,\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]}}{4 f}-\frac{\text{Cot}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}}{2 f}$$

Result (type 4, 4029 leaves):

$$\left(\left(\frac{1}{2}+\frac{3}{4}\text{Cot}[e+f x]-\frac{1}{2}\text{Csc}[e+f x]^2\right)\text{Sec}[e+f x]\ \left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\right)\Big/$$

$$\left(f\sqrt{1+\text{Tan}[e+f x]}\right)+\left(\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$5\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\text{Sec}[e+f\,x]\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)$$

$$\left(-\frac{\text{Csc}[e+f\,x]\,\sqrt{\text{Sec}[e+f\,x]}}{8\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}-\frac{\text{Cos}\left[2\,(e+f\,x)\right]\,\text{Csc}[e+f\,x]\,\sqrt{\text{Sec}[e+f\,x]}}{2\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}\right)$$

$$\left.\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\right)\Bigg/$$

$$\left(2\times 2^{1/4}\,f\,\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\right.$$

$$\left(\frac{1}{4\times 2^{1/4}\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\right.$$

$$\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$\left.5\,\text{EllipticPi}\left[1+\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f\,x]}$$

$$\left(\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)}}+$$

$$\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+\right.$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\ \text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\ -3-2\sqrt{2}\right]+$$

$$5\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\Bigg)\ \text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\ -$$

$$\frac{1}{4\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\Bigg(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$5\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$8\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$5\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Sec}[e+f x]}\ \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\ \left(\frac{\text{Cos}[e+f x]-\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\ -\right.$$

$$\left.\frac{\text{Cos}[e+f x] \left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)}{\left(-1+\text{Sin}[e+f x]\right)^2}\right) \sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\left(-2+\sqrt{2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)}}+$$

$$\frac{1}{4\times 2^{1/4} \sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}} \sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\left(-2+\sqrt{2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)}}}$$

$$\left(3 \text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right], -3-2 \sqrt{2}\right]+\right.$$

$$5 \text{EllipticPi}\left[-1-\sqrt{2}, \text{ArcSin}\left[\frac{2^{1/4} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right], -3-2 \sqrt{2}\right]-$$

$$8 \text{EllipticPi}\left[-i \left(1+\sqrt{2}\right), \text{ArcSin}\left[\frac{2^{1/4} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right], -3-2 \sqrt{2}\right]-$$

$$8 \text{EllipticPi}\left[i \left(1+\sqrt{2}\right), \text{ArcSin}\left[\frac{2^{1/4} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right], -3-2 \sqrt{2}\right]+$$

$$\left.5 \text{EllipticPi}\left[1+\sqrt{2}, \text{ArcSin}\left[\frac{2^{1/4} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right], -3-2 \sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]} \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2}{2 \left(-2+\sqrt{2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)}{2 \left(-2+\sqrt{2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)^2}\right)+$$

$$\frac{1}{2\times 2^{1/4} \sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}} \sqrt{\text{Sec}[e+f x]} \sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(3\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)+$$

$$\left(5\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left(5\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\Bigg)-$$

$$\left(4\times 2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(4\times 2^{1/4}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left.\left(1+\frac{i\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\right)\Bigg)\Bigg/\sqrt{1+\text{Tan}[e+f x]}\Bigg)$$

Problem 405: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[e+f x]^5}{\sqrt{1+\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 269 leaves, 14 steps):

$$\frac{\sqrt{-1+\sqrt{2}}\,\text{ArcTan}\left[\frac{3-2\sqrt{2}+\left(1-\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(-7+5\sqrt{2}\right)}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}-$$

$$\frac{115\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{64 f}+\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTanh}\left[\frac{3+2\sqrt{2}+\left(1+\sqrt{2}\right)\text{Tan}[e+f x]}{\sqrt{2\left(7+5\sqrt{2}\right)}\,\sqrt{1+\text{Tan}[e+f x]}}\right]}{2 f}-$$

$$\frac{13\,\text{Cot}[e+f x]\,\sqrt{1+\text{Tan}[e+f x]}}{64 f}+\frac{13\,\text{Cot}[e+f x]^2\,\sqrt{1+\text{Tan}[e+f x]}}{96 f}+$$

$$\frac{7\,\text{Cot}[e+f x]^3\,\sqrt{1+\text{Tan}[e+f x]}}{24 f}-\frac{\text{Cot}[e+f x]^4\,\sqrt{1+\text{Tan}[e+f x]}}{4 f}$$

Result (type 4, 4059 leaves):

$$\left(\left(-\frac{37}{96}-\frac{95}{192}\text{Cot}[e+f x]+\frac{61}{96}\text{Csc}[e+f x]^2+\frac{7}{24}\text{Cot}[e+f x]\,\text{Csc}[e+f x]^2-\frac{1}{4}\text{Csc}[e+f x]^4\right)\right.$$
$$\left.\text{Sec}[e+f x]\,\left(\text{Cos}[e+f x]+\text{Sin}[e+f x]\right)\right)\Big/\left(f\sqrt{1+\text{Tan}[e+f x]}\right)-$$

$$\left(\left(13\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.\right.$$

$$115\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$115\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\text{Sec}[e+f\,x]\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)$$

$$\left(\frac{51\,\text{Csc}[e+f\,x]\,\sqrt{\text{Sec}[e+f\,x]}}{128\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}+\frac{\text{Cos}\left[2\,(e+f\,x)\right]\,\text{Csc}[e+f\,x]\,\sqrt{\text{Sec}[e+f\,x]}}{2\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}}\right)$$

$$\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\Bigg)\Bigg/$$

$$\left(32\times 2^{1/4}\,f\,\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\right.$$

$$\left(-\frac{1}{64\times 2^{1/4}\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}}\right.$$

$$\left(13\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$115\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$\left.115\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\,-$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(13\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+\right.$$

$$115\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$115\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)\,\text{Sec}[e+f\,x]^{3/2}$$

$$\text{Sin}[e+f\,x]\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}\,+$$

$$\frac{1}{64\times 2^{1/4}\left(\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}\right)^{3/2}}\Bigg(13\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$115\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[-\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[\mathbb{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$115\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\Bigg)$$

$$\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\left(\frac{\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}\,-\right.$$

$$\left.\frac{\text{Cos}[e+f x]\,(\text{Cos}[e+f x]+\text{Sin}[e+f x])}{(-1+\text{Sin}[e+f x])^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{64\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}}$$

$$\left(13\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+\right.$$

$$115\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$128\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$\left.115\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)-$$

$$\frac{1}{32\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}$$

$$\sqrt{-\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}$$

$$\left(\left(13\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\right)\Big/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right)+$$

$$\left(115\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}\right)\right)+$$

$$\left(115\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}}$$

$$\left.\left.\left(1-\frac{\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)\right)-$$

$$\left(64\times 2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left(1-\frac{i\,\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)-$$

$$\left(64\times 2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}}\,\sqrt{1-\frac{\sqrt{2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\,\left(-3-2\,\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}}$$

$$\left.\left.\left.\left.\left(1+\frac{i\,\sqrt{2}\,\left(1+\sqrt{2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{\left(2+\sqrt{2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}\right)\right)\right)\right)\Bigg/\sqrt{1+\mathrm{Tan}[e+f\,x]}\,\Bigg)$$

Problem 406: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\mathrm{Tan}[e+f\,x]^4}{\sqrt{1+\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 311 leaves, 14 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}+\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\,f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\,f}-\frac{14\sqrt{1+\text{Tan}[e+f x]}}{15 f}-$$

$$\frac{8\,\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]}}{15 f}+\frac{2\,\text{Tan}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]}}{5 f}$$

Result (type 3, 100 leaves):

$$\frac{(1-i)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{2 f}+$$

$$\frac{(1+i)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{2 f}+\frac{2\,(1+\text{Tan}[e+f x])^{3/2}\,(-7+3\,\text{Tan}[e+f x])}{15 f}$$

Problem 407: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[e+f x]^2}{\sqrt{1+\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 257 leaves, 12 steps):

$$\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}-\frac{\sqrt{1+\sqrt{2}}\,\text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\,f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\,f}+\frac{2\sqrt{1+\text{Tan}[e+f x]}}{f}$$

Result (type 3, 80 leaves):

$$-\frac{1}{2 f}\left((1-i)^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{1-i}}\right]+\right.$$
$$\left.(1+i)^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{1+i}}\right]-4 \sqrt{1+\operatorname{Tan}[e+f x]}\right)$$

Problem 408: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\sqrt{1+\operatorname{Tan}[e+f x]}} \, dx$$

Optimal (type 3, 240 leaves, 11 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\ \operatorname{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2 \sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}+\frac{\sqrt{1+\sqrt{2}}\ \operatorname{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2 \sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}-$$
$$\frac{\operatorname{Log}\left[1+\sqrt{2}+\operatorname{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)} \sqrt{1+\operatorname{Tan}[e+f x]}\right]}{4 \sqrt{1+\sqrt{2}}\ f}+$$
$$\frac{\operatorname{Log}\left[1+\sqrt{2}+\operatorname{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)} \sqrt{1+\operatorname{Tan}[e+f x]}\right]}{4 \sqrt{1+\sqrt{2}}\ f}$$

Result (type 3, 67 leaves):

$$-\frac{i\left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{1-i}}\right]}{\sqrt{1-i}}-\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{1+\operatorname{Tan}[e+f x]}}{\sqrt{1+i}}\right]}{\sqrt{1+i}}\right)}{f}$$

Problem 409: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Cot}[e+f x]^2}{\sqrt{1+\operatorname{Tan}[e+f x]}} \, dx$$

Optimal (type 3, 280 leaves, 19 steps):

$$\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}+$$

$$\frac{\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{f}+\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\ f}-$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\ f}-\frac{\text{Cot}[e+f x]\ \sqrt{1+\text{Tan}[e+f x]}}{f}$$

Result (type 3, 101 leaves):

$$-\frac{1}{2 f}\left(-2\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]+(1-i)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1-i}}\right]+\right.$$

$$\left.(1+i)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{1+i}}\right]+2\,\text{Cot}[e+f x]\ \sqrt{1+\text{Tan}[e+f x]}\right)$$

Problem 410: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[e+f x]^4}{\sqrt{1+\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 339 leaves, 19 steps):

$$-\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}-2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}+\frac{\sqrt{1+\sqrt{2}}\ \text{ArcTan}\left[\frac{\sqrt{2\left(1+\sqrt{2}\right)}+2\sqrt{1+\text{Tan}[e+f x]}}{\sqrt{2\left(-1+\sqrt{2}\right)}}\right]}{2 f}-$$

$$\frac{3\,\text{ArcTanh}\left[\sqrt{1+\text{Tan}[e+f x]}\right]}{8 f}-\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]-\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\ f}+$$

$$\frac{\text{Log}\left[1+\sqrt{2}+\text{Tan}[e+f x]+\sqrt{2\left(1+\sqrt{2}\right)}\ \sqrt{1+\text{Tan}[e+f x]}\right]}{4\sqrt{1+\sqrt{2}}\ f}+\frac{3\,\text{Cot}[e+f x]\ \sqrt{1+\text{Tan}[e+f x]}}{8 f}+$$

$$\frac{5\,\text{Cot}[e+f x]^2\ \sqrt{1+\text{Tan}[e+f x]}}{12 f}-\frac{\text{Cot}[e+f x]^3\ \sqrt{1+\text{Tan}[e+f x]}}{3 f}$$

Result (type 4, 4071 leaves):

$$\left(\left(-\frac{5}{12}+\frac{17}{24}\operatorname{Cot}[e+fx]+\frac{5}{12}\operatorname{Csc}[e+fx]^2-\frac{1}{3}\operatorname{Cot}[e+fx]\operatorname{Csc}[e+fx]^2\right)\right.$$
$$\left.\operatorname{Sec}[e+fx]\left(\operatorname{Cos}[e+fx]+\operatorname{Sin}[e+fx]\right)\right)\Big/\left(f\sqrt{1+\operatorname{Tan}[e+fx]}\right)+$$

$$\left(\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$16\,\mathrm{i}\,\text{EllipticPi}\left[-\mathrm{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,\mathrm{i}\,\text{EllipticPi}\left[\mathrm{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)$$

$$\operatorname{Sec}[e+fx]\left(\operatorname{Cos}[e+fx]+\operatorname{Sin}[e+fx]\right)$$
$$\left(\frac{3\operatorname{Csc}[e+fx]\sqrt{\operatorname{Sec}[e+fx]}}{16\sqrt{\operatorname{Cos}[e+fx]+\operatorname{Sin}[e+fx]}}+\frac{\operatorname{Csc}[e+fx]\sqrt{\operatorname{Sec}[e+fx]}\operatorname{Sin}[2(e+fx)]}{2\sqrt{\operatorname{Cos}[e+fx]+\operatorname{Sin}[e+fx]}}\right)$$

$$\left.\sqrt{-\frac{1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]\right)}}\right)\Big/$$

$$\left(4\times 2^{1/4}\, f\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}\right.$$

$$\left(\frac{1}{8\times 2^{1/4}\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\right.$$

$$\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$16\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\sqrt{\text{Sec}[e+f x]}$$

$$\left(\text{Cos}[e+f x]-\text{Sin}[e+f x]\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$16\,\text{i}\,\text{EllipticPi}\left[-\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,\text{i}\,\text{EllipticPi}\left[\text{i}\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\right)\text{Sec}[e+f x]^{3/2}$$

$$\text{Sin}[e+f x]\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}-$$

$$\frac{1}{8\times 2^{1/4}\left(\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}\right)^{3/2}}\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$16\,\text{i}\,\text{EllipticPi}\left[-\text{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]+$$

$$16\,\text{i}\,\text{EllipticPi}\left[\text{i}\left(1+\sqrt{2}\right),\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$\left.3\,\text{EllipticPi}\left[1+\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]\right)$$

$$\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}\,\left(\frac{\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}-\right.$$

$$\left.\frac{\text{Cos}[e+f\,x]\,\left(\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]\right)}{\left(-1+\text{Sin}[e+f\,x]\right)^2}\right)\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}+$$

$$\frac{1}{8\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]}{-1+\text{Sin}[e+f\,x]}}\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)}}}$$

$$\left(3\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-\right.$$

$$3\,\text{EllipticPi}\left[-1-\sqrt{2},\,\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],\,-3-2\sqrt{2}\right]-$$

$$16\,i\,\text{EllipticPi}\left[-i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]+$$

$$16\,i\,\text{EllipticPi}\left[i\left(1+\sqrt{2}\right),\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]-$$

$$3\,\text{EllipticPi}\left[1+\sqrt{2},\text{ArcSin}\left[\frac{2^{1/4}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}}{\sqrt{2+\sqrt{2}}}\right],-3-2\sqrt{2}\right]\Bigg)\sqrt{\text{Sec}[e+f x]}$$

$$\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\left(-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}+\right.$$

$$\left.\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)+\frac{1}{4\times 2^{1/4}\sqrt{\frac{\text{Cos}[e+f x]+\text{Sin}[e+f x]}{-1+\text{Sin}[e+f x]}}}$$

$$\sqrt{\text{Sec}[e+f x]}\,\sqrt{\text{Cos}[e+f x]+\text{Sin}[e+f x]}\,\sqrt{-\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\left(-2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left(\left(3\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/\right.$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\left.\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right)-$$

$$\left(3\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(-1-\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(3\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(2^{3/4}\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)+$$

$$\left(8\,\mathrm{i}\,2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1-\frac{\mathrm{i}\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)-$$

$$\left(8\,\mathrm{i}\,2^{1/4}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{2+\sqrt{2}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}}\sqrt{1-\frac{\sqrt{2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\sqrt{2}\left(-3-2\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}}$$

$$\left.\left(1+\frac{\mathrm{i}\sqrt{2}\left(1+\sqrt{2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}{\left(2+\sqrt{2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}\right)\right)\right)\right)\sqrt{1+\mathrm{Tan}[e+f x]}\right)$$

Problem 411: Unable to integrate problem.

$$\int(d\,\mathrm{Tan}[e+f x])^n\,(a+a\,\mathrm{Tan}[e+f x])^m\,dx$$

Optimal (type 6, 161 leaves, 7 steps):

$$\frac{1}{2 d f (1+n)}\mathrm{AppellF1}\left[1+n,\,-m,\,1,\,2+n,\,-\mathrm{Tan}[e+f x],\,-\mathrm{i}\,\mathrm{Tan}[e+f x]\right](d\,\mathrm{Tan}[e+f x])^{1+n}(1+\mathrm{Tan}[e+f x])^{-m}(a+a\,\mathrm{Tan}[e+f x])^m+\frac{1}{2 d f (1+n)}\mathrm{AppellF1}\left[1+n,\,-m,\,1,\,2+n,\,-\mathrm{Tan}[e+f x],\,\mathrm{i}\,\mathrm{Tan}[e+f x]\right](d\,\mathrm{Tan}[e+f x])^{1+n}(1+\mathrm{Tan}[e+f x])^{-m}(a+a\,\mathrm{Tan}[e+f x])^m$$

Result (type 8, 25 leaves):

$$\int(d\,\mathrm{Tan}[e+f x])^n\,(a+a\,\mathrm{Tan}[e+f x])^m\,dx$$

Problem 427: Result more than twice size of optimal antiderivative.

$$\int\mathrm{Tan}[c+d x]\,(a+b\,\mathrm{Tan}[c+d x])^2\,dx$$

Optimal (type 3, 58 leaves, 3 steps):

$$-2 a b x-\frac{\left(a^2-b^2\right)\mathrm{Log}[\mathrm{Cos}[c+d x]]}{d}+\frac{a b\,\mathrm{Tan}[c+d x]}{d}+\frac{(a+b\,\mathrm{Tan}[c+d x])^2}{2 d}$$

Result (type 3, 125 leaves):

$$\left(\left(b^2-2\,a\,b\,c-2\,a\,b\,d\,x-a^2\,\text{Log}[\text{Cos}[c+d\,x]]+b^2\,\text{Log}[\text{Cos}[c+d\,x]]-\text{Cos}[2\,(c+d\,x)]\,\left(2\,a\,b\,(c+d\,x)+\left(a^2-b^2\right)\text{Log}[\text{Cos}[c+d\,x]]\right)+2\,a\,b\,\text{Sin}[2\,(c+d\,x)]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)\Big/\left(2\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)$$

Problem 431: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,dx$$

Optimal (type 3, 58 leaves, 4 steps):

$$-2\,a\,b\,x-\frac{2\,a\,b\,\text{Cot}[c+d\,x]}{d}-\frac{a^2\,\text{Cot}[c+d\,x]^2}{2\,d}-\frac{\left(a^2-b^2\right)\text{Log}[\text{Sin}[c+d\,x]]}{d}$$

Result (type 3, 125 leaves):

$$-\left(\left(\left(b+a\,\text{Cot}[c+d\,x]\right)^2\left(a^2+2\,a\,b\,c+2\,a\,b\,d\,x+a^2\,\text{Log}[\text{Sin}[c+d\,x]]-b^2\,\text{Log}[\text{Sin}[c+d\,x]]-\text{Cos}[2\,(c+d\,x)]\,\left(2\,a\,b\,(c+d\,x)+\left(a^2-b^2\right)\text{Log}[\text{Sin}[c+d\,x]]\right)+2\,a\,b\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(2\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\right)$$

Problem 444: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^6\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3\,dx$$

Optimal (type 3, 157 leaves, 7 steps):

$$-a\,\left(a^2-3\,b^2\right)x-\frac{a\,\left(a^2-3\,b^2\right)\text{Cot}[c+d\,x]}{d}+\frac{b\,\left(3\,a^2-b^2\right)\text{Cot}[c+d\,x]^2}{2\,d}+\frac{a\,\left(a^2-3\,b^2\right)\text{Cot}[c+d\,x]^3}{3\,d}-\frac{11\,a^2\,b\,\text{Cot}[c+d\,x]^4}{20\,d}+\frac{b\,\left(3\,a^2-b^2\right)\text{Log}[\text{Sin}[c+d\,x]]}{d}-\frac{a^2\,\text{Cot}[c+d\,x]^5\,\left(a+b\,\text{Tan}[c+d\,x]\right)}{5\,d}$$

Result (type 3, 409 leaves):

$$\frac{\left(11\,a^3\,\text{Cos}[c+d\,x]-15\,a\,b^2\,\text{Cos}[c+d\,x]\right)\left(b+a\,\text{Cot}[c+d\,x]\right)^3}{15\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}-\frac{3\,a^2\,b\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Csc}[c+d\,x]}{4\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}-\frac{a^3\,\text{Cot}[c+d\,x]\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Csc}[c+d\,x]}{5\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}-\frac{b\,\left(-6\,a^2+b^2\right)\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Sin}[c+d\,x]}{2\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}+\left(\left(-23\,a^3\,\text{Cos}[c+d\,x]+60\,a\,b^2\,\text{Cos}[c+d\,x]\right)\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Sin}[c+d\,x]^2\right)\Big/\left(15\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right)-\frac{a\,\left(a^2-3\,b^2\right)(c+d\,x)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Sin}[c+d\,x]^3}{d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}+\frac{\left(3\,a^2\,b-b^3\right)\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\text{Log}[\text{Sin}[c+d\,x]]\,\text{Sin}[c+d\,x]^3}{d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}$$

Problem 446: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^4\,dx$$

Optimal (type 3, 128 leaves, 5 steps):

$$-\left(a^4-6\,a^2\,b^2+b^4\right)x+\frac{4\,a\,b\,\left(a^2-b^2\right)\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}-\frac{b^2\,\left(3\,a^2-b^2\right)\mathrm{Tan}[c+d\,x]}{d}-\frac{a\,b\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{d}-\frac{b\,(a+b\,\mathrm{Tan}[c+d\,x])^3}{3\,d}+\frac{(a+b\,\mathrm{Tan}[c+d\,x])^5}{5\,b\,d}$$

Result (type 3, 433 leaves):

$$\frac{a\,b^3\,(a+b\,\mathrm{Tan}[c+d\,x])^4}{d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4}+\frac{2\,a\,b\,\left(a^2-2\,b^2\right)\mathrm{Cos}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^4}{d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4}-$$
$$\left(\left(a^2-2\,a\,b-b^2\right)\left(a^2+2\,a\,b-b^2\right)(c+d\,x)\,\mathrm{Cos}[c+d\,x]^4\,(a+b\,\mathrm{Tan}[c+d\,x])^4\right)\Big/$$
$$\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\right)+$$
$$\frac{4\,\left(a^3\,b-a\,b^3\right)\mathrm{Cos}[c+d\,x]^4\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]\,(a+b\,\mathrm{Tan}[c+d\,x])^4}{d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4}+$$
$$\left(\mathrm{Cos}[c+d\,x]\,\left(30\,a^2\,b^2\,\mathrm{Sin}[c+d\,x]-11\,b^4\,\mathrm{Sin}[c+d\,x]\right)(a+b\,\mathrm{Tan}[c+d\,x])^4\right)\Big/$$
$$\left(15\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\right)+$$
$$\left(\mathrm{Cos}[c+d\,x]^3\,\left(15\,a^4\,\mathrm{Sin}[c+d\,x]-120\,a^2\,b^2\,\mathrm{Sin}[c+d\,x]+23\,b^4\,\mathrm{Sin}[c+d\,x]\right)(a+b\,\mathrm{Tan}[c+d\,x])^4\right)\Big/$$
$$\left(15\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\right)+\frac{b^4\,\mathrm{Tan}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^4}{5\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4}$$

Problem 454: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^6\,(a+b\,\mathrm{Tan}[c+d\,x])^4\,dx$$

Optimal (type 3, 170 leaves, 7 steps):

$$-\left(a^4-6\,a^2\,b^2+b^4\right)x-\frac{\left(a^4-6\,a^2\,b^2+b^4\right)\mathrm{Cot}[c+d\,x]}{d}+\frac{2\,a\,b\,\left(a^2-b^2\right)\mathrm{Cot}[c+d\,x]^2}{d}+\frac{a^2\,\left(5\,a^2-27\,b^2\right)\mathrm{Cot}[c+d\,x]^3}{15\,d}-\frac{3\,a^3\,b\,\mathrm{Cot}[c+d\,x]^4}{5\,d}+\frac{4\,a\,b\,\left(a^2-b^2\right)\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a^2\,\mathrm{Cot}[c+d\,x]^5\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{5\,d}$$

Result (type 3, 436 leaves):

$$-\frac{a^3\,b\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4}{d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4}-\frac{a^4\,\mathrm{Cot}[c+d\,x]\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4}{5\,d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4}+$$
$$\left(\left(11\,a^4\,\mathrm{Cos}[c+d\,x]-30\,a^2\,b^2\,\mathrm{Cos}[c+d\,x]\right)\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4\,\mathrm{Sin}[c+d\,x]\right)\Big/$$
$$\left(15\,d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4\right)+\frac{2\,a\,b\,\left(2\,a^2-b^2\right)\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4\,\mathrm{Sin}[c+d\,x]^2}{d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4}+$$
$$\left(\left(-23\,a^4\,\mathrm{Cos}[c+d\,x]+120\,a^2\,b^2\,\mathrm{Cos}[c+d\,x]-15\,b^4\,\mathrm{Cos}[c+d\,x]\right)\right.$$
$$\left.\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4\,\mathrm{Sin}[c+d\,x]^3\right)\Big/\left(15\,d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4\right)-$$
$$\left(\left(a^2-2\,a\,b-b^2\right)\,\left(a^2+2\,a\,b-b^2\right)\,\left(c+d\,x\right)\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4\,\mathrm{Sin}[c+d\,x]^4\right)\Big/$$
$$\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4\right)+$$
$$\frac{4\,\left(a^3\,b-a\,b^3\right)\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^4\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\mathrm{Sin}[c+d\,x]^4}{d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4}$$

Problem 455: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^7\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^4\,dx$$

Optimal (type 3, 198 leaves, 8 steps):

$$-4\,a\,b\,\left(a^2-b^2\right)\,x-\frac{4\,a\,b\,\left(a^2-b^2\right)\,\mathrm{Cot}[c+d\,x]}{d}-\frac{\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Cot}[c+d\,x]^2}{2\,d}+$$
$$\frac{4\,a\,b\,\left(a^2-b^2\right)\,\mathrm{Cot}[c+d\,x]^3}{3\,d}+\frac{a^2\,\left(3\,a^2-16\,b^2\right)\,\mathrm{Cot}[c+d\,x]^4}{12\,d}-\frac{7\,a^3\,b\,\mathrm{Cot}[c+d\,x]^5}{15\,d}-$$
$$\frac{\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a^2\,\mathrm{Cot}[c+d\,x]^6\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^2}{6\,d}$$

Result (type 3, 481 leaves):

$$\frac{3 a^2 \left(a^2-2 b^2\right) (b+a \operatorname{Cot}[c+d x])^4}{4 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}-\frac{4 a^3 b \operatorname{Cot}[c+d x] (b+a \operatorname{Cot}[c+d x])^4}{5 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}-\frac{a^4 (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Csc}[c+d x]^2}{6 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}+$$
$$\left(4 \left(11 a^3 b \operatorname{Cos}[c+d x]-5 a b^3 \operatorname{Cos}[c+d x]\right) (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Sin}[c+d x]\right) \Big/ \left(15 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right)+\frac{\left(-3 a^4+12 a^2 b^2-b^4\right) (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Sin}[c+d x]^2}{2 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}-$$
$$\left(4 \left(23 a^3 b \operatorname{Cos}[c+d x]-20 a b^3 \operatorname{Cos}[c+d x]\right) (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Sin}[c+d x]^3\right) \Big/ \left(15 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right)-$$
$$\frac{4 a (a-b) b (a+b) (c+d x) (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Sin}[c+d x]^4}{d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}+$$
$$\left(\left(-a^4+6 a^2 b^2-b^4\right) (b+a \operatorname{Cot}[c+d x])^4 \operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sin}[c+d x]^4\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right)$$

Problem 461: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Tan}[c+d x]}{a+b \operatorname{Tan}[c+d x]} \, dx$$

Optimal (type 3, 46 leaves, 2 steps):

$$\frac{b x}{a^2+b^2}-\frac{a \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]}{\left(a^2+b^2\right) d}$$

Result (type 3, 66 leaves):

$$\frac{1}{2 \left(a^2+b^2\right) d} \left(2 (-i a+b) (c+d x)+2 i a \operatorname{ArcTan}[\operatorname{Tan}[c+d x]]-a \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right]\right)$$

Problem 467: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Tan}[c+d x]^6}{(a+b \operatorname{Tan}[c+d x])^2} \, dx$$

Optimal (type 3, 239 leaves, 8 steps):

$$-\frac{\left(a^2-b^2\right)x}{\left(a^2+b^2\right)^2}-\frac{2\,a\,b\,\text{Log}[\text{Cos}[c+d\,x]]}{\left(a^2+b^2\right)^2 d}-\frac{2\,a^5\left(2\,a^2+3\,b^2\right)\text{Log}[a+b\,\text{Tan}[c+d\,x]]}{b^5\left(a^2+b^2\right)^2 d}+\frac{\left(4\,a^4+2\,a^2\,b^2-b^4\right)\text{Tan}[c+d\,x]}{b^4\left(a^2+b^2\right)d}-\frac{a\left(2\,a^2+b^2\right)\text{Tan}[c+d\,x]^2}{b^3\left(a^2+b^2\right)d}+\frac{\left(4\,a^2+b^2\right)\text{Tan}[c+d\,x]^3}{3\,b^2\left(a^2+b^2\right)d}-\frac{a^2\,\text{Tan}[c+d\,x]^4}{b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 682 leaves):

$$-\left(\left((a-b)\,(a+b)\,(c+d\,x)\,\text{Sec}[c+d\,x]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\Big/\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)\right)-$$
$$\left(2\,\mathrm{i}\left(2\,a^{10}\,b^4-2\,\mathrm{i}\,a^9\,b^5+5\,a^8\,b^6-5\,\mathrm{i}\,a^7\,b^7+3\,a^6\,b^8-3\,\mathrm{i}\,a^5\,b^9\right)(c+d\,x)\,\text{Sec}[c+d\,x]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\Big/\left((a-\mathrm{i}\,b)^4\,(a+\mathrm{i}\,b)^3\,b^9\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)+$$
$$\left(2\,\mathrm{i}\left(2\,a^7+3\,a^5\,b^2\right)\text{ArcTan}[\text{Tan}[c+d\,x]]\,\text{Sec}[c+d\,x]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\Big/\left(b^5\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)+$$
$$\left(2\left(2\,a^3-a\,b^2\right)\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sec}[c+d\,x]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\Big/\left(b^5\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)-\left(\left(2\,a^7+3\,a^5\,b^2\right)\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]\text{Sec}[c+d\,x]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)\Big/\left(b^5\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)-$$
$$\frac{a\,\text{Sec}[c+d\,x]^4\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}{b^3\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+$$
$$\left(\text{Sec}[c+d\,x]^3\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(9\,a^2\,\text{Sin}[c+d\,x]-4\,b^2\,\text{Sin}[c+d\,x]\right)\right)\Big/\left(3\,b^4\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)+\frac{a^5\,\text{Sec}[c+d\,x]\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^4\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+$$
$$\frac{\text{Sec}[c+d\,x]^4\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\text{Tan}[c+d\,x]}{3\,b^2\,d\left(a+b\,\text{Tan}[c+d\,x]\right)^2}$$

Problem 468: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^5}{\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 197 leaves, 7 steps):

$$\frac{2\,a\,b\,x}{\left(a^2+b^2\right)^2}-\frac{\left(a^2-b^2\right)\text{Log}[\text{Cos}[c+d\,x]]}{\left(a^2+b^2\right)^2 d}+\frac{a^4\left(3\,a^2+5\,b^2\right)\text{Log}[a+b\,\text{Tan}[c+d\,x]]}{b^4\left(a^2+b^2\right)^2 d}-\frac{a\left(3\,a^2+2\,b^2\right)\text{Tan}[c+d\,x]}{b^3\left(a^2+b^2\right)d}+\frac{\left(3\,a^2+b^2\right)\text{Tan}[c+d\,x]^2}{2\,b^2\left(a^2+b^2\right)d}-\frac{a^2\,\text{Tan}[c+d\,x]^3}{b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 600 leaves):

$$\frac{2\,a\,b\,(c+d\,x)\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}{(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2}+$$
$$\Big((3\,\mathrm{i}\,a^9\,b^3+3\,a^8\,b^4+8\,\mathrm{i}\,a^7\,b^5+8\,a^6\,b^6+5\,\mathrm{i}\,a^5\,b^7+5\,a^4\,b^8)\,(c+d\,x)\,\mathrm{Sec}[c+d\,x]^2$$
$$(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big)\Big/\Big((a-\mathrm{i}\,b)^4\,(a+\mathrm{i}\,b)^3\,b^7\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)-$$
$$\Big(\mathrm{i}\,(3\,a^6+5\,a^4\,b^2)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big)\Big/$$
$$\Big(b^4\,(a^2+b^2)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((-3\,a^2+b^2)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big)\Big/$$
$$\Big(b^4\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+\Big((3\,a^6+5\,a^4\,b^2)$$
$$\mathrm{Log}\Big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big]\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big)\Big/$$
$$\Big(2\,b^4\,(a^2+b^2)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+\frac{\mathrm{Sec}[c+d\,x]^4\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}{2\,b^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2}-$$
$$\frac{a^4\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,\mathrm{Tan}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^3\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2}-$$
$$\frac{2\,a\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,\mathrm{Tan}[c+d\,x]}{b^3\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2}$$

Problem 469: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Tan}[c+d\,x]^4}{(a+b\,\mathrm{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 155 leaves, 6 steps):

$$\frac{(a^2-b^2)\,x}{(a^2+b^2)^2}+\frac{2\,a\,b\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{(a^2+b^2)^2\,d}-\frac{2\,a^3\,(a^2+2\,b^2)\,\mathrm{Log}[a+b\,\mathrm{Tan}[c+d\,x]]}{b^3\,(a^2+b^2)^2\,d}+$$
$$\frac{(2\,a^2+b^2)\,\mathrm{Tan}[c+d\,x]}{b^2\,(a^2+b^2)\,d}-\frac{a^2\,\mathrm{Tan}[c+d\,x]^2}{b\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

Result (type 3, 329 leaves):

$$\frac{1}{b^3\,(a^2+b^2)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$
$$\Big(a\,\Big((a+\mathrm{i}\,b)^2\,(-2\,\mathrm{i}\,a^3-4\,a^2\,b+2\,\mathrm{i}\,a\,b^2+b^3)\,(c+d\,x)+2\,a\,(a^2+b^2)^2\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]-$$
$$a^3\,(a^2+2\,b^2)\,\mathrm{Log}\Big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big]\Big)+$$
$$b\,\Big(2\,a^5+3\,a^3\,b^2+a\,b^4-2\,\mathrm{i}\,a^5\,c-4\,\mathrm{i}\,a^3\,b^2\,c+a^2\,b^3\,c-b^5\,c-2\,\mathrm{i}\,a^5\,d\,x-4\,\mathrm{i}\,a^3\,b^2\,d\,x+a^2\,b^3\,d\,x-$$
$$b^5\,d\,x+2\,a\,(a^2+b^2)^2\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]-a^3\,(a^2+2\,b^2)\,\mathrm{Log}\Big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\Big]\Big)$$
$$\mathrm{Tan}[c+d\,x]+b^2\,(a^2+b^2)^2\,\mathrm{Tan}[c+d\,x]^2+2\,\mathrm{i}\,a^3\,(a^2+2\,b^2)$$
$$\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,(a+b\,\mathrm{Tan}[c+d\,x])\Big)$$

Problem 470: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^3}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 114 leaves, 5 steps):

$$-\frac{2 a b x}{\left(a^2+b^2\right)^2}+\frac{\left(a^2-b^2\right) \text{Log}[\text{Cos}[c+d x]]}{\left(a^2+b^2\right)^2 d}+\frac{a^2 \left(a^2+3 b^2\right) \text{Log}[a+b\,\text{Tan}[c+d x]]}{b^2 \left(a^2+b^2\right)^2 d}+\frac{a^3}{b^2 \left(a^2+b^2\right) d\,(a+b\,\text{Tan}[c+d x])}$$

Result (type 3, 251 leaves):

$$\frac{1}{2 b^2 \left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+d x])}\Big(a\Big(-2\left(a^2+b^2\right)^2 \text{Log}[\text{Cos}[c+d x]]+a\Big(2 (a+i b)^2 (i a+2 b)(c+d x)+a\left(a^2+3 b^2\right) \text{Log}\big[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\big]\Big)\Big)+b\Big(-2\left(a^2+b^2\right)^2 \text{Log}[\text{Cos}[c+d x]]+a\Big(2 i \left(2 i b^3 (c+d x)+a^3 (i+c+d x)+a b^2 (i+3 c+3 d x)\right)+a\left(a^2+3 b^2\right) \text{Log}\big[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\big]\Big)\Big)\text{Tan}[c+d x]-2 i a^2 \left(a^2+3 b^2\right) \text{ArcTan}[\text{Tan}[c+d x]]\,(a+b\,\text{Tan}[c+d x])\Big)$$

Problem 471: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d x]^2}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 88 leaves, 3 steps):

$$-\frac{\left(a^2-b^2\right) x}{\left(a^2+b^2\right)^2}-\frac{2 a b\,\text{Log}[a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]]}{\left(a^2+b^2\right)^2 d}-\frac{a^2}{b \left(a^2+b^2\right) d\,(a+b\,\text{Tan}[c+d x])}$$

Result (type 3, 161 leaves):

$$\Big(-a\Big((a+i b)^2 (c+d x)+a b\,\text{Log}\big[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\big]\Big)+\Big((a+i b)\left(a^2-i b^2 (c+d x)-a b (i+c+d x)\right)-a b^2\,\text{Log}\big[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\big]\Big)\text{Tan}[c+d x]+2 i a b\,\text{ArcTan}[\text{Tan}[c+d x]]\,(a+b\,\text{Tan}[c+d x])\Big)\Big/\Big(\left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+d x])\Big)$$

Problem 472: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 82 leaves, 3 steps):

$$\frac{2\,a\,b\,x}{\left(a^2+b^2\right)^2}-\frac{\left(a^2-b^2\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{\left(a^2+b^2\right)^2\,d}+\frac{a}{\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 182 leaves):

$$\Big(a\,\left(-2\,\text{i}\,\left(a+\text{i}\,b\right)^2\,\left(c+d\,x\right)+\left(-a^2+b^2\right)\,\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]\right)+ b\,\Big(2\,\left(-\text{i}\,a+b\right)\,\left(a\,\left(-\text{i}+c+d\,x\right)+\text{i}\,b\,\left(\text{i}+c+d\,x\right)\right)+ \left(-a^2+b^2\right)\,\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]\Big)\,\text{Tan}[c+d\,x]+ 2\,\text{i}\,\left(a^2-b^2\right)\,\text{ArcTan}[\text{Tan}[c+d\,x]]\,\left(a+b\,\text{Tan}[c+d\,x]\right)\Big)\Big/\left(2\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 473: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 82 leaves, 3 steps):

$$\frac{\left(a^2-b^2\right)\,x}{\left(a^2+b^2\right)^2}+\frac{2\,a\,b\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{\left(a^2+b^2\right)^2\,d}-\frac{b}{\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 172 leaves):

$$\Big(a^2\,\left(\left(a+\text{i}\,b\right)^2\,\left(c+d\,x\right)+a\,b\,\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]\right)+ b\,\Big(\left(a+\text{i}\,b\right)\,\left(-\text{i}\,b^2+a\,b\,\left(1+\text{i}\,c+\text{i}\,d\,x\right)+a^2\,\left(c+d\,x\right)\right)+ a^2\,b\,\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]\Big)\,\text{Tan}[c+d\,x]- 2\,\text{i}\,a^2\,b\,\text{ArcTan}[\text{Tan}[c+d\,x]]\,\left(a+b\,\text{Tan}[c+d\,x]\right)\Big)\Big/\left(a\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 474: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]}{\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 107 leaves, 4 steps):

$$-\frac{2\,a\,b\,x}{\left(a^2+b^2\right)^2}+\frac{\text{Log}[\text{Sin}[c+d\,x]]}{a^2\,d}- \frac{b^2\,\left(3\,a^2+b^2\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{a^2\,\left(a^2+b^2\right)^2\,d}+\frac{b^2}{a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 256 leaves):

$$\frac{1}{2\,a^2\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}\left(a\,\left(2\,\left(a^2+b^2\right)^2\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]-b\,\left(2\,\left(2\,a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)^2\,\left(c+d\,x\right)+b\,\left(3\,a^2+b^2\right)\,\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\right)\right)+b\,\left(2\,\left(a^2+b^2\right)^2\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]+b\,\left(-2\,\left(b^3\,\left(1+\mathrm{i}\,c+\mathrm{i}\,d\,x\right)+a^2\,b\,\left(1+3\,\mathrm{i}\,c+3\,\mathrm{i}\,d\,x\right)+2\,a^3\,\left(c+d\,x\right)\right)-b\,\left(3\,a^2+b^2\right)\,\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\right)\right)\mathrm{Tan}[c+d\,x]+2\,\mathrm{i}\,b^2\,\left(3\,a^2+b^2\right)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)\right)$$

Problem 475: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d\,x]^2}{\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 150 leaves, 5 steps):

$$-\frac{\left(a^2-b^2\right)\,x}{\left(a^2+b^2\right)^2}-\frac{2\,b\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^3\,d}+\frac{2\,b^3\,\left(2\,a^2+b^2\right)\,\mathrm{Log}[a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]]}{a^3\,\left(a^2+b^2\right)^2\,d}-\frac{b\,\left(a^2+2\,b^2\right)}{a^2\,\left(a^2+b^2\right)\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}-\frac{\mathrm{Cot}[c+d\,x]}{a\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 535 leaves):

$$\frac{b^4\,\mathrm{Csc}[c+d\,x]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^3\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2}-\left(\left(a-b\right)\,\left(a+b\right)\,\left(c+d\,x\right)\,\mathrm{Csc}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)\Big/\left(\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\right)+\left(2\,\left(2\,\mathrm{i}\,a^{10}\,b^3+2\,a^9\,b^4+3\,\mathrm{i}\,a^8\,b^5+3\,a^7\,b^6+\mathrm{i}\,a^6\,b^7+a^5\,b^8\right)\,\left(c+d\,x\right)\,\mathrm{Csc}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)\Big/\left(a^8\,\left(a-\mathrm{i}\,b\right)^4\,\left(a+\mathrm{i}\,b\right)^3\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\right)-\left(2\,\mathrm{i}\,\left(2\,a^2\,b^3+b^5\right)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\mathrm{Csc}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)\Big/\left(a^3\,\left(a^2+b^2\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\right)-\frac{\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2}{a^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2}-\frac{2\,b\,\mathrm{Csc}[c+d\,x]^2\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2}{a^3\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2}+\left(\left(2\,a^2\,b^3+b^5\right)\,\mathrm{Csc}[c+d\,x]^2\,\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)\Big/\left(a^3\,\left(a^2+b^2\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\right)$$

Problem 476: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^3}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 189 leaves, 6 steps):

$$\frac{2 a b x}{\left(a^2+b^2\right)^2}-\frac{\left(a^2-3 b^2\right) \text{Log}[\text{Sin}[c+d x]]}{a^4 d}-\frac{b^4 \left(5 a^2+3 b^2\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{a^4 \left(a^2+b^2\right)^2 d}+\frac{b^2 \left(2 a^2+3 b^2\right)}{a^3 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])}+\frac{3 b \text{Cot}[c+d x]}{2 a^2 d (a+b \text{Tan}[c+d x])}-\frac{\text{Cot}[c+d x]^2}{2 a d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 596 leaves):

$$-\frac{b^5 \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}{a^4 (a-i b) (a+i b) d (b+a \text{Cot}[c+d x])^2}+\frac{2 a b (c+d x) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}{(a-i b)^2 (a+i b)^2 d (b+a \text{Cot}[c+d x])^2}+\left(\left(-5 i a^{11} b^4-5 a^{10} b^5-8 i a^9 b^6-8 a^8 b^7-3 i a^7 b^8-3 a^6 b^9\right) (c+d x) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\left(a^{10} (a-i b)^4 (a+i b)^3 d (b+a \text{Cot}[c+d x])^2\right)-\left(i \left(-5 a^2 b^4-3 b^6\right) \text{ArcTan}[\text{Tan}[c+d x]] \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\left(a^4 \left(a^2+b^2\right)^2 d (b+a \text{Cot}[c+d x])^2\right)+\frac{2 b \text{Cot}[c+d x] \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}{a^3 d (b+a \text{Cot}[c+d x])^2}-\frac{\text{Csc}[c+d x]^4 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}{2 a^2 d (b+a \text{Cot}[c+d x])^2}+\left(\left(-a^2+3 b^2\right) \text{Csc}[c+d x]^2 \text{Log}[\text{Sin}[c+d x]] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\left(a^4 d (b+a \text{Cot}[c+d x])^2\right)+\left(\left(-5 a^2 b^4-3 b^6\right) \text{Csc}[c+d x]^2 \text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\left(2 a^4 \left(a^2+b^2\right)^2 d (b+a \text{Cot}[c+d x])^2\right)$$

Problem 477: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^6}{(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 283 leaves, 8 steps):

$$-\frac{a\left(a^2-3b^2\right)x}{\left(a^2+b^2\right)^3}-\frac{b\left(3a^2-b^2\right)\text{Log}[\text{Cos}[c+dx]]}{\left(a^2+b^2\right)^3 d}+\frac{a^4\left(6a^4+17a^2b^2+15b^4\right)\text{Log}[a+b\,\text{Tan}[c+dx]]}{b^5\left(a^2+b^2\right)^3 d}-\frac{a\left(6a^4+11a^2b^2+3b^4\right)\text{Tan}[c+dx]}{b^4\left(a^2+b^2\right)^2 d}+\frac{\left(6a^4+11a^2b^2+b^4\right)\text{Tan}[c+dx]^2}{2b^3\left(a^2+b^2\right)^2 d}-\frac{a^2\,\text{Tan}[c+dx]^4}{2b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+dx]\right)^2}-\frac{2a^2\left(a^2+2b^2\right)\text{Tan}[c+dx]^3}{b^2\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 748 leaves):

$$-\frac{a^6\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)}{2\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2 b^3 d\left(a+b\,\text{Tan}[c+dx]\right)^3}-\frac{a\left(a^2-3b^2\right)(c+dx)\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3}{\left(a-\mathrm{i}\,b\right)^3\left(a+\mathrm{i}\,b\right)^3 d\left(a+b\,\text{Tan}[c+dx]\right)^3}+$$

$$\Big(\left(6\,\mathrm{i}\,a^{13}b^4+6a^{12}b^5+29\,\mathrm{i}\,a^{11}b^6+29a^{10}b^7+55\,\mathrm{i}\,a^9b^8+55a^8b^9+47\,\mathrm{i}\,a^7b^{10}+47a^6b^{11}+15\,\mathrm{i}\,a^5b^{12}+15a^4b^{13}\right)(c+dx)\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\Big)\Big/\Big(\left(a-\mathrm{i}\,b\right)^6\left(a+\mathrm{i}\,b\right)^5 b^9 d\left(a+b\,\text{Tan}[c+dx]\right)^3\Big)-$$

$$\Big(\mathrm{i}\left(6a^8+17a^6b^2+15a^4b^4\right)\text{ArcTan}[\text{Tan}[c+dx]]\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\Big)\Big/\Big(b^5\left(a^2+b^2\right)^3 d\left(a+b\,\text{Tan}[c+dx]\right)^3\Big)+$$

$$\Big(\left(-6a^2+b^2\right)\text{Log}[\text{Cos}[c+dx]]\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\Big)\Big/\Big(b^5 d\left(a+b\,\text{Tan}[c+dx]\right)^3\Big)+\Big(\left(6a^8+17a^6b^2+15a^4b^4\right)\text{Log}\left[\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^2\right]\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\Big)\Big/\Big(2b^5\left(a^2+b^2\right)^3 d\left(a+b\,\text{Tan}[c+dx]\right)^3\Big)+\frac{\text{Sec}[c+dx]^5\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3}{2b^3 d\left(a+b\,\text{Tan}[c+dx]\right)^3}-$$

$$\Big(3\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^2\left(a^6\,\text{Sin}[c+dx]+2a^4b^2\,\text{Sin}[c+dx]\right)\Big)\Big/\Big(\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2 b^4 d\left(a+b\,\text{Tan}[c+dx]\right)^3\Big)-\frac{3a\,\text{Sec}[c+dx]^3\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\text{Tan}[c+dx]}{b^4 d\left(a+b\,\text{Tan}[c+dx]\right)^3}$$

Problem 478: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+dx]^5}{\left(a+b\,\text{Tan}[c+dx]\right)^3}\,dx$$

Optimal (type 3, 239 leaves, 7 steps):

$$\frac{b\left(3 a^2-b^2\right) x}{\left(a^2+b^2\right)^3}-\frac{a\left(a^2-3 b^2\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{\left(a^2+b^2\right)^3 d}-\frac{a^3\left(3 a^4+9 a^2 b^2+10 b^4\right) \operatorname{Log}[a+b \operatorname{Tan}[c+d x]]}{b^4\left(a^2+b^2\right)^3 d}+\frac{\left(3 a^4+6 a^2 b^2+b^4\right) \operatorname{Tan}[c+d x]}{b^3\left(a^2+b^2\right)^2 d}-\frac{a^2 \operatorname{Tan}[c+d x]^3}{2 b\left(a^2+b^2\right) d(a+b \operatorname{Tan}[c+d x])^2}-\frac{a^2\left(3 a^2+7 b^2\right) \operatorname{Tan}[c+d x]^2}{2 b^2\left(a^2+b^2\right)^2 d(a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 694 leaves):

$$\frac{a^5 \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{2(a-i b)^2(a+i b)^2 b^2 d(a+b \operatorname{Tan}[c+d x])^3}+\frac{b\left(3 a^2-b^2\right)(c+d x) \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3}{(a-i b)^3(a+i b)^3 d(a+b \operatorname{Tan}[c+d x])^3}-$$
$$\left(i\left(3 a^{12} b^3-3 i a^{11} b^4+15 a^{10} b^5-15 i a^9 b^6+31 a^8 b^7-31 i a^7 b^8+29 a^6 b^9-29 i a^5 b^{10}+10 a^4 b^{11}-10 i a^3 b^{12}\right)(c+d x) \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right) \Big/ \left((a-i b)^6(a+i b)^5 b^7 d(a+b \operatorname{Tan}[c+d x])^3\right)-$$
$$\left(i\left(-3 a^7-9 a^5 b^2-10 a^3 b^4\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right) \Big/ \left(b^4\left(a^2+b^2\right)^3 d(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\frac{3 a \operatorname{Log}[\operatorname{Cos}[c+d x]] \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3}{b^4 d(a+b \operatorname{Tan}[c+d x])^3}+$$
$$\left(\left(-3 a^7-9 a^5 b^2-10 a^3 b^4\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right] \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right) \Big/ \left(2 b^4\left(a^2+b^2\right)^3 d(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\left(\operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\left(2 a^5 \operatorname{Sin}[c+d x]+5 a^3 b^2 \operatorname{Sin}[c+d x]\right)\right) \Big/ \left((a-i b)^2(a+i b)^2 b^3 d(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\frac{\operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3 \operatorname{Tan}[c+d x]}{b^3 d(a+b \operatorname{Tan}[c+d x])^3}$$

Problem 479: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Tan}[c+d x]^4}{(a+b \operatorname{Tan}[c+d x])^3}\, dx$$

Optimal (type 3, 183 leaves, 6 steps):

$$\frac{a\left(a^2-3 b^2\right) x}{\left(a^2+b^2\right)^3}+\frac{b\left(3 a^2-b^2\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{\left(a^2+b^2\right)^3 d}+\frac{a^2\left(a^4+3 a^2 b^2+6 b^4\right) \operatorname{Log}[a+b \operatorname{Tan}[c+d x]]}{b^3\left(a^2+b^2\right)^3 d}-\frac{a^2 \operatorname{Tan}[c+d x]^2}{2 b\left(a^2+b^2\right) d(a+b \operatorname{Tan}[c+d x])^2}+\frac{a^3\left(a^2+3 b^2\right)}{b^3\left(a^2+b^2\right)^2 d(a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 351 leaves):

$$\frac{1}{2 b^3 \left(a^2+b^2\right)^3 d \left(a+b \operatorname{Tan}[c+d x]\right)^3} \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right) \Big(-a^4 b^2 \left(a^2+b^2\right)-2 a^2 b \left(a^2+b^2\right) \left(a^2+4 b^2\right) \operatorname{Sin}[c+d x] \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)+ 2 a b^3 \left(a^2-3 b^2\right) (c+d x) \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2+ 2 i a^2 \left(a^4+3 a^2 b^2+6 b^4\right) (c+d x) \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2- 2 i a^2 \left(a^4+3 a^2 b^2+6 b^4\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2- 2 \left(a^2+b^2\right)^3 \operatorname{Log}[\operatorname{Cos}[c+d x]] \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2+ a^2 \left(a^4+3 a^2 b^2+6 b^4\right) \operatorname{Log}\left[\left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2\right] \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2\Big)$$

Problem 484: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]}{\left(a+b \operatorname{Tan}[c+d x]\right)^3} \, dx$$

Optimal (type 3, 168 leaves, 5 steps):

$$-\frac{b \left(3 a^2-b^2\right) x}{\left(a^2+b^2\right)^3}+\frac{\operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^3 d}-\frac{b^2 \left(6 a^4+3 a^2 b^2+b^4\right) \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]}{a^3 \left(a^2+b^2\right)^3 d}+ \frac{b^2}{2 a \left(a^2+b^2\right) d \left(a+b \operatorname{Tan}[c+d x]\right)^2}+\frac{b^2 \left(3 a^2+b^2\right)}{a^2 \left(a^2+b^2\right)^2 d \left(a+b \operatorname{Tan}[c+d x]\right)}$$

Result (type 3, 638 leaves):

$$\frac{b^4 \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)}{2 a (a-i b)^2 (a+i b)^2 d \left(a+b \operatorname{Tan}[c+d x]\right)^3}- \frac{b \left(3 a^2-b^2\right) (c+d x) \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3}{(a-i b)^3 (a+i b)^3 d \left(a+b \operatorname{Tan}[c+d x]\right)^3}+ \left(\left(-6 i a^{14} b^2-6 a^{13} b^3-15 i a^{12} b^4-15 a^{11} b^5-13 i a^{10} b^6-13 a^9 b^7-5 i a^8 b^8-5 a^7 b^9- i a^6 b^{10}-a^5 b^{11}\right) (c+d x) \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3\right) \Big/ \left(a^8 (a-i b)^6 (a+i b)^5 d \left(a+b \operatorname{Tan}[c+d x]\right)^3\right)- \left(i \left(-6 a^4 b^2-3 a^2 b^4-b^6\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3\right) \Big/ \left(a^3 \left(a^2+b^2\right)^3 d \left(a+b \operatorname{Tan}[c+d x]\right)^3\right)+ \frac{\operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3}{a^3 d \left(a+b \operatorname{Tan}[c+d x]\right)^3}+ \left(\left(-6 a^4 b^2-3 a^2 b^4-b^6\right) \operatorname{Log}\left[\left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2\right] \operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3\right) \Big/ \left(2 a^3 \left(a^2+b^2\right)^3 d \left(a+b \operatorname{Tan}[c+d x]\right)^3\right)+ \left(\operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2 \left(-4 a^2 b^3 \operatorname{Sin}[c+d x]-b^5 \operatorname{Sin}[c+d x]\right)\right) \Big/ \left(a^3 (a-i b)^2 (a+i b)^2 d \left(a+b \operatorname{Tan}[c+d x]\right)^3\right)$$

Problem 485: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^2}{(a+b \text{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 211 leaves, 6 steps):

$$-\frac{a \left(a^2-3 b^2\right) x}{\left(a^2+b^2\right)^3}-\frac{3 b \text{Log}[\text{Sin}[c+d x]]}{a^4 d}+\frac{b^3 \left(10 a^4+9 a^2 b^2+3 b^4\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{a^4 \left(a^2+b^2\right)^3 d}-\frac{b \left(2 a^2+3 b^2\right)}{2 a^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^2}-\frac{\text{Cot}[c+d x]}{a d (a+b \text{Tan}[c+d x])^2}-\frac{b \left(a^4+6 a^2 b^2+3 b^4\right)}{a^3 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 691 leaves):

$$-\frac{b^5 \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}{2 a^2 (a-i b)^2 (a+i b)^2 d (b+a \text{Cot}[c+d x])^3}-\frac{a \left(a^2-3 b^2\right) (c+d x) \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3}{(a-i b)^3 (a+i b)^3 d (b+a \text{Cot}[c+d x])^3}+$$
$$\left(\left(10 i a^{15} b^3+10 a^{14} b^4+29 i a^{13} b^5+29 a^{12} b^6+31 i a^{11} b^7+31 a^{10} b^8+15 i a^9 b^9+15 a^8 b^{10}+3 i a^7 b^{11}+3 a^6 b^{12}\right) (c+d x) \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right) \Big/ \left(a^{10} (a-i b)^6 (a+i b)^5 d (b+a \text{Cot}[c+d x])^3\right)-$$
$$\left(i \left(10 a^4 b^3+9 a^2 b^5+3 b^7\right) \text{ArcTan}[\text{Tan}[c+d x]] \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right) \Big/ \left(a^4 \left(a^2+b^2\right)^3 d (b+a \text{Cot}[c+d x])^3\right)-$$
$$\frac{\text{Cot}[c+d x] \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3}{a^3 d (b+a \text{Cot}[c+d x])^3}-\frac{3 b \text{Csc}[c+d x]^3 \text{Log}[\text{Sin}[c+d x]] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3}{a^4 d (b+a \text{Cot}[c+d x])^3}+$$
$$\left(\left(10 a^4 b^3+9 a^2 b^5+3 b^7\right) \text{Csc}[c+d x]^3 \text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right) \Big/ \left(2 a^4 \left(a^2+b^2\right)^3 d (b+a \text{Cot}[c+d x])^3\right)+$$
$$\left(\text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 \left(5 a^2 b^4 \text{Sin}[c+d x]+2 b^6 \text{Sin}[c+d x]\right)\right) \Big/ \left(a^4 (a-i b)^2 (a+i b)^2 d (b+a \text{Cot}[c+d x])^3\right)$$

Problem 486: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^6}{(a+b \text{Tan}[c+d x])^4} \, dx$$

Optimal (type 3, 315 leaves, 8 steps):

$$-\frac{\left(a^4-6 a^2 b^2+b^4\right) x}{\left(a^2+b^2\right)^4}-\frac{4 a b \left(a^2-b^2\right) \text{Log}[\text{Cos}[c+d x]]}{\left(a^2+b^2\right)^4 d}-\frac{4 a^3 \left(a^6+4 a^4 b^2+6 a^2 b^4+5 b^6\right) \text{Log}[a+b \text{Tan}[c+d x]]}{b^5 \left(a^2+b^2\right)^4 d}+\frac{\left(4 a^6+12 a^4 b^2+13 a^2 b^4+b^6\right) \text{Tan}[c+d x]}{b^4 \left(a^2+b^2\right)^3 d}-\frac{a^2 \text{Tan}[c+d x]^4}{3 b \left(a^2+b^2\right) d \left(a+b \text{Tan}[c+d x]\right)^3}-\frac{a^2 \left(2 a^2+5 b^2\right) \text{Tan}[c+d x]^3}{3 b^2 \left(a^2+b^2\right)^2 d \left(a+b \text{Tan}[c+d x]\right)^2}-\frac{2 a^2 \left(a^4+3 a^2 b^2+4 b^4\right) \text{Tan}[c+d x]^2}{b^3 \left(a^2+b^2\right)^3 d \left(a+b \text{Tan}[c+d x]\right)}$$

Result (type 3, 1281 leaves):

$$-\left(\left(4 i \left(a^{16} b^4-i a^{15} b^5+7 a^{14} b^6-7 i a^{13} b^7+21 a^{12} b^8-21 i a^{11} b^9+36 a^{10} b^{10}-36 i a^9 b^{11}+37 a^8 b^{12}-37 i a^7 b^{13}+21 a^6 b^{14}-21 i a^5 b^{15}+5 a^4 b^{16}-5 i a^3 b^{17}\right) (c+d x) \text{Sec}[c+d x]^4 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^4\right) \Big/ \left((a-i b)^8 (a+i b)^7 b^9 d \left(a+b \text{Tan}[c+d x]\right)^4\right)\right)+\left(4 i \left(a^9+4 a^7 b^2+6 a^5 b^4+5 a^3 b^6\right) \text{ArcTan}[\text{Tan}[c+d x]] \text{Sec}[c+d x]^4 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^4\right) \Big/ \left(b^5 \left(a^2+b^2\right)^4 d \left(a+b \text{Tan}[c+d x]\right)^4\right)+\frac{4 a \text{Log}[\text{Cos}[c+d x]] \text{Sec}[c+d x]^4 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^4}{b^5 d \left(a+b \text{Tan}[c+d x]\right)^4}-\left(2 \left(a^9+4 a^7 b^2+6 a^5 b^4+5 a^3 b^6\right) \text{Log}\left[\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2\right] \text{Sec}[c+d x]^4 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^4\right) \Big/ \left(b^5 \left(a^2+b^2\right)^4 d \left(a+b \text{Tan}[c+d x]\right)^4\right)+\frac{1}{24 b^4 (-i a+b)^4 (i a+b)^4 d \left(a+b \text{Tan}[c+d x]\right)^4} \text{Sec}[c+d x]^5 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right) \left(39 a^{10} b+171 a^8 b^3+276 a^6 b^5+180 a^4 b^7+45 a^2 b^9+9 b^{11}-9 a^7 b^4 (c+d x)+45 a^5 b^6 (c+d x)+45 a^3 b^8 (c+d x)-9 a b^{10} (c+d x)+12 a^{10} b \text{Cos}[2 (c+d x)]+32 a^8 b^3 \text{Cos}[2 (c+d x)]-16 a^6 b^5 \text{Cos}[2 (c+d x)]-72 a^4 b^7 \text{Cos}[2 (c+d x)]-48 a^2 b^9 \text{Cos}[2 (c+d x)]-12 b^{11} \text{Cos}[2 (c+d x)]-12 a^7 b^4 (c+d x) \text{Cos}[2 (c+d x)]+72 a^5 b^6 (c+d x) \text{Cos}[2 (c+d x)]-12 a^3 b^8 (c+d x) \text{Cos}[2 (c+d x)]-27 a^{10} b \text{Cos}[4 (c+d x)]-115 a^8 b^3 \text{Cos}[4 (c+d x)]-196 a^6 b^5 \text{Cos}[4 (c+d x)]-108 a^4 b^7 \text{Cos}[4 (c+d x)]+3 a^2 b^9 \text{Cos}[4 (c+d x)]+3 b^{11} \text{Cos}[4 (c+d x)]-3 a^7 b^4 (c+d x) \text{Cos}[4 (c+d x)]+27 a^5 b^6 (c+d x) \text{Cos}[4 (c+d x)]-57 a^3 b^8 (c+d x) \text{Cos}[4 (c+d x)]+9 a b^{10} (c+d x) \text{Cos}[4 (c+d x)]+24 a^{11} \text{Sin}[2 (c+d x)]+158 a^9 b^2 \text{Sin}[2 (c+d x)]+396 a^7 b^4 \text{Sin}[2 (c+d x)]+412 a^5 b^6 \text{Sin}[2 (c+d x)]+168 a^3 b^8 \text{Sin}[2 (c+d x)]+18 a b^{10} \text{Sin}[2 (c+d x)]-18 a^6 b^5 (c+d x) \text{Sin}[2 (c+d x)]+102 a^4 b^7 (c+d x) \text{Sin}[2 (c+d x)]+18 a^2 b^9 (c+d x) \text{Sin}[2 (c+d x)]-6 b^{11} (c+d x) \text{Sin}[2 (c+d x)]+12 a^{11} \text{Sin}[4 (c+d x)]+35 a^9 b^2 \text{Sin}[4 (c+d x)]+18 a^7 b^4 \text{Sin}[4 (c+d x)]-74 a^5 b^6 \text{Sin}[4 (c+d x)]-78 a^3 b^8 \text{Sin}[4 (c+d x)]-9 a b^{10} \text{Sin}[4 (c+d x)]-9 a^6 b^5 (c+d x) \text{Sin}[4 (c+d x)]+57 a^4 b^7 (c+d x) \text{Sin}[4 (c+d x)]-27 a^2 b^9 (c+d x) \text{Sin}[4 (c+d x)]+3 b^{11} (c+d x) \text{Sin}[4 (c+d x)]\right)$$

Problem 487: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^5}{(a+b\,\text{Tan}[c+d x])^4}\,dx$$

Optimal (type 3, 256 leaves, 7 steps):

$$\frac{4 a b \left(a^2-b^2\right) x}{\left(a^2+b^2\right)^4}-\frac{\left(a^4-6 a^2 b^2+b^4\right) \text{Log}[\text{Cos}[c+d x]]}{\left(a^2+b^2\right)^4 d}+\frac{a^2 \left(a^6+4 a^4 b^2+5 a^2 b^4+10 b^6\right) \text{Log}[a+b\,\text{Tan}[c+d x]]}{b^4 \left(a^2+b^2\right)^4 d}-\frac{a^2\,\text{Tan}[c+d x]^3}{3 b \left(a^2+b^2\right) d\,(a+b\,\text{Tan}[c+d x])^3}-\frac{a^2 \left(a^2+3 b^2\right) \text{Tan}[c+d x]^2}{2 b^2 \left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+d x])^2}+\frac{a^3 \left(a^4+3 a^2 b^2+6 b^4\right)}{b^4 \left(a^2+b^2\right)^3 d\,(a+b\,\text{Tan}[c+d x])}$$

Result (type 3, 788 leaves):

$$-\frac{a^4 \left(3 a^2+13 b^2\right) \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}{6 (a-i b)^3 (a+i b)^3 b^2 d\,(a+b\,\text{Tan}[c+d x])^4}+$$
$$\left(4 a (a-b) b (a+b) (c+d x) \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\right) \Big/ \left((a-i b)^4 (a+i b)^4 d\,(a+b\,\text{Tan}[c+d x])^4\right)+$$
$$\Big(\left(i a^{15} b^3+a^{14} b^4+7 i a^{13} b^5+7 a^{12} b^6+20 i a^{11} b^7+20 a^{10} b^8+38 i a^9 b^9+38 a^8 b^{10}+49 i a^7 b^{11}+49 a^6 b^{12}+35 i a^5 b^{13}+35 a^4 b^{14}+10 i a^3 b^{15}+10 a^2 b^{16}\right) (c+d x) \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\Big) \Big/ \left((a-i b)^8 (a+i b)^7 b^7 d\,(a+b\,\text{Tan}[c+d x])^4\right)-$$
$$\left(i \left(a^8+4 a^6 b^2+5 a^4 b^4+10 a^2 b^6\right) \text{ArcTan}[\text{Tan}[c+d x]] \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\right) \Big/ \left(b^4 \left(a^2+b^2\right)^4 d\,(a+b\,\text{Tan}[c+d x])^4\right)-$$
$$\frac{\text{Log}[\text{Cos}[c+d x]] \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4}{b^4 d\,(a+b\,\text{Tan}[c+d x])^4}+$$
$$\left(\left(a^8+4 a^6 b^2+5 a^4 b^4+10 a^2 b^6\right) \text{Log}\left[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\right] \text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\right) \Big/ \left(2 b^4 \left(a^2+b^2\right)^4 d\,(a+b\,\text{Tan}[c+d x])^4\right)+$$
$$\Big(\text{Sec}[c+d x]^4 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3 \left(-3 a^6\,\text{Sin}[c+d x]-11 a^4 b^2\,\text{Sin}[c+d x]-30 a^2 b^4\,\text{Sin}[c+d x]\right)\Big) \Big/ \left(3 (a-i b)^3 (a+i b)^3 b^3 d\,(a+b\,\text{Tan}[c+d x])^4\right)-$$
$$\frac{a^4\,\text{Sec}[c+d x]^3 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]) \text{Tan}[c+d x]}{3 (a-i b)^2 (a+i b)^2 b d\,(a+b\,\text{Tan}[c+d x])^4}$$

Problem 488: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^4}{(a+b\,\text{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 208 leaves, 5 steps):

$$\frac{\left(a^4-6\,a^2\,b^2+b^4\right)\,x}{\left(a^2+b^2\right)^4}+\frac{4\,a\,b\,\left(a^2-b^2\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{\left(a^2+b^2\right)^4\,d}-\frac{a^2\,\text{Tan}[c+d\,x]^2}{3\,b\,\left(a^2+b^2\right)\,d\,(a+b\,\text{Tan}[c+d\,x])^3}+\frac{a^3\,\left(a^2+4\,b^2\right)}{3\,b^3\,\left(a^2+b^2\right)^2\,d\,(a+b\,\text{Tan}[c+d\,x])^2}-\frac{a^2\,\left(2\,a^4+7\,a^2\,b^2+17\,b^4\right)}{3\,b^3\,\left(a^2+b^2\right)^3\,d\,(a+b\,\text{Tan}[c+d\,x])}$$

Result (type 3, 614 leaves):

$$\frac{5\,a^3\,b\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}{3\,(a-i\,b)^3\,(a+i\,b)^3\,d\,(a+b\,\text{Tan}[c+d\,x])^4}+$$
$$\left(\left(a^2-2\,a\,b-b^2\right)\,\left(a^2+2\,a\,b-b^2\right)\,(c+d\,x)\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)\Big/\left((a-i\,b)^4\,(a+i\,b)^4\,d\,(a+b\,\text{Tan}[c+d\,x])^4\right)+$$
$$\left(4\,\left(i\,a^{10}\,b+a^9\,b^2+2\,i\,a^8\,b^3+2\,a^7\,b^4-2\,i\,a^4\,b^7-2\,a^3\,b^8-i\,a^2\,b^9-a\,b^{10}\right)\,(c+d\,x)\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)\Big/\left((a-i\,b)^8\,(a+i\,b)^7\,d\,(a+b\,\text{Tan}[c+d\,x])^4\right)-$$
$$\left(4\,i\,\left(a^3\,b-a\,b^3\right)\,\text{ArcTan}[\text{Tan}[c+d\,x]]\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)\Big/\left(\left(a^2+b^2\right)^4\,d\,(a+b\,\text{Tan}[c+d\,x])^4\right)+$$
$$\left(2\,\left(a^3\,b-a\,b^3\right)\,\text{Log}\left[(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right]\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)\Big/\left(\left(a^2+b^2\right)^4\,d\,(a+b\,\text{Tan}[c+d\,x])^4\right)-$$
$$\left(2\,\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,\left(2\,a^3\,\text{Sin}[c+d\,x]-9\,a\,b^2\,\text{Sin}[c+d\,x]\right)\right)\Big/\left(3\,(a-i\,b)^3\,(a+i\,b)^3\,d\,(a+b\,\text{Tan}[c+d\,x])^4\right)+$$
$$\frac{a^3\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}[c+d\,x]}{3\,(a-i\,b)^2\,(a+i\,b)^2\,d\,(a+b\,\text{Tan}[c+d\,x])^4}$$

Problem 489: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^3}{(a+b\,\text{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 189 leaves, 5 steps):

$$-\frac{4 a b \left(a^2-b^2\right) x}{\left(a^2+b^2\right)^4}+\frac{\left(a^4-6 a^2 b^2+b^4\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{\left(a^2+b^2\right)^4 d}-\frac{a^2 \text{Tan}[c+d x]}{3 b \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}-\frac{a^2 \left(a^2+7 b^2\right)}{6 b^2 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2}-\frac{a \left(a^2-3 b^2\right)}{\left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 385 leaves):

$$\frac{1}{12 \left(a^2+b^2\right)^4 d (a+b \text{Tan}[c+d x])^4} \text{Sec}[c+d x]^4 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x]) \Bigg(-(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \Bigg(48 a (a-b) b (a+b) (c+d x)-12 i \left(a^4-6 a^2 b^2+b^4\right) (c+d x)+12 i \left(a^4-6 a^2 b^2+b^4\right) \text{ArcTan}[\text{Tan}[c+d x]]-6 \left(a^4-6 a^2 b^2+b^4\right) \text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right]+\frac{2 b \left(a^2-b^2\right) \left(a^2+b^2\right)^2 \text{Sin}[c+d x]}{(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3}-\frac{\left(a^2+b^2\right) \left(3 a^4-16 a^2 b^2+b^4\right)}{(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{44 b \left(-a^4+b^4\right) \text{Sin}[c+d x]}{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\Bigg)+\left(a^2+b^2\right)^2 \Big(3 a \left(a^2+b^2\right) \text{Cos}[c+d x]+b \left(-4 a b \text{Cos}[3 (c+d x)]+\left(5 a^2+b^2+4 \left(a^2-b^2\right) \text{Cos}[2 (c+d x)]\right) \text{Sin}[c+d x]\right)\Big)\Bigg)$$

Problem 490: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^2}{(a+b \text{Tan}[c+d x])^4} \, dx$$

Optimal (type 3, 169 leaves, 5 steps):

$$-\frac{\left(a^4-6 a^2 b^2+b^4\right) x}{\left(a^2+b^2\right)^4}-\frac{4 a b \left(a^2-b^2\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{\left(a^2+b^2\right)^4 d}-\frac{a^2}{3 b \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}+\frac{a b}{\left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2}+\frac{b \left(3 a^2-b^2\right)}{\left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 514 leaves):

$$\frac{1}{24\,a\,\left(a^2+b^2\right)^4 d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^4}\,\text{Sec}[c+d\,x]^4\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)$$
$$\left(\left(a^2+b^2\right)^3\,\left(-a\,b\,\text{Cos}\left[3\,\left(c+d\,x\right)\right]+\left(2\,a^2+b^2+\left(a^2-b^2\right)\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\text{Sin}[c+d\,x]\right)-\right.$$
$$\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3$$
$$\left(96\,i\,a^2\,b\,\left(a^2-b^2\right)\,\left(c+d\,x\right)-96\,i\,a^2\,b\,\left(a^2-b^2\right)\,\text{ArcTan}[\text{Tan}[c+d\,x]]+\right.$$
$$48\,a^2\,b\,\left(a^2-b^2\right)\,\text{Log}\left[\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right]+\frac{1}{\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3}$$
$$\left(6\,a\,\left(a^2+b^2\right)\,\left(2\,a^4\,b+8\,a^2\,b^3-2\,b^5+3\,a^5\,\left(c+d\,x\right)-18\,a^3\,b^2\,\left(c+d\,x\right)+3\,a\,b^4\,\left(c+d\,x\right)\right)\right.$$
$$\text{Cos}[c+d\,x]+a\,\left(a^4-6\,a^2\,b^2+b^4\right)\,\left(11\,a^2\,b+11\,b^3+6\,a^3\,\left(c+d\,x\right)-18\,a\,b^2\,\left(c+d\,x\right)\right)$$
$$\text{Cos}\left[3\,\left(c+d\,x\right)\right]-\left(10\,a^8-63\,a^6\,b^2-105\,a^4\,b^4-21\,a^2\,b^6+11\,b^8-36\,a^7\,b\,\left(c+d\,x\right)+\right.$$
$$204\,a^5\,b^3\,\left(c+d\,x\right)+36\,a^3\,b^5\,\left(c+d\,x\right)-12\,a\,b^7\,\left(c+d\,x\right)+\left(a^4-6\,a^2\,b^2+b^4\right)$$
$$\left.\left.\left.\left(11\,a^4-11\,b^4-36\,a^3\,b\,\left(c+d\,x\right)+12\,a\,b^3\,\left(c+d\,x\right)\right)\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\text{Sin}[c+d\,x]\right)\right)\right)$$

Problem 491: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]}{\left(a+b\,\text{Tan}[c+d\,x]\right)^4}\,dx$$

Optimal (type 3, 172 leaves, 5 steps):

$$\frac{4\,a\,b\,\left(a^2-b^2\right)\,x}{\left(a^2+b^2\right)^4}-\frac{\left(a^4-6\,a^2\,b^2+b^4\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{\left(a^2+b^2\right)^4\,d}+$$
$$\frac{a}{3\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3}+$$
$$\frac{a^2-b^2}{2\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+\frac{a\,\left(a^2-3\,b^2\right)}{\left(a^2+b^2\right)^3\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 384 leaves):

$$\frac{1}{12\left(a^2+b^2\right)^4 d\,(a+b\,\text{Tan}[c+d\,x])^4}$$
$$\text{Sec}[c+d\,x]^4\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\Bigg((a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3$$
$$\Big(48\,a\,(a-b)\,b\,(a+b)\,(c+d\,x)-12\,i\,\left(a^4-6\,a^2\,b^2+b^4\right)(c+d\,x)+12\,i\,\left(a^4-6\,a^2\,b^2+b^4\right)$$
$$\text{ArcTan}[\text{Tan}[c+d\,x]]-6\left(a^4-6\,a^2\,b^2+b^4\right)\text{Log}\left[(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right]+$$
$$\frac{2\,b\left(a^2-b^2\right)\left(a^2+b^2\right)^2\text{Sin}[c+d\,x]}{(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3}-\frac{\left(a^2+b^2\right)\left(3\,a^4-16\,a^2\,b^2+b^4\right)}{(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+$$
$$\frac{44\,b\left(-a^4+b^4\right)\text{Sin}[c+d\,x]}{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Big)+\left(a^2+b^2\right)^2\Big(3\,a\left(a^2+b^2\right)\text{Cos}[c+d\,x]+$$
$$b\left(-4\,a\,b\,\text{Cos}[3\,(c+d\,x)]+\left(5\,a^2+b^2+4\left(a^2-b^2\right)\text{Cos}[2\,(c+d\,x)]\right)\text{Sin}[c+d\,x]\right)\Big)\Bigg)$$

Problem 492: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 165 leaves, 5 steps):

$$\frac{\left(a^4-6\,a^2\,b^2+b^4\right)x}{\left(a^2+b^2\right)^4}+\frac{4\,a\,b\left(a^2-b^2\right)\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]}{\left(a^2+b^2\right)^4 d}-$$
$$\frac{b}{3\left(a^2+b^2\right)d\,(a+b\,\text{Tan}[c+d\,x])^3}-$$
$$\frac{a\,b}{\left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+d\,x])^2}-\frac{b\left(3\,a^2-b^2\right)}{\left(a^2+b^2\right)^3 d\,(a+b\,\text{Tan}[c+d\,x])}$$

Result (type 3, 633 leaves):

$$-\frac{b^3\left(6 a^2+b^2\right) \operatorname{Sec}[c+d x]^4(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2}{3 a(a-\mathrm{i} b)^3(a+\mathrm{i} b)^3 d(a+b \operatorname{Tan}[c+d x])^4}+$$
$$\left(\left(a^2-2 a b-b^2\right)\left(a^2+2 a b-b^2\right)(c+d x) \operatorname{Sec}[c+d x]^4(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left((a-\mathrm{i} b)^4(a+\mathrm{i} b)^4 d(a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\left(4\left(\mathrm{i} a^{10} b+a^9 b^2+2 \mathrm{i} a^8 b^3+2 a^7 b^4-2 \mathrm{i} a^4 b^7-2 a^3 b^8-\mathrm{i} a^2 b^9-a b^{10}\right)(c+d x) \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left((a-\mathrm{i} b)^8(a+\mathrm{i} b)^7 d(a+b \operatorname{Tan}[c+d x])^4\right)-$$
$$\left(4 \mathrm{i}\left(a^3 b-a b^3\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \operatorname{Sec}[c+d x]^4(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left(\left(a^2+b^2\right)^4 d(a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\left(2\left(a^3 b-a b^3\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right] \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left(\left(a^2+b^2\right)^4 d(a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\left(2 \operatorname{Sec}[c+d x]^4(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\left(9 a^2 b^2 \operatorname{Sin}[c+d x]-2 b^4 \operatorname{Sin}[c+d x]\right)\right) \Big/ \left(3 a(a-\mathrm{i} b)^3(a+\mathrm{i} b)^3 d(a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\frac{b^4 \operatorname{Sec}[c+d x]^3(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \operatorname{Tan}[c+d x]}{3 a(a-\mathrm{i} b)^2(a+\mathrm{i} b)^2 d(a+b \operatorname{Tan}[c+d x])^4}$$

Problem 493: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]}{(a+b \operatorname{Tan}[c+d x])^4} \, dx$$

Optimal (type 3, 226 leaves, 6 steps):

$$-\frac{4 a b\left(a^2-b^2\right) x}{\left(a^2+b^2\right)^4}+\frac{\operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^4 d}-$$
$$\frac{b^2\left(10 a^6+5 a^4 b^2+4 a^2 b^4+b^6\right) \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]}{a^4\left(a^2+b^2\right)^4 d}+$$
$$\frac{b^2}{3 a\left(a^2+b^2\right) d(a+b \operatorname{Tan}[c+d x])^3}+$$
$$\frac{b^2\left(3 a^2+b^2\right)}{2 a^2\left(a^2+b^2\right)^2 d(a+b \operatorname{Tan}[c+d x])^2}+\frac{b^2\left(6 a^4+3 a^2 b^2+b^4\right)}{a^3\left(a^2+b^2\right)^3 d(a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 790 leaves):

$$\frac{5 b^4 \left(3 a^2+b^2\right) \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2}{6 a^2 (a-i b)^3 (a+i b)^3 d (a+b \operatorname{Tan}[c+d x])^4}-$$
$$\left(4 a (a-b) b (a+b) (c+d x) \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left((a-i b)^4 (a+i b)^4 d (a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\left(\left(-10 i a^{19} b^2-10 a^{18} b^3-35 i a^{17} b^4-35 a^{16} b^5-49 i a^{15} b^6-49 a^{14} b^7-38 i a^{13} b^8-38 a^{12} b^9-20 i a^{11} b^{10}-20 a^{10} b^{11}-7 i a^9 b^{12}-7 a^8 b^{13}-i a^7 b^{14}-a^6 b^{15}\right) (c+d x) \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left(a^{10} (a-i b)^8 (a+i b)^7 d (a+b \operatorname{Tan}[c+d x])^4\right)-$$
$$\left(i \left(-10 a^6 b^2-5 a^4 b^4-4 a^2 b^6-b^8\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left(a^4 \left(a^2+b^2\right)^4 d (a+b \operatorname{Tan}[c+d x])^4\right)+$$
$$\frac{\operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4}{a^4 d (a+b \operatorname{Tan}[c+d x])^4}+$$
$$\left(\left(-10 a^6 b^2-5 a^4 b^4-4 a^2 b^6-b^8\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right] \operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\right) \Big/ \left(2 a^4 \left(a^2+b^2\right)^4 d (a+b \operatorname{Tan}[c+d x])^4\right)+\left(\operatorname{Sec}[c+d x]^4 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3 \left(-30 a^4 b^3 \operatorname{Sin}[c+d x]-11 a^2 b^5 \operatorname{Sin}[c+d x]-3 b^7 \operatorname{Sin}[c+d x]\right)\right) \Big/ \left(3 a^4 (a-i b)^3 (a+i b)^3 d (a+b \operatorname{Tan}[c+d x])^4\right)-$$
$$\frac{b^5 \operatorname{Sec}[c+d x]^3 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \operatorname{Tan}[c+d x]}{3 a^2 (a-i b)^2 (a+i b)^2 d (a+b \operatorname{Tan}[c+d x])^4}$$

Problem 494: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]^2}{(a+b \operatorname{Tan}[c+d x])^4} \, dx$$

Optimal (type 3, 278 leaves, 7 steps):

$$-\frac{\left(a^4-6 a^2 b^2+b^4\right) x}{\left(a^2+b^2\right)^4}-\frac{4 b \operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^5 d}+\frac{4 b^3 \left(5 a^6+6 a^4 b^2+4 a^2 b^4+b^6\right) \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]}{a^5 \left(a^2+b^2\right)^4 d}-$$
$$\frac{b \left(3 a^2+4 b^2\right)}{3 a^2 \left(a^2+b^2\right) d (a+b \operatorname{Tan}[c+d x])^3}-\frac{\operatorname{Cot}[c+d x]}{a d (a+b \operatorname{Tan}[c+d x])^3}-$$
$$\frac{b \left(a^4+4 a^2 b^2+2 b^4\right)}{a^3 \left(a^2+b^2\right)^2 d (a+b \operatorname{Tan}[c+d x])^2}-\frac{b \left(a^6+13 a^4 b^2+12 a^2 b^4+4 b^6\right)}{a^4 \left(a^2+b^2\right)^3 d (a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 1318 leaves):

$$\Big(4\,(5\,i\,a^{20}\,b^3+5\,a^{19}\,b^4+21\,i\,a^{18}\,b^5+21\,a^{17}\,b^6+37\,i\,a^{16}\,b^7+37\,a^{15}\,b^8+36\,i\,a^{14}\,b^9+36\,a^{13}\,b^{10}+21\,i\,a^{12}\,b^{11}+21\,a^{11}\,b^{12}+7\,i\,a^{10}\,b^{13}+7\,a^9\,b^{14}+i\,a^8\,b^{15}+a^7\,b^{16})\,(c+d\,x)\,\mathrm{Csc}[c+d\,x]^4\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\Big)\Big/\Big(a^{12}\,(a-i\,b)^8\,(a+i\,b)^7\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^4\Big)-\Big(4\,i\,(5\,a^6\,b^3+6\,a^4\,b^5+4\,a^2\,b^7+b^9)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\mathrm{Csc}[c+d\,x]^4\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\Big)\Big/\Big(a^5\,(a^2+b^2)^4\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^4\Big)-\frac{4\,b\,\mathrm{Csc}[c+d\,x]^4\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4}{a^5\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^4}+\Big(2\,(5\,a^6\,b^3+6\,a^4\,b^5+4\,a^2\,b^7+b^9)\,\mathrm{Csc}[c+d\,x]^4\,\mathrm{Log}\big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\big]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\Big)\Big/\Big(a^5\,(a^2+b^2)^4\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^4\Big)+\frac{1}{24\,a^5\,(a-i\,b)^4\,(a+i\,b)^4\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^4}\,\mathrm{Csc}[c+d\,x]^5\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,\big(-9\,a^{12}-45\,a^{10}\,b^2-45\,a^8\,b^4+90\,a^6\,b^6+183\,a^4\,b^8+111\,a^2\,b^{10}+27\,b^{12}-9\,a^{11}\,b\,(c+d\,x)+45\,a^9\,b^3\,(c+d\,x)+45\,a^7\,b^5\,(c+d\,x)-9\,a^5\,b^7\,(c+d\,x)-12\,a^{12}\,\mathrm{Cos}[2\,(c+d\,x)]-48\,a^{10}\,b^2\,\mathrm{Cos}[2\,(c+d\,x)]-72\,a^8\,b^4\,\mathrm{Cos}[2\,(c+d\,x)]-196\,a^6\,b^6\,\mathrm{Cos}[2\,(c+d\,x)]-276\,a^4\,b^8\,\mathrm{Cos}[2\,(c+d\,x)]-152\,a^2\,b^{10}\,\mathrm{Cos}[2\,(c+d\,x)]-36\,b^{12}\,\mathrm{Cos}[2\,(c+d\,x)]+12\,a^9\,b^3\,(c+d\,x)\,\mathrm{Cos}[2\,(c+d\,x)]-72\,a^7\,b^5\,(c+d\,x)\,\mathrm{Cos}[2\,(c+d\,x)]+12\,a^5\,b^7\,(c+d\,x)\,\mathrm{Cos}[2\,(c+d\,x)]-3\,a^{12}\,\mathrm{Cos}[4\,(c+d\,x)]-3\,a^{10}\,b^2\,\mathrm{Cos}[4\,(c+d\,x)]-27\,a^8\,b^4\,\mathrm{Cos}[4\,(c+d\,x)]+10\,a^6\,b^6\,\mathrm{Cos}[4\,(c+d\,x)]+69\,a^4\,b^8\,\mathrm{Cos}[4\,(c+d\,x)]+41\,a^2\,b^{10}\,\mathrm{Cos}[4\,(c+d\,x)]+9\,b^{12}\,\mathrm{Cos}[4\,(c+d\,x)]+9\,a^{11}\,b\,(c+d\,x)\,\mathrm{Cos}[4\,(c+d\,x)]-57\,a^9\,b^3\,(c+d\,x)\,\mathrm{Cos}[4\,(c+d\,x)]+27\,a^7\,b^5\,(c+d\,x)\,\mathrm{Cos}[4\,(c+d\,x)]-3\,a^5\,b^7\,(c+d\,x)\,\mathrm{Cos}[4\,(c+d\,x)]-18\,a^{11}\,b\,\mathrm{Sin}[2\,(c+d\,x)]-78\,a^9\,b^3\,\mathrm{Sin}[2\,(c+d\,x)]+12\,a^7\,b^5\,\mathrm{Sin}[2\,(c+d\,x)]+148\,a^5\,b^7\,\mathrm{Sin}[2\,(c+d\,x)]+106\,a^3\,b^9\,\mathrm{Sin}[2\,(c+d\,x)]+30\,a\,b^{11}\,\mathrm{Sin}[2\,(c+d\,x)]-6\,a^{12}\,(c+d\,x)\,\mathrm{Sin}[2\,(c+d\,x)]+18\,a^{10}\,b^2\,(c+d\,x)\,\mathrm{Sin}[2\,(c+d\,x)]+102\,a^8\,b^4\,(c+d\,x)\,\mathrm{Sin}[2\,(c+d\,x)]-18\,a^6\,b^6\,(c+d\,x)\,\mathrm{Sin}[2\,(c+d\,x)]-9\,a^{11}\,b\,\mathrm{Sin}[4\,(c+d\,x)]-33\,a^9\,b^3\,\mathrm{Sin}[4\,(c+d\,x)]-132\,a^7\,b^5\,\mathrm{Sin}[4\,(c+d\,x)]-172\,a^5\,b^7\,\mathrm{Sin}[4\,(c+d\,x)]-79\,a^3\,b^9\,\mathrm{Sin}[4\,(c+d\,x)]-15\,a\,b^{11}\,\mathrm{Sin}[4\,(c+d\,x)]-3\,a^{12}\,(c+d\,x)\,\mathrm{Sin}[4\,(c+d\,x)]+27\,a^{10}\,b^2\,(c+d\,x)\,\mathrm{Sin}[4\,(c+d\,x)]-57\,a^8\,b^4\,(c+d\,x)\,\mathrm{Sin}[4\,(c+d\,x)]+9\,a^6\,b^6\,(c+d\,x)\,\mathrm{Sin}[4\,(c+d\,x)]\big)$$

Problem 495: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{3+5\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 31 leaves, 2 steps):

$$\frac{3\,x}{34}+\frac{5\,\mathrm{Log}[3\,\mathrm{Cos}[c+d\,x]+5\,\mathrm{Sin}[c+d\,x]]}{34\,d}$$

Result (type 3, 67 leaves):

$$\frac{3\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]}{34\,d}+\frac{5\,\mathrm{Log}[3+5\,\mathrm{Tan}[c+d\,x]]}{34\,d}-\frac{5\,\mathrm{Log}\big[34-6\,(3+5\,\mathrm{Tan}[c+d\,x])+(3+5\,\mathrm{Tan}[c+d\,x])^2\big]}{68\,d}$$

Problem 499: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{5+3\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 31 leaves, 2 steps):

$$\frac{5\,x}{34}+\frac{3\,\mathrm{Log}[5\,\mathrm{Cos}[c+d\,x]+3\,\mathrm{Sin}[c+d\,x]]}{34\,d}$$

Result (type 3, 67 leaves):

$$\frac{5\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]}{34\,d}+\frac{3\,\mathrm{Log}[5+3\,\mathrm{Tan}[c+d\,x]]}{34\,d}-\frac{3\,\mathrm{Log}\left[34-10\,\left(5+3\,\mathrm{Tan}[c+d\,x]\right)+\left(5+3\,\mathrm{Tan}[c+d\,x]\right)^2\right]}{68\,d}$$

Problem 503: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Tan}[c+d\,x]^4\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 456 leaves, 14 steps):

$$\frac{b\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-\frac{b\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+$$
$$\left(b\,\mathrm{Log}\left[a+\sqrt{a^2+b^2}+b\,\mathrm{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right]\right)\Big/$$
$$\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-$$
$$\left(b\,\mathrm{Log}\left[a+\sqrt{a^2+b^2}+b\,\mathrm{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right]\right)\Big/$$
$$\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\frac{2\,\left(8\,a^2-35\,b^2\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}{105\,b^3\,d}-$$
$$\frac{8\,a\,\mathrm{Tan}[c+d\,x]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}{35\,b^2\,d}+\frac{2\,\mathrm{Tan}[c+d\,x]^2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}{7\,b\,d}$$

Result (type 3, 167 leaves):

$$\frac{1}{105\,d}\left(-105\,i\,\sqrt{a-i\,b}\;\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]+105\,i\,\sqrt{a+i\,b}\;\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]+\frac{1}{b^3}2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\left(8\,a^3-38\,a\,b^2-2\,b\left(2\,a^2+25\,b^2\right)\text{Tan}[c+d\,x]+3\,b^2\,\text{Sec}[c+d\,x]^2\left(a+5\,b\,\text{Tan}[c+d\,x]\right)\right)\right)$$

Problem 505: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 382 leaves, 12 steps):

$$-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\frac{2\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{3\,b\,d}$$

Result (type 3, 113 leaves):

$$\frac{1}{3\,b\,d}\left(3\,i\,\sqrt{a-i\,b}\;b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]-3\,i\,\sqrt{a+i\,b}\;b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]+2\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 507: Result unnecessarily involves imaginary or complex numbers.

$$\int \sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 358 leaves, 11 steps):

$$\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)$$

Result (type 3, 87 leaves):

$$-\frac{1}{d}\,\mathrm{i}\left(\sqrt{a-\mathrm{i}\,b}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]-\sqrt{a+\mathrm{i}\,b}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]\right)$$

Problem 508: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 116 leaves, 11 steps):

$$-\frac{2\,\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{d}+$$

$$\frac{\sqrt{a-\mathrm{i}\,b}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}+\frac{\sqrt{a+\mathrm{i}\,b}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}$$

Result (type 4, 9114 leaves):

$$-\left(\left(4\,\text{Csc}[c+d\,x]\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$a\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\left.\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right)\Bigg/$$

$$\left(d\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right.$$

$$\left(\frac{1}{\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,(a+b\operatorname{Tan}[c+d x])^2}4 b\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$a\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)\operatorname{Sec}[c+d x]^{5/2}$$

$$\sqrt{a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]}\,\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,-$$

$$\left(2\left(a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-(a-i\,b)\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$a\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}$$

$$(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.(a+b\,\text{Tan}[c+d\,x])\right)-\frac{1}{\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,(a+b\,\text{Tan}[c+d\,x])}$$

$$2\left(a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$a\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathbb{i}\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\;+$$

$$\frac{1}{\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

$$2\left(a\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-$$

$$a\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-\mathrm{i}\,b\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+a\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)-$$

$$\Bigg(2\Bigg(a\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-$$

$$a\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-i\,b\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+a\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\Bigg(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-$$

$$\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \left(a+b\,\text{Tan}[c+d\,x]\right)\Bigg)-$$

$$\Bigg(2\Bigg(a\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - (a - i\, b)\ \text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] -$$

$$a\ \text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - i\, b\ \text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + a\ \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}+\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ (a+b\,\text{Tan}[c+d\,x])\right) -$$

$$\frac{1}{\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}$$

$$4\,\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\Bigg(\Bigg(a\,\Bigg(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(2\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{\Bigg(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Bigg)\Bigg)-$$

$$\Bigg(a\,\Bigg(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\Bigg(\left(-a+b+\sqrt{a^2+b^2}\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Big/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg)\Bigg)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right/}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)-$$

$$\left(i\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right/}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)-$$

$$\left((a-i\,b)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\Bigg(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{\mathrm{i}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\Big(1-\Big(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/}$$

$$\Big(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big)\Bigg)+$$

$$\Bigg(a\Bigg(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\Big(\Big(\left(-a+b+\sqrt{a^2+b^2}\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/$$

$$\Big(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\Big)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg(1-$$

$$\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\Bigg)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\Big(1-\Big(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/}$$

$$\Big(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 509: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 415 leaves, 16 steps):

$$-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,d}-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-\frac{\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 15 174 leaves):

$$-\frac{\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}-$$

$$\left(2\left(b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2 b$$

$$\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2 i a \,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$2 b \,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b \,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{b \,\text{Cos}[2(c+d x)] \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-\frac{a \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \,\text{Sin}[2(c+d x)]}{2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2 b \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}} \sqrt{a+b \,\text{Tan}[c+d x]}\right) \Bigg/$$

$$\left(d\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)$$

$$\left(\left(2\left(b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)\left(-1+\text{Tan}\left[\right.\right.$$

$$\frac{1}{2}\left(c+d x\right)\Big]\Big)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}$$

$$\left(-b\operatorname{Sec}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2+a\operatorname{Sec}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)$$

$$\left.\sqrt{\frac{1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2}{1-\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2}}\sqrt{\frac{a+2 b\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]-a\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2}{1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2}}\right)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}\right.$$

$$\left.\left(-2 b\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]+a\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]^2\right)\right)^2\right)-$$

$$\Bigg(\Bigg(b\operatorname{EllipticF}\Bigg[\operatorname{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+$$

$$b\operatorname{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\operatorname{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,i\,a\operatorname{EllipticPi}\Bigg[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2 b\operatorname{EllipticPi}\Bigg[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\Big[\frac{1}{2}\left(c+d x\right)\Big]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2\,i\,a\operatorname{EllipticPi}\Bigg[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,b\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(\Bigg(b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;],\;\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}] - 2\,b\,\text{EllipticPi}[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\;\text{ArcSin}[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}] + 2\,i\,a\,\text{EllipticPi}[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\;\text{ArcSin}[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;],\;\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}] - 2\,b\,\text{EllipticPi}[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\;\text{ArcSin}[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}] + b\,\text{EllipticPi}[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;],\;\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}]\Bigg)$$

$$\text{Sec}[\frac{1}{2}(c+d\,x)]^2\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}[\frac{1}{2}(c+d\,x)]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}[\frac{1}{2}(c+d\,x)]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}\;\sqrt{\frac{1+\text{Tan}[\frac{1}{2}(c+d\,x)]^2}{1-\text{Tan}[\frac{1}{2}(c+d\,x)]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}[\frac{1}{2}(c+d\,x)]-a\,\text{Tan}[\frac{1}{2}(c+d\,x)]^2}{1+\text{Tan}[\frac{1}{2}(c+d\,x)]^2}}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]\right)}}$$

$$\left(-2\,b\,\text{Tan}[\frac{1}{2}(c+d\,x)]+a\left(-1+\text{Tan}[\frac{1}{2}(c+d\,x)]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,b\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,i\,a\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,b\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\right)^{3/2}\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\right.\right.$$

$$\left.\left.a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\;\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}+\right.$$

$$\left.\left.\frac{\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2\,b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$b\operatorname{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a\operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\operatorname{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a\operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,b\operatorname{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\Bigg(\Bigg(b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,\mathrm{i}\,a\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,b\,\text{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 2\,\mathrm{i}\,a\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,b\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}-$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)^2\Bigg)\Bigg)\Bigg/\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}}\right.$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}}$$

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\right)\right)-$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}}$$

$$\left(\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{1}{2}\left(c+d x\right)\right]\right)^2\right)\right)\right)\Bigg/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)}}\ \sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\right.\right.}$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\right)\Big/$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)\right)+$$

$$\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)\right)+$$

$$\left(i\,a\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg)\Bigg) -$$

$$\Bigg(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\Bigg(\Bigg(-a+b+\sqrt{a^2+b^2}\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Bigg/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg)\Bigg) -$$

$$\Bigg(i\,a\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\Bigg(\Bigg(-a+b+\sqrt{a^2+b^2}\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Bigg/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right) -$$

$$\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right) +$$

$$\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\right.\right.$$

$$\left.\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\right.\right.$$

$$\left.\left.\left.\left.a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\right)$$

Problem 510: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^3\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 189 leaves, 13 steps):

$$\frac{\left(8\,a^2+b^2\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,a^{3/2}\,d}-$$

$$\frac{\sqrt{a-i\,b}\,\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-\frac{\sqrt{a+i\,b}\,\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-$$

$$\frac{b\,\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,a\,d}-\frac{\text{Cot}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{2\,d}$$

Result (type 4, 17 131 leaves):

$$\frac{\left(\frac{1}{2}-\frac{b\,\text{Cot}[c+d\,x]}{4\,a}-\frac{1}{2}\,\text{Csc}[c+d\,x]^2\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+$$

$$\left(\left(\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(8\,a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2$$

$$\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2$$

$$\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8\,a^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{a\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{b^2\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{8\,a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\frac{b\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2(c+d\,x)]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left.\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/$$

$$\Bigg(2\,a\,d\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)$$

$$\Bigg(-\Bigg(\Bigg(\Bigg(-b^2\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(8\,a^2+b^2\right)\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\mathrm{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a\,b\,\mathrm{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,i\,a\,b\,\text{EllipticPi}\Bigg[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+8\,a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)\ \Bigg(-1+\operatorname{Tan}\Bigg[$$

$$\frac{1}{2}(c+d x)\Bigg]\Bigg)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-b\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2+a\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\ \sqrt{\frac{a+2\,b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(2\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(\Bigg(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$\left(8\,a^2+b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\Bigg[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+8\,i\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,i\,a\,b\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,a^2\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\mathrm{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)\Big/$$

$$\left(4\,a\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2+b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 8\,\mathrm{i}\,a\,b\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(4\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg) -$$

$$\Bigg(\Bigg(-b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] +$$

$$\left(8\,a^2+b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8 a^2\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a\,b\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8 a^2\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8 a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(4\,a\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\right)^{3/2}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-$$

$$\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(4\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(-b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(8\,a^2+b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a\,b\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\;\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}+\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2}\right)\right)\Big/$$

$$\left(4\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}+\Bigg(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg)\Big/$$

$$\left(4\,a\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\,\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\left(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2+b^2\right)\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,\mathbb{i}\,a\,b\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,\mathbb{i}\,a\,b\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}-$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)\Bigg)\Bigg/\Bigg(4\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(-\left(\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\right.\right.\right.\right.\right.$$

$$\left.\frac{1}{2}\,(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Big)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\right.\right.\right.$$

$$\left.\left.\left.\left.\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\right)\Big/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\ \sqrt{\left(1-\right.}$$

$$\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\right)+$$

$$\left(4\,a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg)\Bigg)+$$

$$\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg)\Bigg)-$$

$$\left(4a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Bigg)\Bigg)-$$

$$\left(4\,\mathrm{i}\,a\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1-\frac{\mathrm{i}\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Bigg)\Bigg)-$$

$$\left(4\,a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1+\frac{\mathrm{i}\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg)\Bigg)+$$

$$\left(4\,i\,a\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\Bigg)+$$

$$\left(\left(8\,a^2+b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\right.\right.$$

$$\left.\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)}\Bigg/$$

$$\left(2\,a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Bigg)\Bigg)$$

Problem 511: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 209 leaves, 11 steps):

$$-\frac{i\,(a-i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}+\frac{i\,(a+i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}+\frac{2\,b\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+\frac{2\,(8\,a^2-63\,b^2)\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{315\,b^3\,d}-\frac{8\,a\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{63\,b^2\,d}+\frac{2\,\text{Tan}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{9\,b\,d}$$

Result (type 3, 425 leaves):

$$-\left(\left(\left(\mathrm{i}\left(a^2-b^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^2\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right)\right)-$$

$$\left(2\,a\,b\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^2\right)\Big/$$

$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right)+$$

$$\left(\text{Cos}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\left(\frac{2\left(8\,a^4-66\,a^2\,b^2+413\,b^4\right)}{315\,b^3}+\frac{2\left(3\,a^2-133\,b^2\right)\text{Sec}[c+d\,x]^2}{315\,b}+\right.\right.$$

$$\frac{2}{9}\,b\,\text{Sec}[c+d\,x]^4-\frac{8\,\text{Sec}[c+d\,x]\left(a^3\,\text{Sin}[c+d\,x]+44\,a\,b^2\,\text{Sin}[c+d\,x]\right)}{315\,b^2}+$$

$$\left.\left.\frac{20}{63}\,a\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)$$

Problem 512: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 181 leaves, 12 steps):

$$\frac{(a-\mathrm{i}\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}+\frac{(a+\mathrm{i}\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}-$$

$$\frac{2\,a\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}-\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}-$$

$$\frac{4\,a\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{35\,b^2\,d}+\frac{2\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{7\,b\,d}$$

Result (type 3, 391 leaves):

$$-\left(\left(2\,i\,a\,b\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\text{Cos}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^2\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right)\right)+$$

$$\left((a^2-b^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\text{Cos}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^2\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right)+$$

$$\left(\text{Cos}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\left(-\frac{4\,a\,(3\,a^2+82\,b^2)}{105\,b^2}+\frac{16}{35}\,a\,\text{Sec}[c+d\,x]^2-\frac{2\,\text{Sec}[c+d\,x]\,(-3\,a^2\,\text{Sin}[c+d\,x]+50\,b^2\,\text{Sin}[c+d\,x])}{105\,b}+\frac{2}{7}\,b\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)$$

Problem 513: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 135 leaves, 9 steps):

$$\frac{i\,(a-i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-\frac{i\,(a+i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{2\,b\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{5\,b\,d}$$

Result (type 3, 285 leaves):

$$\left(\text{Cos}[c+d\,x]^2\left(5\,\mathrm{i}\,\left(a^2-b^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^2+10\,a\,b\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^2+\frac{1}{b}2\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(a^2-6\,b^2+b^2\,\text{Sec}[c+d\,x]^2+2\,a\,b\,\text{Tan}[c+d\,x]\right)\right)\right)\Big/\left(5\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)$$

Problem 514: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 3, 128 leaves, 9 steps):

$$-\frac{\left(a-\mathrm{i}\,b\right)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}-\frac{\left(a+\mathrm{i}\,b\right)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}+\frac{2\,a\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+\frac{2\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{3\,d}$$

Result (type 3, 289 leaves):

$$\left(\text{Cos}[c+d x]\right.$$

$$\left(2 \, i \, a \, b \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}} - \frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \text{Cos}[c+d x] \, (a+b \, \text{Tan}[c+d x])^2 - \right.$$

$$(a^2-b^2) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}} + \frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \text{Cos}[c+d x]$$

$$(a+b \, \text{Tan}[c+d x])^2 + \frac{2}{3} (a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x]) \, (a+b \, \text{Tan}[c+d x])^{3/2}$$

$$\left.\left.(4 a + b \, \text{Tan}[c+d x])\right)\right) \Big/ \left(d \, (a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x])^2\right)$$

Problem 515: Result more than twice size of optimal antiderivative.

$$\int (a+b \, \text{Tan}[c+d x])^{3/2} \, dx$$

Optimal (type 3, 111 leaves, 8 steps):

$$-\frac{i \, (a-i b)^{3/2} \, \text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d} + \frac{i \, (a+i b)^{3/2} \, \text{ArcTanh}\left[\frac{\sqrt{a+b \, \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d} + \frac{2 b \sqrt{a+b \, \text{Tan}[c+d x]}}{d}$$

Result (type 3, 276 leaves):

$$\left(\text{Cos}[c+d\,x]\left(2\,b\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{3/2}-\right.\right.$$

$$i\,(a^2-b^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\text{Cos}[c+d\,x]$$

$$(a+b\,\text{Tan}[c+d\,x])^2-2\,a\,b\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)$$

$$\left.\left.\text{Cos}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^2\right)\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right)$$

Problem 517: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 149 leaves, 12 steps):

$$-\frac{3\sqrt{a}\,b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{d}+\frac{i\,(a-i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-$$

$$\frac{i\,(a+i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{a\,\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 18 711 leaves):

$$-\frac{a\,\text{Cos}[c+d\,x]\,\text{Cot}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}-$$

$$\left(2\left(a\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^2\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b$$

$$\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,b^2\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a^2$$

$$\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,b^2$$

$$\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{a\,b\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left.(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)\Big/$$

$$\Bigg(d\,\text{Sec}[c+d\,x]^{3/2}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)$$

$$\Bigg(\Bigg(2\,\Bigg(a\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$3\,a\,b\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,i\,a^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4\,a\,b\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,\mathbb{i}\,b^2\,\text{EllipticPi}\Big[$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,\mathbb{i}\,a^2\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4\,a\,b\,\text{EllipticPi}\Big[$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathbb{i}\,b^2\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+3\,a\,b\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\right)-$$

$$\Bigg(\Bigg(a\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4\,a\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$2\,i\,b^2\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 4\,a\,b\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 3\,a\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right) -$$

$$\left(\left(a\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right.\right. +$$

$$3\,a\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,\mathrm{i}\,a^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-4\,a\,b\,\text{EllipticPi}\Bigg[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+$$

$$2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Bigg[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2\,\mathrm{i}\,a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-4\,a\,b\,\text{EllipticPi}\Bigg[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Bigg[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+3\,a\,b\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)\Bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(a\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,b^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4 a b\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2 i b^2\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+3 a b\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\Big/$$

$$\left(\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)^{3/2}\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\right.\right.$$

$$a\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Bigg) -$$

$$\Bigg(\Bigg(a\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,b^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a^2\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,b^2\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+3\,a\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\right)\left(1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+a\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\right)\right)\right)-$$

$$\left(\left(a\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\right.\right.$$

$$3\,a\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathrm{i}\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4\,a\,b\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,\mathrm{i}\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-4\,a\,b\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+3\,a\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}+\right.$$

$$\left.\left.\frac{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\left(a\,b\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$3\,a\,b\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$2\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathrm{i}\,a^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4\,a\,b\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+3\,a\,b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\Bigg(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left.\left.\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\bigg/\left(1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\bigg)\bigg/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right.$$

$$\left.\left(-2 b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(\left(a b \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$3 a b \operatorname{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a^2 \operatorname{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-4 a b \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$2\,\mathbb{i}\,b^2 \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a^2 \operatorname{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 4\,a\,b\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 3\,a\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 - a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2} -$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)\Bigg)\Bigg/\Bigg(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg) -$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\left(a b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\right.\right.}$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\right)+$$

$$\left(3 a b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2 \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}} \left(1-\frac{1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]}{-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right) \left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right)\right/}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right) \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right)\right)\right) +$$

$$\left(\text{i}\, a^2 \left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \text{Sec}\left[\frac{1}{2} (c+d x)\right]^2}{2 \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)} - \left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2} (c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right) \Big/$$

$$\left.\left.\left.\left(2 \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\right)\right) \Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}} \left(1-\frac{\text{i} \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right) \left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right)\right/}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right) \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right)\right)\right) -$$

$$\left(2\, a\, b \left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \text{Sec}\left[\frac{1}{2} (c+d x)\right]^2}{2 \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)} - \left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2} (c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right) \Big/$$

$$\left.\left.\left.\left(2 \left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\right)\right) \Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right/}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)-$$

$$\left(i\, b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right/}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)-$$

$$\left(i\, a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1+\frac{\dot{\imath}\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)-$$

$$\left(2\,a\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\left(1+\frac{\dot{\imath}\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)+$$

$$\left(\dot{\imath}\,b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{\text{i}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(3\,a\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\right.\right.$$

$$\left.\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\right.\right.$$

$$a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 518: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 189 leaves, 13 steps):

$$\frac{\left(8\,a^2-3\,b^2\right)\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,\sqrt{a}\,d}-\frac{(a-i\,b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-\frac{(a+i\,b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{5\,b\,\mathrm{Cot}[c+d\,x]\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{4\,d}-\frac{a\,\mathrm{Cot}[c+d\,x]^2\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{2\,d}$$

Result (type 4, 20475 leaves): Display of huge result suppressed!

Problem 519: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 211 leaves, 13 steps):

$$\frac{(a-i\,b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}+\frac{(a+i\,b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{2\left(a^2-b^2\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}-\frac{2\,a\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{3\,d}-\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}{5\,d}-\frac{4\,a\,(a+b\,\mathrm{Tan}[c+d\,x])^{7/2}}{63\,b^2\,d}+\frac{2\,\mathrm{Tan}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^{7/2}}{9\,b\,d}$$

Result (type 3, 436 leaves):

$$\left(\mathrm{i}\left(-3a^2b+b^3\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.$$

$$\left.\mathrm{Cos}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\right)+$$

$$\left(\left(a^3-3\,a\,b^2\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\mathrm{Cos}[c+d\,x]^3\right.$$

$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^3\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\right)+$$

$$\left(\mathrm{Cos}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\left(-\frac{2\left(10\,a^4+558\,a^2\,b^2-413\,b^4\right)}{315\,b^2}+\frac{2}{315}\left(75\,a^2-133\,b^2\right)\right.\right.$$

$$\mathrm{Sec}[c+d\,x]^2+\frac{2}{9}\,b^2\,\mathrm{Sec}[c+d\,x]^4+\frac{2\,\mathrm{Sec}[c+d\,x]\left(5\,a^3\,\mathrm{Sin}[c+d\,x]-326\,a\,b^2\,\mathrm{Sin}[c+d\,x]\right)}{315\,b}+$$

$$\left.\left.\frac{38}{63}\,a\,b\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right)$$

Problem 520: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,\mathrm{d}x$$

Optimal (type 3, 158 leaves, 10 steps):

$$\frac{\mathrm{i}\,(a-\mathrm{i}\,b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}-\frac{\mathrm{i}\,(a+\mathrm{i}\,b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}-$$

$$\frac{4\,a\,b\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}-\frac{2\,b\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{3\,d}+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{7/2}}{7\,b\,d}$$

Result (type 3, 404 leaves):

$$\left(i\left(a^3-3ab^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\right.$$

$$\left.\text{Cos}[c+dx]^3\left(a+b\,\text{Tan}[c+dx]\right)^3\right)\Big/\left(d\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\right)+$$

$$\left(\left(3a^2b-b^3\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\right.$$

$$\left.\text{Cos}[c+dx]^3\left(a+b\,\text{Tan}[c+dx]\right)^3\right)\Big/$$

$$\left(d\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^3\right)+\left(\text{Cos}[c+dx]^2\left(a+b\,\text{Tan}[c+dx]\right)^{5/2}\right.$$

$$\left(\frac{2a\left(3a^2-58b^2\right)}{21b}+\frac{6}{7}ab\,\text{Sec}[c+dx]^2+\frac{2}{21}\text{Sec}[c+dx]\left(9a^2\,\text{Sin}[c+dx]-10b^2\,\text{Sin}[c+dx]\right)+\right.$$

$$\left.\left.\frac{2}{7}b^2\,\text{Sec}[c+dx]^2\,\text{Tan}[c+dx]\right)\right)\Big/\left(d\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)^2\right)$$

Problem 521: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+dx]\left(a+b\,\text{Tan}[c+dx]\right)^{5/2}dx$$

Optimal (type 3, 158 leaves, 10 steps):

$$-\frac{(a-i b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a-i b}}\right]}{d}-\frac{(a+i b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+dx]}}{\sqrt{a+i b}}\right]}{d}+$$

$$\frac{2\left(a^2-b^2\right)\sqrt{a+b\,\text{Tan}[c+dx]}}{d}+\frac{2a\left(a+b\,\text{Tan}[c+dx]\right)^{3/2}}{3d}+\frac{2\left(a+b\,\text{Tan}[c+dx]\right)^{5/2}}{5d}$$

Result (type 3, 358 leaves):

$$-\left(\left(\left(\mathrm{i}\left(-3a^2b+b^3\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.\right.\right.$$

$$\left.\left.\text{Cos}[c+d\,x]^3\left(a+b\,\text{Tan}[c+d\,x]\right)^3\right)\Big/\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right)\right)-$$

$$\left(\left(a^3-3ab^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^3\right.$$

$$\left.\left(a+b\,\text{Tan}[c+d\,x]\right)^3\right)\Big/\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Cos}[c+d\,x]^2\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(\frac{2}{15}\left(23a^2-18b^2\right)+\frac{2}{5}b^2\,\text{Sec}[c+d\,x]^2+\right.\right.$$

$$\left.\left.\frac{22}{15}a\,b\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)$$

Problem 522: Result more than twice size of optimal antiderivative.

$$\int\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\,\mathrm{d}x$$

Optimal (type 3, 134 leaves, 9 steps):

$$-\frac{\mathrm{i}\left(a-\mathrm{i}\,b\right)^{5/2}\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}+\frac{\mathrm{i}\left(a+\mathrm{i}\,b\right)^{5/2}\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}+$$

$$\frac{4ab\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+\frac{2b\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{3d}$$

Result (type 3, 303 leaves):

$$\frac{1}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3}\text{Cos}[c+d\,x]^2\left(-i\,(a^3-3\,a\,b^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\right.$$
$$\text{Cos}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^3-(3\,a^2\,b-b^3)$$
$$\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\text{Cos}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^3+$$
$$\left.\frac{2}{3}\,b\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(7\,a+b\,\text{Tan}[c+d\,x])\right)$$

Problem 523: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 138 leaves, 12 steps):

$$-\frac{2\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{d}+\frac{(a-i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}+\frac{(a+i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}+\frac{2\,b^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 22 189 leaves): Display of huge result suppressed!

Problem 524: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 151 leaves, 12 steps):

$$-\frac{5\,a^{3/2}\,b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{d}+\frac{i\,(a-i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-\frac{i\,(a+i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{a^2\,\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 22 262 leaves) : Display of huge result suppressed!

Problem 525: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)^{5/2} dx$$

Optimal (type 3, 192 leaves, 13 steps) :

$$\frac{\sqrt{a} \left(8 a^2-15 b^2\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 d}-\frac{\left(a-i b\right)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}-\frac{\left(a+i b\right)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}-\frac{9 a b \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 d}-\frac{a^2 \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{2 d}$$

Result (type 4, 23 938 leaves) : Display of huge result suppressed!

Problem 526: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^4 \left(a+b \text{Tan}[c+d x]\right)^{5/2} dx$$

Optimal (type 3, 237 leaves, 14 steps) :

$$\frac{5 b \left(8 a^2-b^2\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{8 \sqrt{a} d}-\frac{i \left(a-i b\right)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}+\frac{i \left(a+i b\right)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}+\frac{\left(8 a^2-11 b^2\right) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{8 d}-\frac{13 a b \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{12 d}-\frac{a^2 \text{Cot}[c+d x]^3 \sqrt{a+b \text{Tan}[c+d x]}}{3 d}$$

Result (type 4, 24 036 leaves) : Display of huge result suppressed!

Problem 527: Result more than twice size of optimal antiderivative.

$$\int \left(a+b \text{Tan}[c+d x]\right)^{7/2} dx$$

Optimal (type 3, 167 leaves, 10 steps) :

$$-\frac{i\,(a-i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}+\frac{i\,(a+i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}+$$
$$\frac{2\,b\,(3\,a^2-b^2)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}+\frac{4\,a\,b\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}+\frac{2\,b\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{5\,d}$$

Result (type 3, 369 leaves):

$$-\left(\left(i\,(a^4-6\,a^2\,b^2+b^4)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\right.\right.$$
$$\left.\left.\text{Cos}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^4\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)\right)-$$
$$\left((4\,a^3\,b-4\,a\,b^3)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)\text{Cos}[c+d\,x]^4\right.$$
$$\left.(a+b\,\text{Tan}[c+d\,x])^4\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\right)+$$
$$\left(\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^{7/2}\left(\frac{4}{15}\,b\,(29\,a^2-9\,b^2)+\frac{2}{5}\,b^3\,\text{Sec}[c+d\,x]^2+\right.\right.$$
$$\left.\left.\frac{32}{15}\,a\,b^2\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right)$$

Problem 529: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d\,x]^4}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 500 leaves, 14 steps):

$$\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\frac{2\left(8\,a^2-15\,b^2\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,b^3\,d}-$$

$$\frac{8\,a\,\text{Tan}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,b^2\,d}+\frac{2\,\text{Tan}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{5\,b\,d}$$

Result (type 3, 144 leaves):

$$\frac{1}{d}\left(-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}+\frac{1}{15\,b^3}\right.$$

$$\left.2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(8\,a^2-18\,b^2+3\,b^2\,\text{Sec}[c+d\,x]^2-4\,a\,b\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 531: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\text{Tan}[c+d\,x]^2}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 424 leaves, 12 steps):

$$-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\frac{2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{b\,d}$$

Result (type 3, 108 leaves) :

$$\frac{\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}+\frac{2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{b}}{d}$$

Problem 533: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 402 leaves, 11 steps) :

$$\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)$$

Result (type 3, 87 leaves):

$$-\frac{i\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\sqrt{a-i\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\sqrt{a+i\,b}}\right)}{d}$$

Problem 535: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]^2}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 461 leaves, 17 steps):

$$\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{3/2}\,d}-\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+$$

$$\frac{b\,\text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a-\sqrt{a^2+b^2}}\,d}+$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]-\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-$$

$$\left(b\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-\frac{\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{a\,d}$$

Result (type 4, 10 891 leaves):

$$-\frac{\text{Csc}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}-\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a$$

$$\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\ \text{Sec}[c+d\,x]$$

$$\left(-\frac{b\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\,a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[2\,(c+d\,x)]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\Bigg/$$

$$\left(a\,d\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left(-\left(1\Bigg/\left(a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\right)\right)$$

$$\left(-b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\right.$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,i\,a\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ -$$

$$\left(1\Big/\left(a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\right)$$

$$\Bigg(-b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,\mathrm{i}\,a\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathrm{i}\,a\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}+$$

$$\left(1\Bigg/\left(a\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\right)$$

$$\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\Bigg(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,i\,a\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;+$$

$$\left(1\Bigg/\left(a\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\right[$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;-$$

$$\left(1\Big/\left(a\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right)\right)$$

$$\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;+$$

$$\left(1\Big/\left(a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)^{3/2}\right)\right)$$

$$\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)-\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.$$

$$b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Big/$$

$$\left(a\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg) - \Bigg(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\Bigg(-b\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$b\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\Bigg(\frac{a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}+$$

$$\left.\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\Bigg)\Bigg)\Bigg/$$

$$\left(a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)-$$

$$\left(1\Big/\left(a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-\left(\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\left(1-\right.}$$

$$\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)+$$

$$\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\Bigg)\Bigg/$$

$$\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\right)\Bigg) -$$

$$\left(i\,a\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\Bigg)\Bigg/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right.$$

$$\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\right)\Bigg) +$$

$$\left(i\,a\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\Bigg)\Bigg/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\Bigg)\Bigg)\Bigg)\Bigg/\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left(1+\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right/}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\Bigg)+$$

$$\left(b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\right.\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left(1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\left(1-\right.}$$

$$\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg/\left(\left(a-\sqrt{a^2+b^2}\right)\right.$$

$$\left.\left.\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\Bigg)\sqrt{a+b\operatorname{Tan}[c+d x]}\Bigg)$$

Problem 536: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\operatorname{Cot}[c+d x]^3}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 194 leaves, 14 steps):

$$\frac{\left(8 a^2-3 b^2\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{5/2} d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}\, d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}\, d}+\frac{3 b \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 a^2 d}-\frac{\text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{2 a d}$$

Result (type 4, 13 850 leaves) :

$$\left(\left(\frac{1}{2 a}+\frac{3 b \text{Cot}[c+d x]}{4 a^2}-\frac{\text{Csc}[c+d x]^2}{2 a}\right) \text{Sec}[c+d x] \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)\right) \Big/ \left(d \sqrt{a+b \text{Tan}[c+d x]}\right)+$$

$$\left(\left(3 b^2 \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8 a^2-3 b^2\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2$$

$$\text{EllipticPi}\left[-\frac{i \left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 \text{EllipticPi}\left[\frac{i \left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8 a^2 \text{EllipticPi}\left[\right.$$

$$\left.\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$3 b^2 \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right],\right.$$

$$\left.\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\, \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}$$

$$\left(-\frac{\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+\frac{3 b^2 \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{8 a^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\right.$$

$$\frac{\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\;\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(2\,a^2\,d\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)$$

$$\Bigg(-\Bigg(\Bigg(\Bigg(3\,b^2\,\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+$$

$$\left(8\,a^2-3\,b^2\right)\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^2\,\text{EllipticPi}\Bigg[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+8\,a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 3\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\Big(-1+\text{Tan}\Big[$$

$$\frac{1}{2}(c+d\,x)\Big]\Big)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\;\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(2\,a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(\Bigg(3\,b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(8\,a^2-3\,b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(4\,a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(3\,b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(8\,a^2-3\,b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 8 a^2 \text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 8 a^2 \text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 3 b^2 \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Big/$$

$$\Bigg(4 a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg) -$$

$$\Bigg(\Bigg(3 b^2 \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right] +$$

$$\left(8 a^2-3 b^2\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 \text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8 a^2 \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3 b^2 \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right)\right)\Big/$$

$$\left(4\,a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}\right)^{3/2}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\left(3\,b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2-3\,b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.$$

$$\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(4\,a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(3\,b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(8\,a^2-3\,b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}+\right.$$

$$\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\Bigg)\Big/$$

$$\left(4\,a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\Bigg(\Bigg(3\,b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(8\,a^2-3\,b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Big/$$

$$\left(4 a^2 \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}} \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\left(-2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\Bigg(\Bigg(3 b^2 \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$\left(8 a^2-3 b^2\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 \text{EllipticPi}\Bigg[$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8 a^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8 a^2 \text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3 b^2 \text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}-\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Bigg/\left(4 a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\Bigg(\Bigg(3\,b^2\,\Bigg(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\Bigg(\Bigg(-a+b+\sqrt{a^2+b^2}\Bigg)$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Big/\Bigg(2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\Bigg(-1+\mathrm{Tan}\Big[$$

$$\frac{1}{2}\,(c+d\,x)\Big]\Bigg)^2\Bigg)\Bigg)\Bigg/\Bigg(2\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\sqrt{\Bigg(1-\Bigg(\Bigg(a+\sqrt{a^2+b^2}\Bigg)}$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Big/$$

$$\Bigg(\left(a-\sqrt{a^2+b^2}\right)\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(4\,a^2\,\Bigg(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\Bigg(\Bigg(-a+b+\sqrt{a^2+b^2}\Bigg)$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Big/$$

$$\left(2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{\Bigg(1-\Bigg(\left(a+\sqrt{a^2+b^2}\right)\,\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Big/}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg)\Bigg) -$$

$$\left(3\,b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\Bigg) -$$

$$\left(4\,a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{i\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg)\Bigg) -$$

$$\left(4 a^2 \left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)} - \left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right) +$$

$$\left(\left(8 a^2-3 b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)} -\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left(1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)}\Bigg)\Bigg)\Bigg/$$

$$\left(2\,a^2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)$$

Problem 538: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^4}{(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 226 leaves, 10 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{(a-i\,b)^{3/2}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{(a+i\,b)^{3/2}\,d}-\frac{2\,a^2\,\text{Tan}[c+d\,x]^2}{b\left(a^2+b^2\right)d\sqrt{a+b\,\text{Tan}[c+d\,x]}}-\frac{2\,a\left(8\,a^2+5\,b^2\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,b^3\left(a^2+b^2\right)d}+\frac{2\left(4\,a^2+b^2\right)\text{Tan}[c+d\,x]\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,b^2\left(a^2+b^2\right)d}$$

Result (type 3, 472 leaves):

$$\left(\text{Sec}[c+d x]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2 \left(-\frac{2 a \left(8 a^2+5 b^2\right)}{3 (a-\mathrm{i} b) (a+\mathrm{i} b) b^3}+\right.\right.$$

$$\left.\left.\frac{2 a^3 \text{Sin}[c+d x]}{(a-\mathrm{i} b) (a+\mathrm{i} b) b^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}+\frac{2 \text{Tan}[c+d x]}{3 b^2}\right)\right) \Big/$$

$$\left(d \left(a+b \text{Tan}[c+d x]\right)^{3/2}\right)+\left(\text{Sec}[c+d x]^{3/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{3/2}\right.$$

$$\left(-\left(\left(\mathrm{i} a \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/\right.\right.$$

$$\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)+$$

$$\left(b \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/$$

$$\left.\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right) \Big/$$

$$\left((a-\mathrm{i} b) (a+\mathrm{i} b) d \left(a+b \text{Tan}[c+d x]\right)^{3/2}\right)$$

Problem 543: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]}{\left(a+b \text{Tan}[c+d x]\right)^{3/2}} \, dx$$

Optimal (type 3, 150 leaves, 12 steps):

$$-\frac{2 \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{3/2} d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{(a-\mathrm{i} b)^{3/2} d}+$$

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{(a+\mathrm{i} b)^{3/2} d}+\frac{2 b^2}{a \left(a^2+b^2\right) d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 17 416 leaves):

$$\left(\text{Sec}[c+d x]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2\right.$$

$$\left(\frac{2\,b^2}{a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}-\frac{2\,b^3\,\mathrm{Sin}[c+d\,x]}{a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\bigg)\bigg/$$
$$\left(d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\right)-$$
$$\Bigg(4\,\Bigg(-b^2\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$
$$\left(a^2+b^2\right)\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},$$
$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-a^2$$
$$\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],$$
$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$
$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-$$
$$a^2\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],$$
$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$
$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$
$$a^2\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],$$
$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$
$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\big(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\big)^{3/2}$$

$$\left(\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{a\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)\Bigg/$$

$$\left(a\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,d\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)$$

$$\left(\left(4\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-a^2\,\mathrm{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-i\,a\,b\,\mathrm{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-a^2\,\mathrm{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+i\,a\,b\,\mathrm{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+a^2\,\mathrm{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\ \Bigg(-1+\mathrm{Tan}\Big[$$

$$\frac{1}{2}(c+d\,x)\Big]\Big)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-b\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\;\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\Bigg)\Big/$$

$$\left(a\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)^2\right)-$$

$$\left(2\,\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,a\,b\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a^2\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right)\Bigg/$$

$$\left(a\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(2\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\right[$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-a^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - \mathrm{i}\, a\, b\, \text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - a^2\, \text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + \mathrm{i}\, a\, b\, \text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + a^2\, \text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + b^2\, \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right)\Big/$$

$$\Bigg(a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(2\,\Bigg(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$\left(a^2+b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+i\,a\,b\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\right)^{3/2}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(2\left(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+\mathrm{i}\,a\,b\,\text{EllipticPi}\Bigg[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+a^2\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-$$

$$\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(2\,\left(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}+\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(a\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(2\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-a^2\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+a^2\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\Big/$$

$$\left(a\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right.$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)-$$

$$\left(2\,\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,a\,b\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+a^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}-$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(a\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\left(4\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-\left(\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\right.\right.\right.\right.\right.\right.$$

$$\left.\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\left(1-\right.}$$

$$\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)+$$

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)-$$

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(i\,a\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)-$$

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1+\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)-$$

$$\left(i\, a\, b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1+\frac{i\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)+$$

$$\left(\left(a^2+b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)}\right)\Big/$$

$$\left(a(a-\text{i} b)(a+\text{i} b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(-2 b\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)(a+b\, \text{Tan}[c+d x])^{3/2}\Bigg)$$

Problem 544: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^2}{(a+b\, \text{Tan}[c+d x])^{3/2}}\, dx$$

Optimal (type 3, 192 leaves, 13 steps):

$$\frac{3 b\, \text{ArcTanh}\left[\frac{\sqrt{a+b\, \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{5/2} d}+\frac{\text{i}\, \text{ArcTanh}\left[\frac{\sqrt{a+b\, \text{Tan}[c+d x]}}{\sqrt{a-\text{i} b}}\right]}{(a-\text{i} b)^{3/2} d}-\frac{\text{i}\, \text{ArcTanh}\left[\frac{\sqrt{a+b\, \text{Tan}[c+d x]}}{\sqrt{a+\text{i} b}}\right]}{(a+\text{i} b)^{3/2} d}-\frac{b\left(a^2+3 b^2\right)}{a^2\left(a^2+b^2\right) d \sqrt{a+b\, \text{Tan}[c+d x]}}-\frac{\text{Cot}[c+d x]}{a d \sqrt{a+b\, \text{Tan}[c+d x]}}$$

Result (type 4, 17 556 leaves):

$$\Bigg(\text{Sec}[c+d x]^2 (a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x])^2$$

$$\left(-\frac{2 b^3}{a^3 (a^2+b^2)}-\frac{\text{Cot}[c+d x]}{a^2}+\frac{2 b^4 \text{Sin}[c+d x]}{a^3 (a-i b) (a+i b) (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}\right)\Bigg)\Bigg/$$

$$\left(d (a+b \text{Tan}[c+d x])^{3/2}\right)-$$

$$\Bigg(2 \Bigg(b (a^2+3 b^2) \text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-$$

$$3 b (a^2+b^2) \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2 i a^3$$

$$\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2 a^2 b \text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2 i a^3$$

$$\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2 a^2 b \text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-$$

$$3 a^2 b \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3 b^3 \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d x]^{3/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{3/2}$$
$$\left(-\frac{b \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{(a-\mathbb{i} b) (a+\mathbb{i} b) \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\frac{3 b^3 \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{2 a^2 (a-\mathbb{i} b) (a+\mathbb{i} b) \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\frac{b \text{Cos}[2 (c+d x)] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]}}{2 (a-\mathbb{i} b) (a+\mathbb{i} b) \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\frac{a \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \text{Sin}[2 (c+d x)]}{2 (a-\mathbb{i} b) (a+\mathbb{i} b) \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right)$$
$$\left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)$$
$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}$$
$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}$$
$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}}$$
$$\left.\sqrt{\frac{a+2 b \text{Tan}\left[\frac{1}{2} (c+d x)\right]-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}}\right) \Bigg/$$
$$\left(a^2 (a-\mathbb{i} b) (a+\mathbb{i} b) d \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right.$$
$$\left.\left(-2 b \text{Tan}\left[\frac{1}{2} (c+d x)\right]+a \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right)\right)$$
$$\left(\left(2 \left(b \left(a^2+3 b^2\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right) \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)}}\right],\right.\right.\right.\right.$$
$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3 b \left(a^2+b^2\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] - 2\,i\,a^3\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] + 2\,a^2\,b\,\text{EllipticPi}\Bigg[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] + 2\,i\,a^3\,\text{EllipticPi}\Bigg[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] + 2\,a^2\,b\,\text{EllipticPi}\Bigg[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] - 3\,a^2\,b\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] - 3\,b^3\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg(-1+\text{Tan}\Bigg[$$

$$\frac{1}{2}(c+d x)\Bigg]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\ \sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)\Bigg/$$

$$\left(a^2\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\right)-$$

$$\Bigg(\Bigg(b\,(a^2+3\,b^2)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,b\,(a^2+b^2)\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a^3\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a^2\,b\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,i\,a^3\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a^2\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,a^2\,b\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3 b^3\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\Big[\frac{1}{2}(c+d x)\Big]^2\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(a^2(a-\mathbb{i} b)(a+\mathbb{i} b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2 b\,\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]+a\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2\right)\right)\Bigg)-$$

$$\Bigg(\Bigg(b\left(a^2+3 b^2\right)\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3 b\left(a^2+b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathbb{i}\,a^3\,\text{EllipticPi}\Big[$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 2\,a^2\,b\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 2\,i\,a^3\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 2\,a^2\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 3\,a^2\,b\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 3\,b^3\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)\Big/$$

$$\Bigg(a^2\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(b\,(a^2+3\,b^2)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b\,(a^2+b^2)\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^3\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a^3\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,a^2\,b\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b^3\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(\left(-a+b+\sqrt{a^2+b^2}\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.\right.$$

$$\left.\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(a^2\,(a-i\,b)\,(a+i\,b)\,\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\right)^{3/2}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\,\left(a^2+3\,b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b\,\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^3\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\text{EllipticPi}\left[-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,i\,a^3\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a^2\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,a^2\,b\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,b^3\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-$$

$$\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a^2\,(a-i\,b)\,(a+i\,b)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\left(a^2+3\,b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^3\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a^3\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,a^2\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b^3\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}+\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Bigg/$$

$$\left(a^2\,(a-i\,b)\,(a+i\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(\left(b\left(a^2+3\,b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a^3\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2 a^2 b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2\, i\, a^3\,\text{EllipticPi}\Bigg[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2 a^2 b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3 a^2 b\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3 b^3\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\Big/$$

$$\left(a^2\,\left(a-\mathbb{i}\,b\right)\,\left(a+\mathbb{i}\,b\right)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right.$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)-$$

$$\left(\left(b\,\left(a^2+3\,b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,b\,\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a^3\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a^3\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a^2\,b\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3 a^2 b\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3 b^3\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\Bigg)$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}-$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg)\Big/$$

$$\Bigg(a^2(a-\mathbb{i}\,b)(a+\mathbb{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\left(2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\left(b\left(a^2+3 b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\right.\right.}$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\right)-$$

$$\left(3 a^2 b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)-$$

$$\left(3\,b^3\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(\mathrm{i}\,a^3\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{\text{i}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right/}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(a^2\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{\text{i}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right/}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)-$$

$$\left(\text{i}\,a^3\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)+$$

$$\left(a^2\,b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)-$$

$$\left(3\,b\left(a^2+b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left(1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$

$$\left(a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 545: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d\,x]^3}{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 241 leaves, 14 steps):

$$\frac{\left(8\,a^2-15\,b^2\right)\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,a^{7/2}\,d}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{(a-\mathrm{i}\,b)^{3/2}\,d}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{(a+\mathrm{i}\,b)^{3/2}\,d}+$$

$$\frac{b^2\left(7\,a^2+15\,b^2\right)}{4\,a^3\left(a^2+b^2\right)d\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}+\frac{5\,b\,\mathrm{Cot}[c+d\,x]}{4\,a^2\,d\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}-\frac{\mathrm{Cot}[c+d\,x]^2}{2\,a\,d\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 19454 leaves):

$$\left(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right.$$

$$\left(\frac{a^4+a^2\,b^2+4\,b^4}{2\,a^4\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}+\frac{7\,b\,\mathrm{Cot}[c+d\,x]}{4\,a^3}-\frac{\mathrm{Csc}[c+d\,x]^2}{2\,a^2}-\right.$$

$$\left.\left.\frac{2\,b^5\,\text{Sin}[c+d\,x]}{a^4\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)+$$

$$\left(\left(b^2\,(7\,a^2+15\,b^2)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+(8\,a^4-7\,a^2\,b^2-15\,b^4)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,\mathbb{i}\,a^3\,b\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,\mathbb{i}\,a^3\,b\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8\,a^4\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-7\,a^2\,b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-15\,b^4\,\text{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\mathrm{Sec}[c+d\,x]^{3/2}\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}$$

$$\left(-\frac{a\,\mathrm{Csc}[c+d\,x]\sqrt{\mathrm{Sec}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+\right.$$

$$\frac{7\,b^2\,\mathrm{Csc}[c+d\,x]\sqrt{\mathrm{Sec}[c+d\,x]}}{8\,a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{15\,b^4\,\mathrm{Csc}[c+d\,x]\sqrt{\mathrm{Sec}[c+d\,x]}}{8\,a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a\,\mathrm{Cos}[2\,(c+d\,x)]\,\mathrm{Csc}[c+d\,x]\sqrt{\mathrm{Sec}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\left.\frac{b\,\mathrm{Csc}[c+d\,x]\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[2\,(c+d\,x)]}{2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)$$

$$\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right)\Bigg/$$

$$\left(2\,a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,d\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)$$

$$\left(-\left(\left(\left(b^2\left(7a^2+15b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\right.\right.\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8a^4-7a^2b^2-15b^4\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8a^4\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a^3\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8a^4\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a^3\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8a^4\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-7a^2b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$15b^4\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\sqrt{\frac{a+2b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\Bigg)\Bigg/$$

$$\Bigg(2a^3(a-\mathrm{i}\,b)(a+\mathrm{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left(-2b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(\Bigg(b^2\left(7a^2+15b^2\right)\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\left(8a^4-7a^2b^2-15b^4\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8a^4\,\text{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,\mathrm{i}\,a^3b\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^4\,\text{EllipticPi}\Big[$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a^3\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$8\,a^4\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-7\,a^2\,b^2\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-15\,b^4\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right)\Big/$$

$$\left(4 a^3 (a-\mathrm{i}\, b)(a+\mathrm{i}\, b) \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left.\left(-2 b\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left(\left(b^2\left(7 a^2+15 b^2\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8 a^4-7 a^2 b^2-15 b^4\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^4\, \text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\, \mathrm{i}\, a^3 b\, \text{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^4\, \text{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\, \mathrm{i}\, a^3 b\, \text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8 a^4\, \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-7 a^2 b^2\, \text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-15\,b^4\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right)\Bigg/$$

$$\left(4\,a^3\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\left(b^2\,(7\,a^2+15\,b^2)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+(8\,a^4-7\,a^2\,b^2-15\,b^4)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\right[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^4\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 8\,\mathrm{i}\,a^3\,b\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 8\,a^4\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 8\,\mathrm{i}\,a^3\,b\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 8\,a^4\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 7\,a^2\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 15\,b^4\,\text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(4\,a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\right)^{3/2}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(b^2\,(7\,a^2+15\,b^2)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+(8\,a^4-7\,a^2\,b^2-15\,b^4)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,\mathrm{i}\,a^3\,b\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4\,\text{EllipticPi}\left[\right.$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,\mathrm{i}\,a^3\,b\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8 a^4 \text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-7 a^2 b^2 \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-15 b^4 \text{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(-\frac{a \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b-\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right) \Big/$$

$$\left(4 a^3 (a-i b)(a+i b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(b^2\left(7\,a^2+15\,b^2\right)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8\,a^4-7\,a^2\,b^2-15\,b^4\right)\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4\,\mathrm{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,\mathbb{i}\,a^3\,b\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,\mathbb{i}\,a^3\,b\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,a^4\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-7\,a^2\,b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-15\,b^4\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}+\right.$$

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\right)\Big/$$

$$\left(4 a^3 (a-\mathrm{i}\, b)(a+\mathrm{i}\, b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left(\left(b^2\left(7 a^2+15 b^2\right)\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\left(8 a^4-7 a^2 b^2-15 b^4\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8 a^4\,\text{EllipticPi}\Big[$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a^3\,b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^4\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a^3\,b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,a^4\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-7\,a^2\,b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-15\,b^4\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\left.\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\left(\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.\right.$$

$$\left.\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\Big/$$

$$\left(4\,a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right.$$

$$\left.\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(b^2\left(7\,a^2+15\,b^2\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+\left(8\,a^4-7\,a^2\,b^2-15\,b^4\right)\mathrm{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^4\,\mathrm{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,\mathrm{i}\,a^3\,b\,\mathrm{EllipticPi}\Bigg[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Bigg],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^4\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,\mathrm{i}\,a^3\,b\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^4\,\mathrm{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-7\,a^2\,b^2\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-15\,b^4\,\mathrm{EllipticPi}\Big[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\ \sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{b\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}-\right.$$

$$\left(\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left.\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\right)\Big/$$

$$\left(4 a^3 (a - i b) (a + i b) \sqrt{\frac{\left(-a + b + \sqrt{a^2 + b^2}\right) \left(1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}{\left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}}\right.$$

$$\sqrt{\frac{a + 2 b \text{Tan}\left[\frac{1}{2} (c + d x)\right] - a \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}{1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}}$$

$$\left.\left(-2 b \text{Tan}\left[\frac{1}{2} (c + d x)\right] + a \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2\right)\right)\right) +$$

$$\left(\left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right) \left(1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)\right.$$

$$\sqrt{\frac{b - \sqrt{a^2 + b^2} - a \text{Tan}\left[\frac{1}{2} (c + d x)\right]}{\left(-a - b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}}$$

$$\sqrt{-\frac{b + \sqrt{a^2 + b^2} - a \text{Tan}\left[\frac{1}{2} (c + d x)\right]}{\left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}} \sqrt{\frac{1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}{1 - \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}}$$

$$\sqrt{\frac{a + 2 b \text{Tan}\left[\frac{1}{2} (c + d x)\right] - a \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}{1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]^2}}$$

$$\left(\left(b^2 (7 a^2 + 15 b^2) \left(\frac{\left(-a + b + \sqrt{a^2 + b^2}\right) \text{Sec}\left[\frac{1}{2} (c + d x)\right]^2}{2 \left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)} -\right.\right.\right.$$

$$\left(\left(-a + b + \sqrt{a^2 + b^2}\right) \text{Sec}\left[\frac{1}{2} (c + d x)\right]^2 \left(1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)\right) \Big/$$

$$\left.\left.\left(2 \left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)^2\right)\right)\right) \Big/$$

$$\left(2 \sqrt{\frac{\left(-a + b + \sqrt{a^2 + b^2}\right) \left(1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}{\left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}}\right.$$

$$\sqrt{1 - \frac{\left(-a + b + \sqrt{a^2 + b^2}\right) \left(1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}{\left(a + b + \sqrt{a^2 + b^2}\right) \left(-1 + \text{Tan}\left[\frac{1}{2} (c + d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)}+$$

$$\left(4\,a^4\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\left.\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)}\right)-$$

$$\left(7\,a^2\,b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\left(1-\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

$$\sqrt{\Bigg(1-\Bigg(\Big(a+\sqrt{a^2+b^2}\Big)\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Big/}$$

$$\Bigg(\Big(a-\sqrt{a^2+b^2}\Big)\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Bigg)\Bigg) -$$

$$\Bigg(15\,b^4\Bigg(\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\,\mathrm{Sec}\big[\frac{1}{2}(c+d\,x)\big]^2}{2\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}-\Bigg(\Big(-a+b+\sqrt{a^2+b^2}\Big)$$

$$\mathrm{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big(1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Big/$$

$$\Bigg(2\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)^2\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(2\sqrt{\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}{\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}}\Bigg(1-\frac{1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]}{-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]}\Bigg)$$

$$\sqrt{1-\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}{\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}}$$

$$\sqrt{\Bigg(1-\Bigg(\Big(a+\sqrt{a^2+b^2}\Big)\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Big/}$$

$$\Bigg(\Big(a-\sqrt{a^2+b^2}\Big)\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Bigg)\Bigg) -$$

$$\Bigg(4\,a^4\Bigg(\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\,\mathrm{Sec}\big[\frac{1}{2}(c+d\,x)\big]^2}{2\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}-\Bigg(\Big(-a+b+\sqrt{a^2+b^2}\Big)$$

$$\mathrm{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big(1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Big/$$

$$\Bigg(2\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)^2\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(\sqrt{\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}{\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}}\Bigg(1-\frac{i\Big(1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}{-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]}\Bigg)$$

$$\sqrt{1-\frac{\Big(-a+b+\sqrt{a^2+b^2}\Big)\Big(1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}{\Big(a+b+\sqrt{a^2+b^2}\Big)\Big(-1+\mathrm{Tan}\big[\frac{1}{2}(c+d\,x)\big]\Big)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)}\;+$$

$$\left(4\,\mathrm{i}\,a^3 b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1-\frac{\mathrm{i}\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\left.\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)}\right)\;-$$

$$\left(4\,a^4\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1+\frac{\mathrm{i}\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)-$$

$$\left(4 i a^3 b\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(1+\frac{i\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)+$$

$$\left(\left(8 a^4-7 a^2 b^2-15 b^4\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

$$\left.\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left(1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a-b-\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\Big/$$

$$\left(2 a^3 (a-i b)(a+i b)\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\left.\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)(a+b$$

$$\left.\text{Tan}[c+d x])^{3/2}\right)$$

Problem 547: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d x]^4}{(a+b\,\text{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 226 leaves, 10 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{5/2} d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{5/2} d}-\frac{2 a^2\,\text{Tan}[c+d x]^2}{3 b\left(a^2+b^2\right) d\,(a+b\,\text{Tan}[c+d x])^{3/2}}+$$

$$\frac{4 a^3\left(2 a^2+5 b^2\right)}{3 b^3\left(a^2+b^2\right)^2 d\sqrt{a+b\,\text{Tan}[c+d x]}}+\frac{2\left(4 a^2+3 b^2\right)\sqrt{a+b\,\text{Tan}[c+d x]}}{3 b^3\left(a^2+b^2\right) d}$$

Result (type 3, 541 leaves):

$$\left(\text{Sec}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$
$$\left.\left(\frac{2\,\left(8\,a^4+18\,a^2\,b^2+3\,b^4\right)}{3\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,b^3}-\frac{2\,a^4}{3\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-\frac{8\,\left(a^4\,\text{Sin}[c+d\,x]+3\,a^2\,b^2\,\text{Sin}[c+d\,x]\right)}{3\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,b^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\right)\Big/$$
$$\left(d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)+\left(\text{Sec}[c+d\,x]^{5/2}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{5/2}\right.$$
$$\left(-\left(\left(\mathrm{i}\,\left(a^2-b^2\right)\,\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\right.\right.$$
$$\left.\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+$$
$$\left(2\,a\,b\,\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left.\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\right)\Big/$$
$$\left(\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 548: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^3}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 172 leaves, 9 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\left(a-\mathrm{i}\,b\right)^{5/2}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\left(a+\mathrm{i}\,b\right)^{5/2}\,d}-\frac{2\,a^2\,\text{Tan}[c+d\,x]}{3\,b\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}-\frac{4\,a^2\,\left(a^2+4\,b^2\right)}{3\,b^2\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 3, 530 leaves):

$$\left(\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(-\frac{2 a \left(2 a^2+9 b^2\right)}{3 (a-i b)^2 (a+i b)^2 b^2}+\frac{2 a^3}{3 (a-i b)^2 (a+i b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\frac{2 \left(a^3 \text{Sin}[c+d x]+9 a b^2 \text{Sin}[c+d x]\right)}{3 (a-i b)^2 (a+i b)^2 b \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right)\right)\Big/ \left(d \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)-\left(\text{Sec}[c+d x]^{5/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{5/2} \left(-\left(\left(2 i a b \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left(\left(a^2-b^2\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/ \left((a-i b)^2 (a+i b)^2 d \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 549: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^2}{\left(a+b \text{Tan}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 3, 157 leaves, 9 steps):

$$\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{5/2} d}-\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{5/2} d}-\frac{2 a^2}{3 b \left(a^2+b^2\right) d \left(a+b \text{Tan}[c+d x]\right)^{3/2}}+\frac{4 a b}{\left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 524 leaves):

$$\left(\text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \left(-\frac{2 (a^2-6 b^2)}{3 (a-i b)^2 (a+i b)^2 b}-\frac{2 a^2 b}{3 (a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{4 (a^2 \text{Sin}[c+d x]-3 b^2 \text{Sin}[c+d x])}{3 (a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}\right)\right)\Big/$$

$$\left(d (a+b \text{Tan}[c+d x])^{5/2}\right)-\left(\text{Sec}[c+d x]^{5/2} (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^{5/2}\right.$$

$$\left(-\left(\left(i (a^2-b^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{\text{Sec}[c+d x]}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)+$$

$$\left(2 a b\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\sqrt{a+b \text{Tan}[c+d x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{\text{Sec}[c+d x]}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/$$

$$\left((a-i b)^2 (a+i b)^2 d (a+b \text{Tan}[c+d x])^{5/2}\right)$$

Problem 550: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 155 leaves, 9 steps):

$$-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{5/2} d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{5/2} d}+$$

$$\frac{2 a}{3 (a^2+b^2) d (a+b \text{Tan}[c+d x])^{3/2}}+\frac{2 (a^2-b^2)}{(a^2+b^2)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 530 leaves):

$$\left(\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(\frac{2 \left(4 a^2-3 b^2\right)}{3 a (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2}+\frac{2 a b^2}{3 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}-\frac{2 \left(5 a^2 b \text{Sin}[c+d x]-3 b^3 \text{Sin}[c+d x]\right)}{3 a (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right)\right)\Big/$$

$$\left(d \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)+\left(\text{Sec}[c+d x]^{5/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{5/2}\right.$$

$$\left(-\left(\left(2 \mathrm{i} a b \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-$$

$$\left(\left(a^2-b^2\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/$$

$$\left((a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 d \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 551: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\left(a+b \text{Tan}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 3, 152 leaves, 9 steps):

$$-\frac{\mathrm{i} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{(a-\mathrm{i} b)^{5/2} d}+\frac{\mathrm{i} \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{(a+\mathrm{i} b)^{5/2} d}-\frac{2 b}{3 \left(a^2+b^2\right) d \left(a+b \text{Tan}[c+d x]\right)^{3/2}}-\frac{4 a b}{\left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 498 leaves):

$$\Bigg(\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\left(-\frac{14\,b}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\frac{2\,b^3}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}+\frac{16\,b^2\,\mathrm{Sin}[c+d\,x]}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\Bigg)\Big/$$

$$\left(d\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)+\Bigg(\mathrm{Sec}[c+d\,x]^{5/2}\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{5/2}$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{i}\,(a^2-b^2)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\Bigg)\Big/$$

$$\left(\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Bigg)+$$

$$\Bigg(2\,a\,b\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\Bigg)\Big/$$

$$\left(\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Bigg)\Bigg)\Big/$$

$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)$$

Problem 552: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d\,x]}{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 195 leaves, 13 steps):

$$-\frac{2\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{5/2}\,d}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{(a-\mathrm{i}\,b)^{5/2}\,d}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{(a+\mathrm{i}\,b)^{5/2}\,d}+$$

$$\frac{2\,b^2}{3\,a\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+\frac{2\,b^2\,(3\,a^2+b^2)}{a^2\,(a^2+b^2)^2\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 22 634 leaves): Display of huge result suppressed!

Problem 553: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^2}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 245 leaves, 14 steps):

$$\frac{5 b \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{7/2} d}+\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{5/2} d}-\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{5/2} d}-\frac{b \left(3 a^2+5 b^2\right)}{3 a^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^{3/2}}-\frac{\text{Cot}[c+d x]}{a d (a+b \text{Tan}[c+d x])^{3/2}}-\frac{b \left(a^4+10 a^2 b^2+5 b^4\right)}{a^3 \left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 22 800 leaves): Display of huge result suppressed!

Problem 554: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b \text{Tan}[c+d x])^{7/2}} \, dx$$

Optimal (type 3, 194 leaves, 10 steps):

$$-\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{7/2} d}+\frac{i \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{7/2} d}-\frac{2 b}{5 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^{5/2}}-\frac{4 a b}{3 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^{3/2}}-\frac{2 b \left(3 a^2-b^2\right)}{\left(a^2+b^2\right)^3 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 608 leaves):

$$\left(\text{Sec}[c+d x]^4 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^4 \left(-\frac{4 b \left(29 a^2-9 b^2\right)}{15 a (a-\mathbb{i} b)^3 (a+\mathbb{i} b)^3}+\frac{2 b^4 \text{Sin}[c+d x]}{5 a (a-\mathbb{i} b)^2 (a+\mathbb{i} b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3}-\frac{2 b^3 \left(19 a^2+3 b^2\right)}{15 a (a-\mathbb{i} b)^3 (a+\mathbb{i} b)^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\frac{4 \left(37 a^2 b^2 \text{Sin}[c+d x]-9 b^4 \text{Sin}[c+d x]\right)}{15 a (a-\mathbb{i} b)^3 (a+\mathbb{i} b)^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right)\right) \Big/ \left(d \left(a+b \text{Tan}[c+d x]\right)^{7/2}\right)+\left(\text{Sec}[c+d x]^{7/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{7/2} \left(-\left(\left(\mathbb{i} \left(a^3-3 a b^2\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathbb{i} b}}\right]}{\sqrt{a-\mathbb{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathbb{i} b}}\right]}{\sqrt{a+\mathbb{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left(\left(-3 a^2 b+b^3\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathbb{i} b}}\right]}{\sqrt{a-\mathbb{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathbb{i} b}}\right]}{\sqrt{a+\mathbb{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right) \Big/ \left((a-\mathbb{i} b)^3 (a+\mathbb{i} b)^3 d \left(a+b \text{Tan}[c+d x]\right)^{7/2}\right)$$

Problem 591: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d x]^{9/2}}{\left(a+b \text{Tan}[c+d x]\right)^2} \, dx$$

Optimal (type 3, 399 leaves, 17 steps):

$$-\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+$$

$$\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{a^{7/2}\,\left(5\,a^2+9\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{b^{7/2}\,\left(a^2+b^2\right)^2\,d}+$$

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-\frac{a\,\left(5\,a^2+4\,b^2\right)\,\sqrt{\text{Tan}[c+d\,x]}}{b^3\,\left(a^2+b^2\right)\,d}+$$

$$\frac{\left(5\,a^2+2\,b^2\right)\,\text{Tan}[c+d\,x]^{3/2}}{3\,b^2\,\left(a^2+b^2\right)\,d}-\frac{a^2\,\text{Tan}[c+d\,x]^{5/2}}{b\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 796 leaves):

$$\left(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\sqrt{\text{Tan}[c+d\,x]}\,\left(-\frac{a\,(5\,a^2+4\,b^2)}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^3}+\frac{a^3\,\text{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}+\frac{2\,\text{Tan}[c+d\,x]}{3\,b^2}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d\,x])^2\right)+\frac{1}{2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^3\,d\,(a+b\,\text{Tan}[c+d\,x])^2}$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\left(\left(2\,(5\,a^4+4\,a^2\,b^2-b^4)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\text{Cot}[c+d\,x])\,(1+\text{Tan}[c+d\,x]^2)^2\right)+\right.$$

$$\frac{1}{4\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d\,x])\,(1+\text{Tan}[c+d\,x]^2)}\,a\,b^3\,\text{Csc}[c+d\,x]^2\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,(c+d\,x)\right]\,(a+b\,\text{Tan}[c+d\,x])-$$

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d\,x])\,(1-\text{Tan}[c+d\,x]^2)\,(1+\text{Tan}[c+d\,x]^2)\right)\right)b^4\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\left.\text{Sec}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])\right)$$

Problem 592: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^{7/2}}{(a+b\,\text{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 358 leaves, 16 steps):

$$-\frac{\left(a^2-2ab-b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^2 d}+$$

$$\frac{\left(a^2-2ab-b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^2 d}-\frac{a^{5/2}\left(3a^2+7b^2\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{b^{5/2}\left(a^2+b^2\right)^2 d}-$$

$$\frac{\left(a^2+2ab-b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^2 d}+$$

$$\frac{\left(a^2+2ab-b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^2 d}+$$

$$\frac{\left(3a^2+2b^2\right)\sqrt{\text{Tan}[c+dx]}}{b^2\left(a^2+b^2\right) d}-\frac{a^2\,\text{Tan}[c+dx]^{3/2}}{b\left(a^2+b^2\right) d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 775 leaves) :

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(\frac{3\,a^2+2\,b^2}{\left(a-i\,b\right)\,\left(a+i\,b\right)\,b^2}-\frac{a^2\,\text{Sin}[c+d\,x]}{\left(a-i\,b\right)\,\left(a+i\,b\right)\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)-\frac{1}{2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,b^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}$$

$$\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2$$

$$\left(\left(2\,\left(3\,a^3+3\,a\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\Big/\right.$$

$$\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^2\right)+$$

$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)}$$

$$b^3\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,\left(a+b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,\left(a+b\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$\left(a-b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Tan}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]\,\left(a+b\,\text{Tan}[c+d\,x]\right)+$$

$$\left(1\Big/\left(2\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1-\text{Tan}[c+d\,x]^2\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)$$

$$a\,b^2\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\left(\frac{4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$

$$\sqrt{2}\,\left(2\,\left(a-b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,\left(a-b\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$\left(a+b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 595: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}}{\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 316 leaves, 15 steps):

$$-\frac{\left(a^2+2ab-b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^2 d}+$$

$$\frac{\left(a^2+2ab-b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^2 d}-\frac{\sqrt{b}\left(3a^2-b^2\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{\sqrt{a}\left(a^2+b^2\right)^2 d}+$$

$$\frac{\left(a^2-2ab-b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^2 d}-$$

$$\frac{\left(a^2-2ab-b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^2 d}-\frac{b\sqrt{\text{Tan}[c+dx]}}{\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 466 leaves):

$$\frac{1}{2d}\left(-\frac{2b\,\text{Cos}[c+dx]\sqrt{\text{Tan}[c+dx]}}{(a-\mathrm{i}\,b)(a+\mathrm{i}\,b)\left(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]\right)}+\frac{1}{4\left(a^2+b^2\right)^2\left(b+a\,\text{Cot}[c+dx]\right)}\text{Csc}[c+dx]\right.$$

$$\left(a+b\,\text{Tan}[c+dx]\right)\left(a\,\text{Csc}[c+dx]\left(-8\sqrt{a}\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]+\sqrt{2}\left(-2(a+b)\right.\right.\right.$$

$$\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]+2(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]+(a-b)$$

$$\left(\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]-\right.$$

$$\left.\left.\left.\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]\right)\right)\right)\text{Sin}[2(c+dx)]-$$

$$\left(2b\,\text{Cos}[2(c+dx)]\left(\frac{4\left(a^2-b^2\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{\sqrt{a}\sqrt{b}}+\sqrt{2}\left(2(a-b)\right.\right.\right.$$

$$\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]-2(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]+$$

$$(a+b)\left(\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]-\text{Log}\left[1+\right.\right.$$

$$\left.\left.\left.\left.\left.\left.\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]\right)\right)\right)\text{Sec}[c+dx]\right)\Big/\left(1-\text{Tan}[c+dx]^2\right)\right)\right)$$

Problem 596: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\sqrt{\text{Tan}[c+dx]}\left(a+b\,\text{Tan}[c+dx]\right)^2}\,dx$$

Optimal (type 3, 317 leaves, 15 steps):

$$-\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{b^{3/2}\,\left(5\,a^2+b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{3/2}\,\left(a^2+b^2\right)^2\,d}-\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{b^2\,\sqrt{\text{Tan}[c+d\,x]}}{a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 468 leaves):

$$\frac{1}{4\,a^{3/2}\,d}\left(\frac{1}{\left(a^2+b^2\right)^2}\left(-2\,\sqrt{2}\,a^{3/2}\,\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,\sqrt{2}\,a^{3/2}\,\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+20\,a^2\,b^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+4\,b^{7/2}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]-\sqrt{2}\,a^{7/2}\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-2\,\sqrt{2}\,a^{5/2}\,b\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\sqrt{2}\,a^{3/2}\,b^2\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\sqrt{2}\,a^{7/2}\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+2\,\sqrt{2}\,a^{5/2}\,b\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\sqrt{2}\,a^{3/2}\,b^2\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)+\frac{4\,\sqrt{a}\,b^2\,\text{Cos}[c+d\,x]\,\sqrt{\text{Tan}[c+d\,x]}}{(a-i\,b)\,(a+i\,b)\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$

Problem 597: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 358 leaves, 16 steps):

$$\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-\frac{b^{5/2}\,\left(7\,a^2+3\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{5/2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+$$

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{2\,a^2+3\,b^2}{a^2\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Tan}[c+d\,x]}}+\frac{b^2}{a\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 769 leaves):

$$\Bigg(\text{Sec}[c+d\,x]^2\,\big(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\big)^2$$

$$\left(-\frac{b^3}{a^3\,(a^2+b^2)}-\frac{2\,\text{Cot}[c+d\,x]}{a^2}+\frac{b^4\,\text{Sin}[c+d\,x]}{a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\big(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\big)}\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Big/\left(d\,\big(a+b\,\text{Tan}[c+d\,x]\big)^2\right)-$$

$$\frac{1}{2\,a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,d\,\big(a+b\,\text{Tan}[c+d\,x]\big)^2}\,\text{Sec}[c+d\,x]^2\,\big(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\big)^2$$

$$\Bigg(\left(2\,(3\,a^2\,b+3\,b^3)\,\text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\Big]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\,\big(a+b\,\text{Tan}[c+d\,x]\big)\right)\Big/$$

$$\left(\sqrt{a}\,\sqrt{b}\,\big(b+a\,\text{Cot}[c+d\,x]\big)\,\big(1+\text{Tan}[c+d\,x]^2\big)^2\right)+$$

$$\frac{1}{4\,(a^2+b^2)\,\big(b+a\,\text{Cot}[c+d\,x]\big)\,\big(1+\text{Tan}[c+d\,x]^2\big)}$$

$$a^3\,\text{Csc}[c+d\,x]^2\,\Bigg(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\Big]+\sqrt{2}$$

$$\Big(-2\,(a+b)\,\text{ArcTan}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\big]+2\,(a+b)\,\text{ArcTan}\big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\big]+$$

$$(a-b)\,\Big(\text{Log}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\big]-\text{Log}\big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+$$

$$\text{Tan}[c+d\,x]\big]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\big[2\,(c+d\,x)\big]\,\big(a+b\,\text{Tan}[c+d\,x]\big)-$$

$$\Big(1\Big/\Big(2\,(a^2+b^2)\,\big(b+a\,\text{Cot}[c+d\,x]\big)\,\big(1-\text{Tan}[c+d\,x]^2\big)\,\big(1+\text{Tan}[c+d\,x]^2\big)\Big)\Big)$$

$$a^2\,b\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\,\Bigg(\frac{4\,(a^2-b^2)\,\text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\Big]}{\sqrt{a}\,\sqrt{b}}+$$

$$\sqrt{2}\,\Big(2\,(a-b)\,\text{ArcTan}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\big]-2\,(a-b)\,\text{ArcTan}\big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\big]+$$

$$(a+b)\,\Big(\text{Log}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\big]-\text{Log}\big[$$

$$1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\big]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^3\,\big(a+b\,\text{Tan}[c+d\,x]\big)\Bigg)$$

Problem 598: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Tan}[c+d\,x]^{5/2}\,\big(a+b\,\text{Tan}[c+d\,x]\big)^2}\,dx$$

Optimal (type 3, 397 leaves, 17 steps):

$$\frac{\left(a^2-2 a b-b^2\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2} \left(a^2+b^2\right)^2 d}-\frac{\left(a^2-2 a b-b^2\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2} \left(a^2+b^2\right)^2 d}+\frac{b^{7/2} \left(9 a^2+5 b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{7/2} \left(a^2+b^2\right)^2 d}+\frac{\left(a^2+2 a b-b^2\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2} \left(a^2+b^2\right)^2 d}-\frac{\left(a^2+2 a b-b^2\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2} \left(a^2+b^2\right)^2 d}-\frac{2 a^2+5 b^2}{3 a^2 \left(a^2+b^2\right) d\, \text{Tan}[c+d x]^{3/2}}+\frac{b \left(4 a^2+5 b^2\right)}{a^3 \left(a^2+b^2\right) d \sqrt{\text{Tan}[c+d x]}}+\frac{b^2}{a \left(a^2+b^2\right) d\, \text{Tan}[c+d x]^{3/2} \left(a+b\, \text{Tan}[c+d x]\right)}$$

Result (type 3, 820 leaves):

$$\left(\text{Sec}[c+d x]^2 \, (a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x])^2 \left(\frac{2 a^4 + 2 a^2 b^2 + 3 b^4}{3 a^4 (a - i b) (a + i b)} + \frac{4 b \, \text{Cot}[c+d x]}{a^3} - \frac{2 \, \text{Csc}[c+d x]^2}{3 a^2} - \frac{b^5 \, \text{Sin}[c+d x]}{a^4 (a - i b) (a + i b) (a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x])}\right) \sqrt{\text{Tan}[c+d x]}\right) \Big/ \left(d \, (a + b \, \text{Tan}[c+d x])^2\right) + \frac{1}{2 a^3 (a - i b) (a + i b) \, d \, (a + b \, \text{Tan}[c+d x])^2}$$

$$\text{Sec}[c+d x]^2 \, (a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x])^2$$

$$\left(\left(2 \left(-a^4 + 4 a^2 b^2 + 5 b^4\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] \text{Csc}[c+d x] \, \text{Sec}[c+d x]^3 \, (a + b \, \text{Tan}[c+d x])\right) \Big/ \left(\sqrt{a} \sqrt{b} \, (b + a \, \text{Cot}[c+d x]) \left(1 + \text{Tan}[c+d x]^2\right)^2\right) + \right.$$

$$\frac{1}{4 \left(a^2 + b^2\right) (b + a \, \text{Cot}[c+d x]) \left(1 + \text{Tan}[c+d x]^2\right)} a^3 \, b \, \text{Csc}[c+d x]^2 \left(-8 \sqrt{a} \sqrt{b} \, \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] + \sqrt{2} \right.$$

$$\left(-2 (a + b) \, \text{ArcTan}\left[1 - \sqrt{2} \sqrt{\text{Tan}[c+d x]}\right] + 2 (a + b) \, \text{ArcTan}\left[1 + \sqrt{2} \sqrt{\text{Tan}[c+d x]}\right] + (a - b) \left(\text{Log}\left[1 - \sqrt{2} \sqrt{\text{Tan}[c+d x]} + \text{Tan}[c+d x]\right] - \text{Log}\left[1 + \sqrt{2} \sqrt{\text{Tan}[c+d x]} + \text{Tan}[c+d x]\right]\right)\right)\Bigg) \text{Sec}[c+d x]^2 \, \text{Sin}[2 (c + d x)] \, (a + b \, \text{Tan}[c+d x]) +$$

$$\left(1 \Big/ \left(2 \left(a^2 + b^2\right) (b + a \, \text{Cot}[c+d x]) \left(1 - \text{Tan}[c+d x]^2\right) \left(1 + \text{Tan}[c+d x]^2\right)\right)\right)$$

$$a^4 \, \text{Cos}[2 (c + d x)] \, \text{Csc}[c+d x] \left(\frac{4 \left(a^2 - b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}} + \right.$$

$$\sqrt{2} \left(2 (a - b) \, \text{ArcTan}\left[1 - \sqrt{2} \sqrt{\text{Tan}[c+d x]}\right] - 2 (a - b) \, \text{ArcTan}\left[1 + \sqrt{2} \sqrt{\text{Tan}[c+d x]}\right] + (a + b) \left(\text{Log}\left[1 - \sqrt{2} \sqrt{\text{Tan}[c+d x]} + \text{Tan}[c+d x]\right] - \text{Log}\left[1 + \sqrt{2} \sqrt{\text{Tan}[c+d x]} + \text{Tan}[c+d x]\right]\right)\right)\Bigg) \text{Sec}[c+d x]^3 \, (a + b \, \text{Tan}[c+d x])\Bigg)$$

Problem 599: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d x]^{11/2}}{(a + b \, \text{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 493 leaves, 18 steps):

$$\frac{(a+b)\left(a^2-4\,a\,b+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a+b)\left(a^2-4\,a\,b+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{a^{7/2}\left(35\,a^4+102\,a^2\,b^2+99\,b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,b^{9/2}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4\,a\,b+b^2\right)\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a-b)\left(a^2+4\,a\,b+b^2\right)\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{a\left(35\,a^4+67\,a^2\,b^2+24\,b^4\right)\sqrt{\text{Tan}[c+d\,x]}}{4\,b^4\left(a^2+b^2\right)^2 d}+\frac{\left(35\,a^4+67\,a^2\,b^2+8\,b^4\right)\text{Tan}[c+d\,x]^{3/2}}{12\,b^3\left(a^2+b^2\right)^2 d}-\frac{a^2\,\text{Tan}[c+d\,x]^{7/2}}{2\,b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+d\,x]\right)^2}-\frac{a^2\left(7\,a^2+15\,b^2\right)\text{Tan}[c+d\,x]^{5/2}}{4\,b^2\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 890 leaves) :

$$\left(\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,\sqrt{\text{Tan}[c+d\,x]}\right.$$

$$\left(-\frac{a\,(35\,a^4+69\,a^2\,b^2+24\,b^4)}{4\,(a-i\,b)^2\,(a+i\,b)^2\,b^4}+\frac{a^5}{2\,(a-i\,b)^2\,(a+i\,b)^2\,b^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\right.$$

$$\left.\left.\frac{3\,(3\,a^5\,\text{Sin}[c+d\,x]+7\,a^3\,b^2\,\text{Sin}[c+d\,x])}{4\,(a-i\,b)^2\,(a+i\,b)^2\,b^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}+\frac{2\,\text{Tan}[c+d\,x]}{3\,b^3}\right)\right)\Big/$$

$$\left(d\,(a+b\,\text{Tan}[c+d\,x])^3\right)+\frac{1}{8\,(a-i\,b)^2\,(a+i\,b)^2\,b^4\,d\,(a+b\,\text{Tan}[c+d\,x])^3}$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3$$

$$\left(\left(2\,(35\,a^6+67\,a^4\,b^2+28\,a^2\,b^4-4\,b^6)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\right.\right.$$

$$\left.(a+b\,\text{Tan}[c+d\,x])\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\text{Cot}[c+d\,x])\,(1+\text{Tan}[c+d\,x]^2)^2\right)+$$

$$\frac{1}{(a^2+b^2)\,(b+a\,\text{Cot}[c+d\,x])\,(1+\text{Tan}[c+d\,x]^2)}\,2\,a\,b^5\,\text{Csc}[c+d\,x]^2$$

$$\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Tan}[c+d\,x]\right]\right)\right)\right)\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,(c+d\,x)]\,(a+b\,\text{Tan}[c+d\,x])-$$

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d\,x])\,(1-\text{Tan}[c+d\,x]^2)\,(1+\text{Tan}[c+d\,x]^2)\right)\right)$$

$$(-4\,a^2\,b^4+4\,b^6)\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$

$$\sqrt{2}\,\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\text{Sec}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])\right)$$

Problem 600: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\text{Tan}[c+d\,x]^{9/2}}{(a+b\,\text{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 444 leaves, 17 steps):

$$-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{a^{5/2}\left(15a^4+46a^2b^2+63b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4b^{7/2}\left(a^2+b^2\right)^3 d}+\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{\left(15a^4+31a^2b^2+8b^4\right)\sqrt{\text{Tan}[c+dx]}}{4b^3\left(a^2+b^2\right)^2 d}-\frac{a^2\,\text{Tan}[c+dx]^{5/2}}{2b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+dx]\right)^2}-\frac{a^2\left(5a^2+13b^2\right)\text{Tan}[c+dx]^{3/2}}{4b^2\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 869 leaves) :

$$\Bigg(\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(\frac{15 a^4+33 a^2 b^2+8 b^4}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b^3}-\frac{a^4}{2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\frac{-5 a^4 \text{Sin}[c+d x]-17 a^2 b^2 \text{Sin}[c+d x]}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right) \sqrt{\text{Tan}[c+d x]}\Bigg) \Big/ \left(d \left(a+b \text{Tan}[c+d x]\right)^3\right)-\frac{1}{8 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b^3 d \left(a+b \text{Tan}[c+d x]\right)^3}$$

$$\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \Bigg(\Bigg(2 \left(15 a^5+31 a^3 b^2+16 a b^4\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] \text{Csc}[c+d x] \text{Sec}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)\Bigg) \Big/ \left(\sqrt{a} \sqrt{b} \left(b+a \text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)^2\right)+$$

$$\frac{1}{4 \left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)} \left(-4 a^2 b^3+4 b^5\right) \text{Csc}[c+d x]^2 \Bigg(-8 \sqrt{a} \sqrt{b} \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2} \Big(-2 (a+b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2 (a+b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a-b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\Big)\Bigg) \text{Sec}[c+d x]^2 \text{Sin}\left[2 (c+d x)\right] \left(a+b \text{Tan}[c+d x]\right)+$$

$$\left(1 \Big/ \left(\left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1-\text{Tan}[c+d x]^2\right) \left(1+\text{Tan}[c+d x]^2\right)\right)\right) 4 a b^4 \text{Cos}\left[2 (c+d x)\right] \text{Csc}[c+d x] \Bigg(\frac{4 \left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\sqrt{2} \Big(2 (a-b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2 (a-b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a+b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\Big)\Bigg) \text{Sec}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)\Bigg)$$

Problem 601: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{7/2}}{\left(a+b \text{Tan}[c+d x]\right)^3} \, dx$$

Optimal (type 3, 396 leaves, 16 steps):

$$-\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{a^{3/2}\left(3 a^4+6 a^2 b^2+35 b^4\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 b^{5/2}\left(a^2+b^2\right)^3 d}-\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{a^2 \text{Tan}[c+d x]^{3/2}}{2 b\left(a^2+b^2\right) d(a+b \text{Tan}[c+d x])^2}-\frac{a^2\left(3 a^2+11 b^2\right) \sqrt{\text{Tan}[c+d x]}}{4 b^2\left(a^2+b^2\right)^2 d(a+b \text{Tan}[c+d x])}$$

Result (type 3, 855 leaves):

$$\left(\operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3 \left(-\frac{a \left(3 a^2+13 b^2\right)}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b^2}+\frac{a^3}{2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2}+\frac{a^3 \operatorname{Sin}[c+d x]+13 a b^2 \operatorname{Sin}[c+d x]}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)}\right) \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(d \left(a+b \operatorname{Tan}[c+d x]\right)^3\right)-\frac{1}{8 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b^2 d \left(a+b \operatorname{Tan}[c+d x]\right)^3}$$

$$\operatorname{Sec}[c+d x]^3 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3 \left(\left(2 \left(-3 a^4-7 a^2 b^2-4 b^4\right) \operatorname{ArcTan}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right] \operatorname{Csc}[c+d x] \operatorname{Sec}[c+d x]^3 \left(a+b \operatorname{Tan}[c+d x]\right)\right) \Big/ \left(\sqrt{a} \sqrt{b} \left(b+a \operatorname{Cot}[c+d x]\right) \left(1+\operatorname{Tan}[c+d x]^2\right)^2\right)+\frac{1}{\left(a^2+b^2\right) \left(b+a \operatorname{Cot}[c+d x]\right) \left(1+\operatorname{Tan}[c+d x]^2\right)} 2 a b^3 \operatorname{Csc}[c+d x]^2 \left(-8 \sqrt{a} \sqrt{b} \operatorname{ArcTan}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2} \left(-2 (a+b) \operatorname{ArcTan}\left[1-\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}\right]+2 (a+b) \operatorname{ArcTan}\left[1+\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}\right]+(a-b) \left(\operatorname{Log}\left[1-\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]-\operatorname{Log}\left[1+\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]\right)\right)\right) \operatorname{Sec}[c+d x]^2 \operatorname{Sin}\left[2 (c+d x)\right] \left(a+b \operatorname{Tan}[c+d x]\right)-\left(1 \Big/ \left(2 \left(a^2+b^2\right) \left(b+a \operatorname{Cot}[c+d x]\right) \left(1-\operatorname{Tan}[c+d x]^2\right) \left(1+\operatorname{Tan}[c+d x]^2\right)\right)\right) \left(-4 a^2 b^2+4 b^4\right) \operatorname{Cos}\left[2 (c+d x)\right] \operatorname{Csc}[c+d x] \left(\frac{4 \left(a^2-b^2\right) \operatorname{ArcTan}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\sqrt{2} \left(2 (a-b) \operatorname{ArcTan}\left[1-\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}\right]-2 (a-b) \operatorname{ArcTan}\left[1+\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}\right]+(a+b) \left(\operatorname{Log}\left[1-\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]-\operatorname{Log}\left[1+\sqrt{2} \sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]\right)\right)\right) \operatorname{Sec}[c+d x]^3 \left(a+b \operatorname{Tan}[c+d x]\right)\right)$$

Problem 602: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Tan}[c+d x]^{5/2}}{\left(a+b \operatorname{Tan}[c+d x]\right)^3} \, dx$$

Optimal (type 3, 390 leaves, 16 steps):

$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{\sqrt{a}\left(a^4+18a^2b^2-15b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4b^{3/2}\left(a^2+b^2\right)^3 d}-\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{a^2\sqrt{\text{Tan}[c+dx]}}{2b\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+dx]\right)^2}+\frac{a\left(a^2+9b^2\right)\sqrt{\text{Tan}[c+dx]}}{4b\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 837 leaves):

$$\left(\text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{a^2-9 b^2}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b}-\frac{a^2 b}{2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\right.$$
$$\left.\left.\frac{3 \left(a^2 \text{Sin}[c+d x]-3 b^2 \text{Sin}[c+d x]\right)}{4 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}\right) \sqrt{\text{Tan}[c+d x]}\right) \Big/$$
$$\left(d (a+b \text{Tan}[c+d x])^3\right)+\frac{1}{8 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b d (a+b \text{Tan}[c+d x])^3}$$
$$\text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3$$
$$\left(\left(2 \left(a^3+a b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] \text{Csc}[c+d x] \text{Sec}[c+d x]^3 (a+b \text{Tan}[c+d x])\right) \Big/\right.$$
$$\left(\sqrt{a} \sqrt{b} (b+a \text{Cot}[c+d x]) \left(1+\text{Tan}[c+d x]^2\right)^2\right)+$$
$$\frac{1}{4 \left(a^2+b^2\right) (b+a \text{Cot}[c+d x]) \left(1+\text{Tan}[c+d x]^2\right)}$$
$$\left(-4 a^2 b+4 b^3\right) \text{Csc}[c+d x]^2 \left(-8 \sqrt{a} \sqrt{b} \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$
$$\left(-2 (a+b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2 (a+b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$
$$(a-b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^2 \text{Sin}[2 (c+d x)] (a+b \text{Tan}[c+d x])+$$
$$\left(1 \Big/ \left(\left(a^2+b^2\right) (b+a \text{Cot}[c+d x]) \left(1-\text{Tan}[c+d x]^2\right) \left(1+\text{Tan}[c+d x]^2\right)\right)\right)$$
$$4 a b^2 \text{Cos}[2 (c+d x)] \text{Csc}[c+d x] \left(\frac{4 \left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\right.$$
$$\sqrt{2} \left(2 (a-b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2 (a-b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$
$$(a+b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.\left.1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^3 (a+b \text{Tan}[c+d x])\right)$$

Problem 603: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{3/2}}{(a+b \text{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 385 leaves, 16 steps):

$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{\left(3a^4-26a^2b^2+3b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4\sqrt{a}\sqrt{b}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{a\sqrt{\text{Tan}[c+dx]}}{2\left(a^2+b^2\right)d\,(a+b\,\text{Tan}[c+dx])^2}+\frac{\left(3a^2-5b^2\right)\sqrt{\text{Tan}[c+dx]}}{4\left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+dx])}$$

Result (type 3, 838 leaves):

$$\left(\operatorname{Sec}[c+d x]^3\,(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x])^3\left(\frac{5\,(a^2-b^2)}{4 a\,(a-\mathrm{i} b)^2\,(a+\mathrm{i} b)^2}+\frac{a b^2}{2\,(a-\mathrm{i} b)^2\,(a+\mathrm{i} b)^2\,(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x])^2}+\frac{-7 a^2 b\operatorname{Sin}[c+d x]+5 b^3\operatorname{Sin}[c+d x]}{4 a\,(a-\mathrm{i} b)^2\,(a+\mathrm{i} b)^2\,(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x])}\right)\sqrt{\operatorname{Tan}[c+d x]}\right)\Big/$$

$$\left(d\,(a+b\operatorname{Tan}[c+d x])^3\right)+\frac{1}{8\,(a-\mathrm{i} b)^2\,(a+\mathrm{i} b)^2\,d\,(a+b\operatorname{Tan}[c+d x])^3}$$

$$\operatorname{Sec}[c+d x]^3\,(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x])^3$$

$$\left(\left(2\,(-a^2-b^2)\operatorname{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]\operatorname{Csc}[c+d x]\operatorname{Sec}[c+d x]^3\,(a+b\operatorname{Tan}[c+d x])\right)\Big/\right.$$

$$\left(\sqrt{a}\,\sqrt{b}\,(b+a\operatorname{Cot}[c+d x])\,(1+\operatorname{Tan}[c+d x]^2)^2\right)+$$

$$\frac{1}{(a^2+b^2)\,(b+a\operatorname{Cot}[c+d x])\,(1+\operatorname{Tan}[c+d x]^2)}$$

$$2 a b\operatorname{Csc}[c+d x]^2\left(-8\sqrt{a}\,\sqrt{b}\operatorname{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\operatorname{ArcTan}\left[1-\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}\right]+2\,(a+b)\operatorname{ArcTan}\left[1+\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}\right]+\right.$$

$$(a-b)\left(\operatorname{Log}\left[1-\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]-\operatorname{Log}\left[1+\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}+\right.\right.$$

$$\left.\left.\left.\left.\operatorname{Tan}[c+d x]\right]\right)\right)\right)\operatorname{Sec}[c+d x]^2\operatorname{Sin}[2\,(c+d x)]\,(a+b\operatorname{Tan}[c+d x])-$$

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\operatorname{Cot}[c+d x])\,(1-\operatorname{Tan}[c+d x]^2)\,(1+\operatorname{Tan}[c+d x]^2)\right)\right)$$

$$(-4 a^2+4 b^2)\operatorname{Cos}[2\,(c+d x)]\operatorname{Csc}[c+d x]\left(\frac{4\,(a^2-b^2)\operatorname{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$

$$\sqrt{2}\,\left(2\,(a-b)\operatorname{ArcTan}\left[1-\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}\right]-2\,(a-b)\operatorname{ArcTan}\left[1+\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}\right]+\right.$$

$$(a+b)\left(\operatorname{Log}\left[1-\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]-\operatorname{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\operatorname{Tan}[c+d x]}+\operatorname{Tan}[c+d x]\right]\right)\right)\right)\operatorname{Sec}[c+d x]^3\,(a+b\operatorname{Tan}[c+d x])\Bigg)$$

Problem 604: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\operatorname{Tan}[c+d x]}}{(a+b\operatorname{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 389 leaves, 16 steps):

$$-\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{\sqrt{b}\left(15 a^4-18 a^2 b^2-b^4\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{3/2}\left(a^2+b^2\right)^3 d}+\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}-\frac{b \sqrt{\text{Tan}[c+d x]}}{2\left(a^2+b^2\right) d\,(a+b \text{Tan}[c+d x])^2}-\frac{b\left(7 a^2-b^2\right) \sqrt{\text{Tan}[c+d x]}}{4 a\left(a^2+b^2\right)^2 d\,(a+b \text{Tan}[c+d x])}$$

Result (type 3, 846 leaves):

$$\left(\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(-\frac{b\,(9 a^2-b^2)}{4 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\frac{b^3}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\frac{11 a^2 b^2\,\text{Sin}[c+d x]-b^4\,\text{Sin}[c+d x]}{4 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\sqrt{\text{Tan}[c+d x]}\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d x])^3\right)+\frac{1}{8 a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(a+b\,\text{Tan}[c+d x])^3}$$

$$\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(\left(2\,(a^2 b+b^3)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\text{Csc}[c+d x]\,\text{Sec}[c+d x]^3\,(a+b\,\text{Tan}[c+d x])\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)^2\right)+\right.$$

$$\frac{1}{4\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)}(4 a^3-4 a b^2)\,\text{Csc}[c+d x]^2\left(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\,(a+b\,\text{Tan}[c+d x])-$$

$$\left(1\Big/\left((a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1-\text{Tan}[c+d x]^2)\,(1+\text{Tan}[c+d x]^2)\right)\right)4 a^2 b\,\text{Cos}[2\,(c+d x)]\,\text{Csc}[c+d x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^3\,(a+b\,\text{Tan}[c+d x])\left.\right)$$

Problem 605: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Tan}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 396 leaves, 16 steps):

$$-\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{b^{3/2}\left(35a^4+6a^2b^2+3b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4a^{5/2}\left(a^2+b^2\right)^3 d}-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+\frac{b^2\sqrt{\text{Tan}[c+dx]}}{2a\left(a^2+b^2\right)d\left(a+b\,\text{Tan}[c+dx]\right)^2}+\frac{b^2\left(11a^2+3b^2\right)\sqrt{\text{Tan}[c+dx]}}{4a^2\left(a^2+b^2\right)^2 d\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 862 leaves):

$$\left(\text{Sec}[c+d x]^3 \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^3\right.$$
$$\left(\frac{b^2 \left(13 a^2+3 b^2\right)}{4 a^3 (a-i b)^2 (a+i b)^2}+\frac{b^4}{2 a (a-i b)^2 (a+i b)^2 \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^2}-\right.$$
$$\left.\left.\frac{3 \left(5 a^2 b^3\,\text{Sin}[c+d x]+b^5\,\text{Sin}[c+d x]\right)}{4 a^3 (a-i b)^2 (a+i b)^2 \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)}\right) \sqrt{\text{Tan}[c+d x]}\right) \Big/$$
$$\left(d \left(a+b\,\text{Tan}[c+d x]\right)^3\right)+\frac{1}{8 a^2 (a-i b)^2 (a+i b)^2 d \left(a+b\,\text{Tan}[c+d x]\right)^3}$$
$$\text{Sec}[c+d x]^3 \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^3$$
$$\left(\left(2 \left(4 a^4+7 a^2 b^2+3 b^4\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] \text{Csc}[c+d x]\,\text{Sec}[c+d x]^3\right.\right.$$
$$\left.\left(a+b\,\text{Tan}[c+d x]\right)\right) \Big/ \left(\sqrt{a} \sqrt{b} \left(b+a\,\text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)^2\right)-$$
$$\frac{1}{\left(a^2+b^2\right) \left(b+a\,\text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)} 2 a^3 b\,\text{Csc}[c+d x]^2$$
$$\left(-8 \sqrt{a} \sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$
$$\left(-2 (a+b)\,\text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2 (a+b)\,\text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$
$$(a-b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^2\,\text{Sin}\left[2 (c+d x)\right] \left(a+b\,\text{Tan}[c+d x]\right)-$$
$$\left(1 \Big/ \left(2 \left(a^2+b^2\right) \left(b+a\,\text{Cot}[c+d x]\right) \left(1-\text{Tan}[c+d x]^2\right) \left(1+\text{Tan}[c+d x]^2\right)\right)\right)$$
$$\left(4 a^4-4 a^2 b^2\right) \text{Cos}\left[2 (c+d x)\right] \text{Csc}[c+d x] \left(\frac{4 \left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\right.$$
$$\sqrt{2} \left(2 (a-b)\,\text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2 (a-b)\,\text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$
$$(a+b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^3 \left(a+b\,\text{Tan}[c+d x]\right)\Bigg)$$

Problem 606: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\text{Tan}[c+d x]^{3/2} \left(a+b\,\text{Tan}[c+d x]\right)^3} \, dx$$

Optimal (type 3, 444 leaves, 17 steps):

$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{b^{5/2}\left(63a^4+46a^2b^2+15b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4a^{7/2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{8a^4+31a^2b^2+15b^4}{4a^3\left(a^2+b^2\right)^2 d\sqrt{\text{Tan}[c+dx]}}+\frac{b^2}{2a\left(a^2+b^2\right)d\sqrt{\text{Tan}[c+dx]}\left(a+b\,\text{Tan}[c+dx]\right)^2}+$$
$$\frac{b^2\left(13a^2+5b^2\right)}{4a^2\left(a^2+b^2\right)^2 d\sqrt{\text{Tan}[c+dx]}\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 875 leaves) :

$$\left(\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(-\frac{b^3 \left(17 a^2+7 b^2\right)}{4 a^4 (a-i b)^2 (a+i b)^2}-\frac{2 \text{Cot}[c+d x]}{a^3}-\frac{b^5}{2 a^2 (a-i b)^2 (a+i b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\frac{19 a^2 b^4 \text{Sin}[c+d x]+7 b^6 \text{Sin}[c+d x]}{4 a^4 (a-i b)^2 (a+i b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right) \sqrt{\text{Tan}[c+d x]}\right) \Big/ \left(d \left(a+b \text{Tan}[c+d x]\right)^3\right)-\frac{1}{8 a^3 (a-i b)^2 (a+i b)^2 d \left(a+b \text{Tan}[c+d x]\right)^3}$$

$$\text{Sec}[c+d x]^3 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(\left(2 \left(16 a^4 b+31 a^2 b^3+15 b^5\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right] \text{Csc}[c+d x] \text{Sec}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)\right) \Big/ \left(\sqrt{a} \sqrt{b} \left(b+a \text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)^2\right)+\right.$$

$$\frac{1}{4 \left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)} \left(4 a^5-4 a^3 b^2\right) \text{Csc}[c+d x]^2 \left(-8 \sqrt{a} \sqrt{b} \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2} \left(-2 (a+b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2 (a+b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a-b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^2 \text{Sin}\left[2 (c+d x)\right] \left(a+b \text{Tan}[c+d x]\right)-$$

$$\left(1 \Big/ \left(\left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1-\text{Tan}[c+d x]^2\right) \left(1+\text{Tan}[c+d x]^2\right)\right)\right) 4 a^4 b \text{Cos}\left[2 (c+d x)\right] \text{Csc}[c+d x] \left(\frac{4 \left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\sqrt{2} \left(2 (a-b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2 (a-b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a+b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)\left.\right)$$

Problem 607: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\text{Tan}[c+d x]^{5/2} \left(a+b \text{Tan}[c+d x]\right)^3} \, dx$$

Optimal (type 3, 493 leaves, 18 steps):

$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{b^{7/2}\left(99a^4+102a^2b^2+35b^4\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{4a^{9/2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+dx]}+\text{Tan}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{8a^4+67a^2b^2+35b^4}{12a^3\left(a^2+b^2\right)^2 d\,\text{Tan}[c+dx]^{3/2}}+\frac{b\left(24a^4+67a^2b^2+35b^4\right)}{4a^4\left(a^2+b^2\right)^2 d\sqrt{\text{Tan}[c+dx]}}+$$
$$\frac{b^2}{2a\left(a^2+b^2\right)d\,\text{Tan}[c+dx]^{3/2}\left(a+b\,\text{Tan}[c+dx]\right)^2}+$$
$$\frac{b^2\left(15a^2+7b^2\right)}{4a^2\left(a^2+b^2\right)^2 d\,\text{Tan}[c+dx]^{3/2}\left(a+b\,\text{Tan}[c+dx]\right)}$$

Result (type 3, 911 leaves) :

$$\left(\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(\frac{8 a^6+16 a^4 b^2+71 a^2 b^4+33 b^6}{12 a^5\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2}+\frac{6\,b\,\text{Cot}[c+d x]}{a^4}-\frac{2\,\text{Csc}[c+d x]^2}{3 a^3}+\frac{b^6}{2 a^3\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\frac{-23 a^2 b^5\,\text{Sin}[c+d x]-11 b^7\,\text{Sin}[c+d x]}{4 a^5\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\sqrt{\text{Tan}[c+d x]}\right)\Big/$$

$$\left(d\,(a+b\,\text{Tan}[c+d x])^3\right)+\frac{1}{8 a^4\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,d\,(a+b\,\text{Tan}[c+d x])^3}$$

$$\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3$$

$$\left(\left(2\,(-4 a^6+28 a^4 b^2+67 a^2 b^4+35 b^6)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\text{Csc}[c+d x]\,\text{Sec}[c+d x]^3\right.\right.$$

$$\left.(a+b\,\text{Tan}[c+d x])\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)^2\right)+$$

$$\frac{1}{(a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)}\,2 a^5\,b\,\text{Csc}[c+d x]^2$$

$$\left(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\,(a+b\,\text{Tan}[c+d x])-$$

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1-\text{Tan}[c+d x]^2)\,(1+\text{Tan}[c+d x]^2)\right)\right)$$

$$(-4 a^6+4 a^4 b^2)\,\text{Cos}[2\,(c+d x)]\,\text{Csc}[c+d x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$

$$\sqrt{2}\,\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^3\,(a+b\,\text{Tan}[c+d x])\Bigg)$$

Problem 608: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d x]}\,dx$$

Optimal (type 3, 231 leaves, 14 steps):

$$-\frac{\sqrt{i a-b}\ \text{ArcTan}\left[\frac{\sqrt{i a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{\left(a^2+8 b^2\right) \text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{4 b^{3/2} d}+\frac{\sqrt{i a+b}\ \text{ArcTanh}\left[\frac{\sqrt{i a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{a \sqrt{\text{Tan}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}{4 b d}+\frac{\sqrt{\text{Tan}[c+d x]}\ \left(a+b\,\text{Tan}[c+d x]\right)^{3/2}}{2 b d}$$

Result (type 4, 49 190 leaves): Display of huge result suppressed!

Problem 609: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d x]^{3/2} \sqrt{a+b\,\text{Tan}[c+d x]}\, dx$$

Optimal (type 3, 184 leaves, 13 steps):

$$\frac{i \sqrt{i a-b}\ \text{ArcTan}\left[\frac{\sqrt{i a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}+\frac{a\,\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{b}\ d}+\frac{i \sqrt{i a+b}\ \text{ArcTanh}\left[\frac{\sqrt{i a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}+\frac{\sqrt{\text{Tan}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}{d}$$

Result (type 4, 9406 leaves):

$$\frac{\sqrt{\text{Tan}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}{d}+$$

$$\left(2 \sqrt{a^2+b^2}\ \left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left.a\,\text{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/$$

$$\left(\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\left.\frac{b\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2(c+d\,x)]\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\bigg/$$

$$\left(d\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{\text{Sec}[c+d\,x]}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\sqrt{\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(1\bigg/\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,\mathrm{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)\,\text{Sec}[c+d\,x]^2\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}+$$

$$\left(a\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,\mathrm{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) + \left(2\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right) \sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2} \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2 \text{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\right) \Big/$$

$$\left(2\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Tan}[c+d\,x]}\right) -$$

$$\left(\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] +\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,i\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\;\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\;\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{a^2+b^2}\;\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\,\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,+$$

$$\left(\sqrt{a^2+b^2}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,\mathrm{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\right.$$

$$\left.\left.\frac{1}{a^2+b^2}a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{a^2+b^2}\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)-\right.$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(2\sqrt{2}\ \sqrt{a^2+b^2}\ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(2\sqrt{2}\ \sqrt{a^2+b^2}\ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(\mathrm{i}\,a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(2\sqrt{2}\sqrt{a^2+b^2}\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(2\sqrt{2}\sqrt{a^2+b^2}\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(4\sqrt{2}\sqrt{a^2+b^2}\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)+$$

$$\Bigg(\sqrt{a^2+b^2}\Bigg(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+\right.$$

$$\left.\left.\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\right)\Bigg/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\right.$$

$$\left.\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)\right)$$

Problem 610: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \sqrt{\mathrm{Tan}[c+d\,x]}\ \sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\ dx$$

Optimal (type 3, 151 leaves, 11 steps):

$$\frac{\sqrt{i\,a-b}\ \mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{2\sqrt{b}\ \mathrm{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{\sqrt{i\,a+b}\ \mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}$$

Result (type 4, 6279 leaves):

$$\left(4\,a\left(\left(b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-i\,a+b\right)\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathrm{i}\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\ d\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(-\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,a\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathbb{i}\,a+b\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\mathbb{i}\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\right.$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\,\text{Sec}[c+d\,x]^{5/2}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;+$$

$$\left(a^2\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left((-\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(\mathrm{i}\, a + b + \sqrt{a^2+b^2}\right) + \left(\mathrm{i}\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a + b + \sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a + b + \sqrt{a^2+b^2}\right) -$$

$$\left(b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right) \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right) \Big/$$

$$\left(\sqrt{a^2+b^2}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right) +$$

$$\left(2\,a\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathrm{i}\,a+b\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\mathrm{i}\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Bigg/\left(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,a\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)+\left(\left(-\text{i}\,a+b\right)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\text{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(i\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\,\text{Sec}[c+d\,x]^{3/2}$$

$$\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,a\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathrm{i}\,a+b\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\mathrm{i}\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\right.$$

$$\left.\frac{1}{a^2+b^2}a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,a\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)\right)-$$

$$\left(a\left(-i\,a+b\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+\right.$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-\right.$$

$$\left(\mathrm{i}\,a\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+\right.$$

$$\left(a\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)\right)$$

Problem 611: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 115 leaves, 7 steps):

$$-\frac{i\sqrt{i\,a-b}\;\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{i\sqrt{i\,a+b}\;\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}$$

Result (type 4, 6022 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(-i\,a+b)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(-i\,a-b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)^2}4\,b\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right.$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a+b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\ +$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\mathbb{i}\,a-b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\left(a\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\;\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\mathbb{i}\,a-b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d x]}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d x]\right)\right)-\left(a\sqrt{\frac{1}{1+\text{Cos}[c+d x]}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\text{i}\,a+b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\left(-\text{i}\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\text{Sec}[c+d x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d x]\right)\right)+$$

$$\left(\sqrt{\frac{1}{1+\operatorname{Cos}[c+d\,x]}}\;\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\,a\operatorname{EllipticF}\left[\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathrm{i}\,a+b)\operatorname{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(-\mathrm{i}\,a-b)$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\operatorname{Sec}[c+d\,x]\,\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\;\sqrt{\operatorname{Tan}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\operatorname{Sec}[c+d\,x]}\;\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;(a+b\operatorname{Tan}[c+d\,x])\right)+$$

$$\left(2\operatorname{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{1}{1+\operatorname{Cos}[c+d\,x]}}\;\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,a\operatorname{EllipticF}\left[\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathrm{i}\,a+b)\operatorname{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a-b\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[c+d\,x\right]\left(b\,\text{Cos}\left[c+d\,x\right]-a\,\text{Sin}\left[c+d\,x\right]\right)\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}\left[c+d\,x\right]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}\left[c+d\,x\right]}\ \sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\ \left(a+b\,\text{Tan}\left[c+d\,x\right]\right)\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}\left[c+d\,x\right]}\ \left(a+b\,\text{Tan}\left[c+d\,x\right]\right)}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{1}{1+\text{Cos}\left[c+d\,x\right]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a+b\right)\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a-b\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d x]\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}$$

$$\sqrt{\text{Tan}[c+d x]}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d x]}\,(a+b\,\text{Tan}[c+d x])}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Sec}[c+d x]\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}$$

$$\left(\frac{a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}}-\right.$$

$$\left(i\,(-i\,a+b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-$$

$$\left(i\,(-i\,a-b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\,\sqrt{\text{Tan}[c+d x]}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(1+\text{Sec}[c+d x])^{3/2}\,(a+b\,\text{Tan}[c+d x])}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\text{Tan}[c+d\,x]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\left(\frac{1}{1+\text{Cos}[c+d\,x]}\right)^{3/2}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \text{Tan}[c+d\,x]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a+b)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(-i\,a-b)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \text{Tan}[c+d\,x]^{3/2}\Bigg)\Bigg)$$

Problem 612: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 139 leaves, 8 steps):

$$-\frac{\sqrt{i a-b}\ \text{ArcTan}\left[\frac{\sqrt{i a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}+\frac{\sqrt{i a+b}\ \text{ArcTanh}\left[\frac{\sqrt{i a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{2\sqrt{a+b\,\text{Tan}[c+d x]}}{d\sqrt{\text{Tan}[c+d x]}}$$

Result (type 4, 4382 leaves):

$$-\frac{2\sqrt{a+b\,\text{Tan}[c+d x]}}{d\sqrt{\text{Tan}[c+d x]}}-$$

$$\left(2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+i b)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-i b)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(\frac{b\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.$$

$$\frac{b\,\text{Cos}[2(c+d x)]\ \text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-$$

$$\left.\left.\frac{a\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[2(c+d x)]\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\ \operatorname{Tan}[c+d x]^{3/2}}\right.$$

$$\sqrt{2}\ \operatorname{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\, b \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\, b\right) \operatorname{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-\left(a-\mathbb{i}\, b\right)$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\operatorname{Sec}[c+d x]^{5/2} \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}+\left(\sqrt{2}\ a \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathbb{i}\, b \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\, b\right) \operatorname{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(-\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{2}\ \left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$3\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{3/2}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\, b\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+\mathrm{i}\, b)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-\mathrm{i}\, b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\, \text{Sin}[c+d x]\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}}$$

$$2\sqrt{2}\, \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\, \left(-\left(\left(b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\right/\right.$$

$$\left.\left(4\sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) -$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\, b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg/ \left(4\left(1-\mathrm{i}\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) +$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\, b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg/$$

$$\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\sqrt{\mathrm{Tan}[c+d\,x]}\right)$$

Problem 613: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\mathrm{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 181 leaves, 10 steps):

$$\frac{i\sqrt{i\,a-b}\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{i\sqrt{i\,a+b}\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}-\frac{2\,b\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,a\,d\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4256 leaves):

$$\left(2\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\mathrm{Csc}[c+d\,x]\left(i\,a\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(-i\,a+b)\,\mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-\mathrm{i}\,a-b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\,\sqrt{\text{Sec}[c+d\,x]}\right.$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,a+b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\left(-\mathrm{i}\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\left(\sqrt{2}\ a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\, a\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a+b)\, \text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a-b)\, \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d\,x]}\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right) + \left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\mathbb{i}\, a\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a+b)\, \text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a-b)\, \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\right.$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{2}\,\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathrm{i}\,a+b)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(-\mathrm{i}\,a-b)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathbb{i}\,a+b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathbb{i}\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathbb{i}\,a+b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathbb{i}\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-i\,a+b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-i\,a-b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(i\left(-i\,a+b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathbb{i}\left(-\mathbb{i}\,a-b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1+\mathbb{i}\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Bigg)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}\right.$$

$$\left.\left.\left.\sqrt{\mathrm{Tan}\left[c+d\,x\right]}\right)\right)\right)+$$

$$\frac{\left(\frac{2}{3}-\frac{2\,b\,\mathrm{Cot}[c+d\,x]}{3\,a}-\frac{2}{3}\,\mathrm{Csc}\left[c+d\,x\right]^2\right)\sqrt{\mathrm{Tan}\left[c+d\,x\right]}\,\sqrt{a+b\,\mathrm{Tan}\left[c+d\,x\right]}}{d}$$

Problem 614: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\mathrm{Tan}\left[c+d\,x\right]}}{\mathrm{Tan}\left[c+d\,x\right]^{7/2}}\,dx$$

Optimal (type 3, 221 leaves, 10 steps):

$$\frac{\sqrt{\mathbb{i}\,a-b}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathbb{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{\sqrt{\mathbb{i}\,a+b}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathbb{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{2\sqrt{a+b\,\mathrm{Tan}\left[c+d\,x\right]}}{5\,d\,\mathrm{Tan}\left[c+d\,x\right]^{5/2}}-\frac{2\,b\sqrt{a+b\,\mathrm{Tan}\left[c+d\,x\right]}}{15\,a\,d\,\mathrm{Tan}\left[c+d\,x\right]^{3/2}}+\frac{2\left(15\,a^2+2\,b^2\right)\sqrt{a+b\,\mathrm{Tan}\left[c+d\,x\right]}}{15\,a^2\,d\,\sqrt{\mathrm{Tan}\left[c+d\,x\right]}}$$

Result (type 4, 4462 leaves):

$$\left(2\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathbb{i}\,b\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathbb{i}\,b)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\left.(a-\mathbb{i}\,b)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\left(-\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{b\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,b\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathbb{i}\,b)\,\text{EllipticPi}\Big[\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}\left[c+d\,x\right]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\left(\sqrt{2}\,a\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)\,\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}\left[c+d\,x\right]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\mathrm{Tan}\left[c+d\,x\right]}\right)-$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\left(-\mathbb{i}\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/\left(\sqrt{2}\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\sqrt{\text{Tan}\left[c+d\,x\right]}\right)+$$

$$\frac{1}{\sqrt{2}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\sqrt{\text{Tan}\left[c+d\,x\right]}}$$

$$3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-(a-\text{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-(a-\text{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)-$$

$$\left(\mathbb{i}\,(a+\mathbb{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1-\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+$$

$$\left(\mathbb{i}\,(a-\mathbb{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/$$

$$\left(4\left(1+\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d x]}\Bigg)+$$

$$\frac{1}{d}\left(\frac{2\,b}{15\,a}+\frac{4\left(9\,a^2\,\text{Cos}[c+d x]+b^2\,\text{Cos}[c+d x]\right)\text{Csc}[c+d x]}{15\,a^2}-\right.$$

$$\frac{2\,b\,\text{Csc}[c+d x]^2}{15\,a}-$$

$$\frac{2}{5}$$

$$\text{Cot}[c+d x]$$

$$\left.\frac{\text{Csc}[c+d x]^2\Big)}{\sqrt{\text{Tan}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}\right.$$

Problem 615: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d x]^{5/2}\,(a+b\,\text{Tan}[c+d x])^{3/2}\,dx$$

Optimal (type 3, 280 leaves, 15 steps):

$$\frac{i\,(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{a\,(a^2+24\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{8\,b^{3/2}\,d}-$$
$$\frac{i\,(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{(a^2+8\,b^2)\,\sqrt{\text{Tan}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{8\,b\,d}-$$
$$\frac{a\,\sqrt{\text{Tan}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{3/2}}{12\,b\,d}+\frac{\sqrt{\text{Tan}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{5/2}}{3\,b\,d}$$

Result (type 4, 65 125 leaves): Display of huge result suppressed!

Problem 616: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d x]^{3/2}\,(a+b\,\text{Tan}[c+d x])^{3/2}\,dx$$

Optimal (type 3, 226 leaves, 14 steps):

$$\frac{(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}+$$
$$\frac{(3\,a^2-8\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{4\,\sqrt{b}\,d}+\frac{(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}+$$
$$\frac{3\,a\,\sqrt{\text{Tan}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{4\,d}+\frac{\sqrt{\text{Tan}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{3/2}}{2\,d}$$

Result (type 4, 59 626 leaves): Display of huge result suppressed!

Problem 617: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Tan}[c+d\,x]}\;(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 186 leaves, 13 steps):

$$-\frac{i\,(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{3\,a\,\sqrt{b}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{i\,(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{b\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 12017 leaves):

$$\frac{b\,\text{Cos}[c+d\,x]\,\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}+$$

$$\left(2\sqrt{a^2+b^2}\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,b\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)\Big/$$

$$\Bigg(d\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\ \text{Sec}[c+d\,x]^{3/2}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2$$

$$\sqrt{\text{Tan}[c+d\,x]}$$

$$\Bigg(-\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}\right)\right)$$

$$\sqrt{a^2+b^2}\ \Bigg(-b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]+$$

$$\Bigg(3\,a\,b\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\Bigg(2\,a^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\,\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\,\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\,\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2 b^2 \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(3 a b\right.$$

$$\left.\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right) \text{Sec}[c+d x]^2 \sqrt{\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Sec}[c+d x]}$$

$$\sqrt{\frac{a \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}{a^2+b^2}} \sqrt{\frac{a \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} +$$

$$\left(a\sqrt{a^2+b^2}\left(-b \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] +\right.\right.$$

$$\left(3 a b \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)\Big/$$

$$\left(2\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{a^2+b^2}\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\Bigg(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\Bigg(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\Bigg(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{a^2+b^2}\ \text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\left(\sqrt{a^2+b^2}\ \left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\sqrt{a^2+b^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)-$$

$$\left(3\,a^2\,b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a^3\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,b^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a^2\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a^3 \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(\mathrm{i} a^2 b \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(\sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(a b^2 \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) +$$

$$\left(3 a^2 b \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(a+b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)\Bigg)+$$

$$\left(\sqrt{a^2+b^2}\;\left(-b\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathbb{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\right.$$

$$\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Bigg)\Bigg)$$

Problem 619: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 145 leaves, 8 steps):

$$\frac{i\,(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{i\,(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4519 leaves):

$$-\frac{2\,a\,\text{Cos}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\sqrt{\text{Tan}[c+d\,x]}}-$$

$$\left(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\left(\frac{a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a\,b\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}\ \text{Tan}[c+d x]^{3/2}}\right.$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\,(c+d x)\right]^2 \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}\,(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2 a \,\text{Cot}\left[\frac{1}{2}\,(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\, i\, a\, b\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\, b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\, b)^2\, \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \text{Sec}[c+d x]^{5/2}\, \text{Tan}\left[\frac{1}{2}\,(c+d x)\right]^{3/2}+$$

$$\left(\sqrt{2}\ a \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}\,(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \left(-2\, i\, a\, b\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\, b)^2\, \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\, b)^2$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2 a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\left(a\sqrt{2+\frac{2 a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\left(-2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^2\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\right)\Bigg/\left(\sqrt{2}\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\sqrt{\text{Tan}[c+d x]}\right)-$$

$$\frac{1}{\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(-2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^2$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(a\,b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)\right/\right.$$

$$\left.\left.\left(2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^{3/2}\right)\right)-\right.$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$
$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$
$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)$$

Problem 620: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{\mathrm{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 173 leaves, 9 steps):

$$\frac{(\mathrm{i}\,a-b)^{3/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+$$
$$\frac{(\mathrm{i}\,a+b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}-\frac{8\,b\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4677 leaves):

$$-\left(\left(\left(2\,\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Cos}[c+d\,x]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\left(-\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\Bigg)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\mathbb{i}\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(\mathbb{i}\sqrt{2}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(\mathrm{i}\,a\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\left(a^2-b^2\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(1\Big/\left(\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$3\,\mathrm{i}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i b)^2 \,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}+$$

$$\left(1\middle/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x])^{3/2} \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$i \sqrt{2} \,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i b)^2 \,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\ (b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x])\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}$$

$$2\,i\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^2\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}(c+d x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}$$

$$i\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(i\,(a^2-b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Bigg)+$$

$$\left(\mathrm{Cos}[c+d\,x]\left(\frac{2\,a}{3}-\frac{8}{3}\,b\,\mathrm{Cot}[c+d\,x]-\frac{2}{3}\,a\,\mathrm{Csc}[c+d\,x]^2\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 621: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{\mathrm{Tan}[c+d\,x]^{7/2}}\,dx$$

Optimal (type 3, 224 leaves, 10 steps):

$$-\frac{i\,(i\,a-b)^{3/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{i\,(i\,a+b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{2\,a\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}-\frac{4\,b\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+\frac{2\,(5\,a^2-b^2)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,a\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4596 leaves):

$$\left(2\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Cos}[c+d\,x]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-2\,i\,a\,b\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\left.(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\left(-\frac{a\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,b\,\mathrm{Cos}\big[2\,(c+d\,x)\big]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b^2\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\,\big(a+b\,\mathrm{Tan}[c+d\,x]\big)^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\big)^2\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]^{3/2}}\right.$$

$$\sqrt{2}\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}\left[c+d\,x\right]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(\sqrt{2}\ a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}\left[c+d\,x\right]}\right)-$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{2}\,\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + \left(a+\mathbb{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(a\,b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)-$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1+i\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(\operatorname{Cos}[c+d x]\left(\frac{4 b}{5}+\frac{2\left(6 a^2\operatorname{Cos}[c+d x]-b^2\operatorname{Cos}[c+d x]\right)\operatorname{Csc}[c+d x]}{5 a}-\right.\right.$$

$$\left.\frac{4}{5} b\operatorname{Csc}[c+d x]^2-\frac{2}{5} a\operatorname{Cot}[c+d x]\operatorname{Csc}[c+d x]^2\right)$$

$$\left.\sqrt{\operatorname{Tan}[c+d x]}\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}\right)\Big/$$

$$\left(d\left(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]\right)\right)$$

Problem 622: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}}{\operatorname{Tan}[c+d x]^{9/2}}\,dx$$

Optimal (type 3, 266 leaves, 11 steps):

$$-\frac{(i a-b)^{3/2}\operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]}{d}-\frac{(i a+b)^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]}{d}-$$

$$\frac{2 a\sqrt{a+b\operatorname{Tan}[c+d x]}}{7 d\operatorname{Tan}[c+d x]^{7/2}}-\frac{16 b\sqrt{a+b\operatorname{Tan}[c+d x]}}{35 d\operatorname{Tan}[c+d x]^{5/2}}+$$

$$\frac{2\left(35 a^2-3 b^2\right)\sqrt{a+b\operatorname{Tan}[c+d x]}}{105 a d\operatorname{Tan}[c+d x]^{3/2}}+\frac{4 b\left(70 a^2+3 b^2\right)\sqrt{a+b\operatorname{Tan}[c+d x]}}{105 a^2 d\sqrt{\operatorname{Tan}[c+d x]}}$$

Result (type 4, 4760 leaves):

$$\left(2 i\sqrt{2}\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Cos}[c+d x]\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2 a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2-b^2\right)\operatorname{EllipticF}\left[i\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\dot{\imath}\, b\right)^2 \text{EllipticPi}\left[-\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a}, \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$\left.\left(a-\dot{\imath}\, b\right)^2 \text{EllipticPi}\left[\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a}, \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} -\right.$$

$$\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} +$$

$$\frac{a^2\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} -$$

$$\frac{b^2\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} +$$

$$\left.\left.\frac{a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\dot{\imath}\sqrt{2}\;\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+\dot{\imath}\, b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(\mathbb{i}\,\sqrt{2}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\left(\left(a^2-b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\, a \sqrt{2+\frac{2\, a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \left(\left(a^2-b^2\right) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\, b)^2 \operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\, b)^2$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\operatorname{Sec}[c+d x]}\right) \Bigg/ \left(\sqrt{2}\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\frac{1}{\sqrt{2} \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}$$

$$3\, \mathrm{i} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2\, a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\, b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}}$$

$$i\,\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{i}\,\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\ \text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\text{i}\,b)^2\ \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\text{i}\,\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\ \text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(i\left(a^2-b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(i\left(a+i\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(i\left(a-i\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/$$

$$\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(\mathrm{Cos}[c+d\,x]\left(-\frac{2\left(50\,a^2-3\,b^2\right)}{105\,a}+\frac{4\left(82\,a^2\,b\,\mathrm{Cos}[c+d\,x]+3\,b^3\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]}{105\,a^2}+\right.\right.$$

$$\frac{2\left(65\,a^2-3\,b^2\right)\mathrm{Csc}[c+d\,x]^2}{105\,a}-$$

$$\left.\frac{16}{35}\,b\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2-\frac{2}{7}\,a\,\mathrm{Csc}[c+d\,x]^4\right)$$

$$\left.\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\right)\Big/$$

$$\left(d\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\right)$$

Problem 623: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^{5/2}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 3, 332 leaves, 16 steps):

$$\frac{(i\,a-b)^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{\left(5\,a^4+240\,a^2\,b^2-128\,b^4\right)\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{64\,b^{3/2}\,d}-$$

$$\frac{(i\,a+b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{a\left(5\,a^2+112\,b^2\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{64\,b\,d}-$$

$$\frac{\left(5\,a^2+48\,b^2\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}{96\,b\,d}-$$

$$\frac{a\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{5/2}}{24\,b\,d}+\frac{\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{7/2}}{4\,b\,d}$$

Result (type 4, 85 894 leaves): Display of huge result suppressed!

Problem 624: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 277 leaves, 15 steps):

$$-\frac{i\,(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{5\,a\,(a^2-8\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{8\,\sqrt{b}\,d}-\frac{i\,(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{(11\,a^2-8\,b^2)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{8\,d}+\frac{13\,a\,b\,\text{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{12\,d}+\frac{b^2\,\text{Tan}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d}$$

Result (type 4, 75 543 leaves): Display of huge result suppressed!

Problem 625: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 231 leaves, 14 steps):

$$-\frac{(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{\sqrt{b}\,(15\,a^2-8\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{4\,d}+\frac{(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{9\,a\,b\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,d}+\frac{b^2\,\text{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{2\,d}$$

Result (type 4, 70 144 leaves): Display of huge result suppressed!

Problem 626: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 188 leaves, 13 steps):

$$\frac{i\,(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{5\,a\,b^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{i\,(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{b^2\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 65 421 leaves): Display of huge result suppressed!

Problem 627: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 183 leaves, 13 steps):

$$\frac{(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{2\,b^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 60 093 leaves): Display of huge result suppressed!

Problem 628: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}}{\text{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 182 leaves, 9 steps):

$$-\frac{i\,(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{i\,(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{2\,a^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d\,\text{Tan}[c+d\,x]^{3/2}}-\frac{14\,a\,b\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4835 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-i\, a\left(a^2-3\,b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$i\left(a+i\,b\right)^3\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\left(i\,a+b\right)^3\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(-\frac{a^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{3\,a\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^3\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left(3\,a\,b^2\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\left(3\,a^2\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\right.$$
$$\left.\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left.\left.\frac{b^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(a+\mathbb{i}\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(\mathbb{i}\,a+b\right)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(-\mathbb{i}\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\right[\right.\right.$$

$$\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(a+\mathbb{i}\,b\right)^3\,\text{EllipticPi}\Big[$$

$$-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(\mathbb{i}\,a+b\right)^3$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right) \Bigg/ \left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\left(-i\,a\left(a^2-3\,b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\left(a+i\,b\right)^3\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(i\,a+b\right)^3$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right) \Bigg/ \left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\text{i}\,a\left(a^2-3\,b^2\right)\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\text{i}\left(a+\text{i}\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(\text{i}\,a+b\right)^3\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\text{i}\,a\left(a^2-3\,b^2\right)\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\text{i}\left(a+\text{i}\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(\mathbb{i}\,a+b\right)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,a\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\left(a+\mathbb{i}\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(\mathbb{i}\,a+b\right)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,a\,(a^2-3\,b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(\mathrm{i}\,a+b)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(-\left(\left(a\,(a^2-3\,b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\middle/\right.\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left((a+\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(\mathrm{i}\,a+b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)+$$

$$\left(\mathrm{Cos}[c+d\,x]^2\left(\frac{2a^2}{3}-\frac{14}{3}a\,b\,\mathrm{Cot}[c+d\,x]-\frac{2}{3}a^2\,\mathrm{Csc}[c+d\,x]^2\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right)$$

Problem 629: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}{\mathrm{Tan}[c+d\,x]^{7/2}}\,dx$$

Optimal (type 3, 219 leaves, 10 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{(\mathrm{i}\,a+b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2a^2\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}-\frac{22\,a\,b\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+\frac{2\left(15a^2-23b^2\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4853 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{i}\,b\,(-3\,a^2+b^2)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\text{i}\,b)^3\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\text{i}\,b)^3\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(-\frac{3\,a^2\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{b^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\left(3\,a^2\,b\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\right.$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\frac{b^3\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(3\,a\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left.\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,b\,\left(-3\,a^2+b^2\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\mathrm{i}\,b\,\left(-3\,a^2+b^2\right)\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\left(\mathrm{i}\,b\left(-3\,a^2+b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}$$

$$3 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\, b\left(-3 a^2+b^2\right) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\, b)^3\right.$$

$$\operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\, b)^3 \operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^{3/2} \sqrt{\operatorname{Tan}[c+d x]}}$$

$$2 \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\, b\left(-3 a^2+b^2\right) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\, b)^3\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-i\,b)^3\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}\,4\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\,b\left(-3\,a^2+b^2\right)\,\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+i\,b)^3\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-i\,b)^3\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,b\,(-3\,a^2+b^2)\ \text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\text{i}\,b)^3\ \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \text{Sec}[c+d\,x]^{3/2}\ \text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\ \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(b\,(-3\,a^2+b^2)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\text{i}\,(a+\text{i}\,b)^3\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)+$$

$$\left(i\left(a-i\,b\right)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg)\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(\text{Cos}[c+d\,x]^2\left(\frac{22\,a\,b}{15}+\frac{2}{15}\left(18\,a^2\,\text{Cos}[c+d\,x]-23\,b^2\,\text{Cos}[c+d\,x]\right)\text{Csc}[c+d\,x]-\right.$$

$$\left.\frac{22}{15}\,a\,b\,\text{Csc}[c+d\,x]^2-\frac{2}{5}\,a^2\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]^2\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Bigg)\Bigg/$$

$$\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)$$

Problem 630: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}{\text{Tan}[c+d\,x]^{9/2}}\,dx$$

Optimal (type 3, 270 leaves, 11 steps):

$$\frac{i\left(i\,a-b\right)^{5/2}\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{i\left(i\,a+b\right)^{5/2}\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{2\,a^2\sqrt{a+b\,\text{Tan}[c+d\,x]}}{7\,d\,\text{Tan}[c+d\,x]^{7/2}}-\frac{6\,a\,b\sqrt{a+b\,\text{Tan}[c+d\,x]}}{7\,d\,\text{Tan}[c+d\,x]^{5/2}}+$$

$$\frac{2\left(7\,a^2-9\,b^2\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}}{21\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{2\,b\left(49\,a^2-3\,b^2\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}}{21\,a\,d\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4921 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(\mathbb{i}\,a-b)^3\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\mathbb{i}\,(a-\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\left(\frac{a^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{3\,a\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^3\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(3\,a\,b^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\left(3\,a^2\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\right.$$
$$\left.\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left.\left.\frac{b^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\mathrm{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,a\left(a^2-3\,b^2\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a-b\right)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathrm{i}\left(a-\mathrm{i}\,b\right)^3\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\left(\mathrm{i}\,a\left(a^2-3\,b^2\right)\mathrm{EllipticF}\left[\right.\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a-b\right)^3\mathrm{EllipticPi}\left[\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-i\,(a-i\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \left(i\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(i\,a-b)^3\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-i\,(a-i\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a-b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathbb{i}\,(a-\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a-b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathbb{i}\left(a-\mathbb{i}\,b\right)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathbb{i}\,a-b\right)^3$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathbb{i}\left(a-\mathbb{i}\,b\right)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\text{i}\,a-b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{i}\,(a-\text{i}\,b)^3\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\left(a\,(a^2-3\,b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\text{i}\,(\text{i}\,a-b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)-$$

$$\left((a-\mathrm{i}\,b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Bigg)\,\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(\mathrm{Cos}[c+d\,x]^2\,\Bigg(-\frac{2}{21}\,\left(10\,a^2-9\,b^2\right)+\frac{2\,\left(58\,a^2\,b\,\mathrm{Cos}[c+d\,x]-3\,b^3\,\mathrm{Cos}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]}{21\,a}+$$

$$\frac{2}{21}\,\left(13\,a^2-9\,b^2\right)\,\mathrm{Csc}[c+d\,x]^2-$$

$$\frac{6}{7}\,a\,b\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2-\frac{2}{7}\,a^2\,\mathrm{Csc}[c+d\,x]^4\Bigg)$$

$$\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{5/2}\Bigg)\Bigg/$$

$$\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)$$

Problem 631: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{5/2}}{\mathrm{Tan}[c+d\,x]^{11/2}}\,dx$$

Optimal (type 3, 318 leaves, 12 steps):

$$\frac{(\mathrm{i}\, a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{(\mathrm{i}\, a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-$$

$$\frac{2 a^2\sqrt{a+b\,\text{Tan}[c+d x]}}{9 d\,\text{Tan}[c+d x]^{9/2}}-\frac{38 a b\sqrt{a+b\,\text{Tan}[c+d x]}}{63 d\,\text{Tan}[c+d x]^{7/2}}+\frac{2\left(21 a^2-25 b^2\right)\sqrt{a+b\,\text{Tan}[c+d x]}}{105 d\,\text{Tan}[c+d x]^{5/2}}+$$

$$\frac{2 b\left(231 a^2-5 b^2\right)\sqrt{a+b\,\text{Tan}[c+d x]}}{315 a d\,\text{Tan}[c+d x]^{3/2}}-\frac{2\left(315 a^4-483 a^2 b^2-10 b^4\right)\sqrt{a+b\,\text{Tan}[c+d x]}}{315 a^2 d\sqrt{\text{Tan}[c+d x]}}$$

Result (type 4, 4945 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Cos}[c+d x]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\, b\left(-3 a^2+b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\, b)^3\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a-\mathrm{i}\, b)^3\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(\frac{3 a^2 b\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\right.$$

$$\frac{b^3\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\left(3 a^2 b\,\text{Cos}[2(c+d x)]\,\text{Csc}[c+d x]\right.$$

$$\left.\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}\right)\Big/\left(2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)-$$

$$\frac{b^3\,\text{Cos}[2(c+d x)]\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-$$

$$\frac{a^3\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[2(c+d x)]\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+$$

$$\left(3 a b^2\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[2(c+d x)]\sqrt{\text{Tan}[c+d x]}\right)\Big/$$

$$\left.\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-i\,b\left(-3\,a^2+b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-i\,b\right)^3\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\left(-i\,b\left(-3\,a^2+b^2\right)\text{EllipticF}\right[\right.\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)^3$$

$$\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg(\Big(b-\sqrt{a^2+b^2}\Big)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(a\,\sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\Bigg(-\mathrm{i}\,b\,\big(-3\,a^2+b^2\big)\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)^3$$

$$\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}[c+d x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-i\,b\left(-3a^2+b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-i\,b)^3\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}\sqrt{\text{Tan}[c+d x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\, b\left(-3 a^2+b^2\right) \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\, b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\, b)^3 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\,(b \text{Cos}[c+d x]-a \text{Sin}[c+d x]) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}} 4 \text{Cos}\left[\frac{1}{2}(c+d x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\, b\left(-3 a^2+b^2\right) \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\, b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\, b)^3 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,b\,(-3\,a^2+b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;\left(-\left(\left(b\,(-3\,a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left(4 \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg) +$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^3 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right) -$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^3 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\ \sqrt{\mathrm{Tan}[c+d\,x]}\ \Bigg) + \left(\mathrm{Cos}[c+d\,x]^2\left(-\frac{2\,b\,(326\,a^2-5\,b^2)}{315\,a} - \right.\right.$$

$$\frac{1}{315\,a^2}2\,\left(413\,a^4\,\mathrm{Cos}[c+d\,x]-558\,a^2\,b^2\,\mathrm{Cos}[c+d\,x]-10\,b^4\,\mathrm{Cos}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]+$$

$$\frac{2\,b\,(421\,a^2-5\,b^2)\,\mathrm{Csc}[c+d\,x]^2}{315\,a}+$$

$$\frac{2}{315}\,\left(133\,a^2\,\mathrm{Cos}[c+d\,x]-75\,b^2\,\mathrm{Cos}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]^3-$$

$$\left.\frac{38}{63}\,a\,b\,\mathrm{Csc}[c+d\,x]^4-\frac{2}{9}\,a^2\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^4\right)$$

$$\left.\sqrt{\mathrm{Tan}[c+d\,x]}\ (a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\Bigg/$$

$$\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right)$$

Problem 632: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Tan}[c+d\,x]^{7/2}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 232 leaves, 14 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i a-b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{\sqrt{i a-b}\, d}+\frac{\left(3 a^2-8 b^2\right) \text{ArcTanh}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{4 b^{5/2} d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{\sqrt{i a+b}\, d}-$$

$$\frac{3 a \sqrt{\text{Tan}[c+d x]}\sqrt{a+b \text{Tan}[c+d x]}}{4 b^2 d}+\frac{\text{Tan}[c+d x]^{3/2}\sqrt{a+b \text{Tan}[c+d x]}}{2 b d}$$

Result (type 4, 11 359 leaves) :

$$\left(\sqrt{\text{Sec}[c+d x]}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\sqrt{\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{1}{2-2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right.$$

$$\sqrt{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\sqrt{\frac{a\left(a+2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(\sqrt{a^2+b^2}\left(-\left(\left(\left(3 a^2-8 b^2\right) \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(8 i b^2 \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) + \left(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(3\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(a+b+\sqrt{a^2+b^2}\right) - \left(8\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(3\,a\left(a^2+b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right/$$

$$\left.\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)$$

$$\left(-\frac{\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{3\,a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{8\,b^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\left.\left.\frac{\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right/$$

$$\left(2\,b^2\,d\,\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right.$$

$$\left(-\left(\left(\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(-b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.\right.\right.$$

$$\sqrt{\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\sqrt{a^2+b^2}\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(8\,\mathrm{i}\,b^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(8\,\mathrm{i}\,b^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(3\,a^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(a+b+\sqrt{a^2+b^2}\right)-$$

$$\Bigg(8\,b^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)-\Bigg(3\,a\,\left(a^2+b^2\right)\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\ \Big(b+\sqrt{a^2+b^2}-a\,\text{Tan}\Big[$$

$$\frac{1}{2}(c+d\,x)\Big]\Big)\Bigg)\Big/\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\ \text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(2\,b^2\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\ \left(-2\,b\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+a\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\right)\right)^2\Bigg)+$$

$$\Bigg(a\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(b\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2-a\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\right)$$

$$\sqrt{\frac{1}{2-2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\;\sqrt{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\;\left(\sqrt{a^2+b^2}\right.$$

$$\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\left(8\,\mathrm{i}\,b^2\,\mathrm{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(8\,\mathrm{i}\,b^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(3\, a^2\, \text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right) - \left(8\, b^2\, \text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(3\, a\, \left(a^2+b^2\right)\, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right) \Big/$$

$$\left.\left.\left(a^2+b\,\left(b+\sqrt{a^2+b^2}\right)-a\,\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right) \Big/ \left(4\, b^2\, \left(a^2+b^2\right)\right.$$

$$\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{\frac{a\,\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{1}{2-2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a\,\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\Bigg)\,\sqrt{a^2+b^2}$$

$$\Bigg(-\Bigg(\Bigg(\Bigg(\left(3\,a^2-8\,b^2\right)\,\mathrm{EllipticPi}\Big[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}\,-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\Bigg)-\Bigg(8\,\mathrm{i}\,b^2\,\mathrm{EllipticPi}\Big[$$

$$\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}\,-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/$$

$$\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(8\,\mathbb{i}\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(3\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)-\left(8\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(3\,a\left(a^2+b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\,\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\Big/$$

$$\left(4\,b^2\,\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right.$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\left(\sqrt{a^2+b^2}\right.$$

$$\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\Bigg)-\Bigg(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\Bigg(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\left.\left.\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\Bigg(3\,a^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)-\Bigg(8\,b^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)-$$

$$\Bigg(3\,a\,\left(a^2+b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]$$

$$\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Bigg/$$

$$\left(a^2+b\,\left(b+\sqrt{a^2+b^2}\right)-a\,\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(8\,b^2\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{3/2}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\left(\sqrt{a^2+b^2}\right.$$

$$\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\left(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(3\,a^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)-\left(8\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(3\,a\,\left(a^2+b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left.\left.\left(a^2+b\,\left(b+\sqrt{a^2+b^2}\right)-a\,\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\Big/$$

$$\left(2\,b^2\,\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right.$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\sqrt{a^2+b^2}\;\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.\right.\right.\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(8\,\mathrm{i}\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(8\,\mathbb{i}\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(3\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(8\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)-$$

$$\left(3\,a\left(a^2+b^2\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)$$

$$\left.\left(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2}-\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}\right)\right)\Big/$$

$$\left(4\,b^2\left(-\frac{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{3/2}\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\sqrt{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right.$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}{a^2+b^2}}$$

$$\left(\sqrt{a^2+b^2}\left(-\left(\left(\left(3\,a^2-8\,b^2\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.\right.\right.\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(8\,\mathbb{i}\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(8\,\mathbb{i}\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(3\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right) - \left(8\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(3\,a\left(a^2+b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right) \Big/$$

$$\left.\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)$$

$$\left(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}-\right.$$

$$\left.\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right) \Big/$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\right) \Big/$$

$$\left(4\,b^2\,\sqrt{-\frac{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\,\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{1}{2-2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right.$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\left(-\left(\left(3\,a^2\left(a^2+b^2\right)^{3/2}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left.\left(2\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right)\right)+$$

$$\left(3\,a^2\left(a^2+b^2\right)\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(2\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)+$$

$$\left(3\,a^2\sqrt{a^2+b^2}\ \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left(4\sqrt{2}\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.$$

$$\left(a^2+b\left(b+\sqrt{a^2+b^2}\right)-a\sqrt{a^2+b^2}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\sqrt{a^2+b^2}\left(\left(a\left(3\,a^2-8\,b^2\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\sqrt{a^2+b^2}\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)+\left(\mathrm{i}\,\sqrt{2}\,a\,b^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-\left(\mathrm{i}\,\sqrt{2}\,a\,b^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-\left(3\,a^3\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)+\left(\sqrt{2}\,a\,b^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(2\,b^2\,\sqrt{-\frac{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right.$$

$$\left.\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)+\left(\mathrm{Sec}\left[c+d\,x\right]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(-\frac{3\,a}{4\,b^2}+\frac{\mathrm{Tan}[c+d\,x]}{2\,b}\right)\right)\Big/\left(d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Problem 633: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Tan}[c+d\,x]^{5/2}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 188 leaves, 13 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}-\frac{a\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{b^{3/2}\,d}+$$

$$\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}+\frac{\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{b\,d}$$

Result (type 4, 7041 leaves):

$$\frac{\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\sqrt{\text{Tan}[c+d\,x]}}{b\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+$$

$$\left(2\,\sqrt{a^2+b^2}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-i\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}{2\,b\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\left.\frac{\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[2\left(c+d\,x\right)\right]\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Big/$$

$$\left(b\,d\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\ \sqrt{\text{Tan}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(\left(\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\ \text{Sec}[c+d\,x]^2\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left.\left(b\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}\right)\right)+$$

$$\left(a\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\ \sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\right)\Bigg/$$

$$\left(2\,b\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{a^2+b^2}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Sec}[c+d\,x]}\;\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right) \Big/$$

$$\left(b\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{b\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{a^2+b^2}\;\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\left(\sqrt{a^2+b^2}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\right.$$

$$\left.\left.\frac{1}{a^2+b^2}a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$

$$\left(b\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(b\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{a^2+b^2}\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)+$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)+$$

$$\left(\sqrt{a^2+b^2}\,\left(-\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\right.$$

$$\left.\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\right/$$

$$\left(b\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\right.$$

$$\left.\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)\right)$$

Problem 634: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{3/2}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 152 leaves, 12 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{i a-b}\;d}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{b}\;d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{i a+b}\;d}$$

Result (type 4, 6090 leaves):

$$\Bigg(4\sqrt{a^2+b^2}\Bigg(\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{i a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]}\;\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)}{a^2+b^2}}$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}[c+d\,x]\right)\Big/$$

$$\left(d\,\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\text{Tan}[c+d\,x]^{3/2}\right)\right)\,2\,\sqrt{a^2+b^2}\right.$$

$$\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+\right.\right.$$

$$\left.b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right) \operatorname{Sec}[c+d x]^2 \sqrt{\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]}$$

$$\sqrt{\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{a^2+b^2}} \sqrt{\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}+$$

$$\left(a \sqrt{a^2+b^2} \left(\operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/ \left(-a+b+\sqrt{a^2+b^2}\right)+\operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/ \left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{i a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]}$$

$$\left.\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}\right)\Big/$$

$$\left(\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(2\sqrt{a^2+b^2}\left(\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}\,2\sqrt{a^2+b^2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\;\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,+$$

$$\left(2\,\sqrt{a^2+b^2}\,\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+i\,\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-i\,\left(b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$4\,\sqrt{a^2+b^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)\right)-$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)+$$

$$\Bigg(2\,\sqrt{a^2+b^2}\,\Bigg(\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)+\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/$$

$$\left(a-\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Big(-\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]\,\text{Sec}[c+d\,x]\,\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]+$$

$$\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\Big)\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2}\ \sqrt{\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg)\Bigg)$$

Problem 635: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 115 leaves, 7 steps):

$$\frac{i\,\text{ArcTan}\Big[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{\sqrt{i\,a-b}\;d}-\frac{i\,\text{ArcTanh}\Big[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{\sqrt{i\,a+b}\;d}$$

Result (type 4, 2766 leaves):

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(d\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right.$$

$$\left(-\left(\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]^{5/2}\,\text{Sin}[c+d x]\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left.\left.\left(\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\ \text{Tan}[c+d x]^{3/2}\right)\right)+$$

$$\left(a\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]\right)\Big/$$

$$\left(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]^2\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\left(-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(2\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(\mathrm{i}\,a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-\mathrm{i}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(i\, a\, \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right) \Bigg/ \left(4\left(b+\sqrt{a^2+b^2}\right)\left(1+i\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\right)\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)$$

Problem 636: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 109 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}$$

Result (type 4, 422 leaves):

$$\left(2\,\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Problem 637: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 147 leaves, 9 steps):

$$-\frac{\mathrm{i}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{\mathrm{i}\,a-b}\,d}+\frac{\mathrm{i}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{\mathrm{i}\,a+b}\,d}-\frac{2\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{a\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 2820 leaves):

$$\left(2\,\left(\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(d\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\Bigg(\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\ \text{Tan}[c+d\,x]^{3/2}\right)-$$

$$\Bigg(a\,\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\left(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Big/$$

$$\left(\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\Bigg(2\,\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Big/\Bigg(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]^2\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\,\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\left(-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{3/2}\sqrt{\text{Tan}[c+d x]}\right)-$$

$$\Bigg(2\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(i\,a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-i\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(i\,a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1+i\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\left.\left.\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)\right)\Big/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Bigg)$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)-\frac{2\,\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Problem 638: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Tan}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 180 leaves, 10 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}-\frac{2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{4\,b\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a^2\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 6033 leaves):

$$\left(\left(\frac{2}{3\,a}+\frac{4\,b\,\text{Cot}[c+d\,x]}{3\,a^2}-\frac{2\,\text{Csc}[c+d\,x]^2}{3\,a}\right)\text{Sec}[c+d\,x]\right.$$
$$\left.\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)-$$

$$\left(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\left(-\frac{\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\left.\frac{\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\sqrt{1+\text{Sec}[c+d\,x]}\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\text{Sec}[c+d\,x]}\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\right.$$

$$4\,i\,b\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}-$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\ (a+b\,\text{Tan}[c+d\,x])\right)\right)$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}+$$

$$\left(i\,a\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d\,x]}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)\right)+\left(\text{i}\,a\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)\right)-$$

$$\left(\mathbb{i}\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)\right)-$$

$$\left(2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d\,x]\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)}$$

$$4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)}\,4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\left(-\left(\left(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(1+\mathrm{Sec}[c+d\,x])^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{1}{1+\mathrm{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^2\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\mathrm{Tan}[c+d\,x]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{1}{1+\mathrm{Cos}[c+d\,x]}\right)^{3/2}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\text{Tan}[c+d\,x]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\text{Sec}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

$$4\,\text{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\left.\text{Sec}[c+d x] \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]} \text{Tan}[c+d x]^{3/2}\right)\right)$$

Problem 639: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Tan}[c+d x]^{7/2} \sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Optimal (type 3, 229 leaves, 11 steps):

$$\frac{i \text{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{\sqrt{i a-b} d}-\frac{i \text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{\sqrt{i a+b} d}-$$
$$\frac{2 \sqrt{a+b \text{Tan}[c+d x]}}{5 a d \text{Tan}[c+d x]^{5/2}}+\frac{8 b \sqrt{a+b \text{Tan}[c+d x]}}{15 a^2 d \text{Tan}[c+d x]^{3/2}}+\frac{2\left(15 a^2-8 b^2\right) \sqrt{a+b \text{Tan}[c+d x]}}{15 a^3 d \sqrt{\text{Tan}[c+d x]}}$$

Result (type 4, 2900 leaves):

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$
$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\left.\sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x] \sqrt{1+\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\right) \Big/$$
$$\left(d \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{-\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right.$$
$$\left(-\left(\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.\right.\right.$$
$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\text{Tan}[c+d\,x]^{3/2}\right)\Bigg)+$$

$$\Bigg(a\,\Bigg(\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\Bigg(2\,\left(-b+\sqrt{a^2+b^2}\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left((a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]^2\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a^2 \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2\left(b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}-\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\left(-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{3/2} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\Bigg(2 \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}[c+d x] \sqrt{1+\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(\mathrm{i}\, a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-\mathrm{i} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(\mathrm{i}\, a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{i} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}$$

$$\sqrt{\operatorname{Tan}[c+d x]}\Bigg)\Bigg) \sqrt{a+b \operatorname{Tan}[c+d x]}\Bigg)+$$

$$\Bigg(\Bigg(-\frac{8 b}{15 a^2}+\frac{4\left(9 a^2 \operatorname{Cos}[c+d x]-4 b^2 \operatorname{Cos}[c+d x]\right) \operatorname{Csc}[c+d x]}{15 a^3}+\frac{8 b \operatorname{Csc}[c+d x]^2}{15 a^2}-$$

$$\frac{2 \operatorname{Cot}[c+d x] \operatorname{Csc}[c+d x]^2}{5 a}\Bigg)$$

$$\operatorname{Sec}[c+d x]\left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)$$

$$\sqrt{\operatorname{Tan}[c+d x]}\Bigg)\Bigg/\Bigg(d$$

$$\sqrt{a+b \operatorname{Tan}[c+d x]}\Bigg)$$

Problem 640: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{7/2}}{(a+b\,\text{Tan}[c+d x])^{3/2}}\,dx$$

Optimal (type 3, 250 leaves, 14 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a-b)^{3/2}\,d}-\frac{3\,a\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{b^{5/2}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a+b)^{3/2}\,d}-\frac{2\,a^2\,\text{Tan}[c+d x]^{3/2}}{b\,(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d x]}}+\frac{(3\,a^2+b^2)\,\sqrt{\text{Tan}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{b^2\,(a^2+b^2)\,d}$$

Result (type 4, 55 004 leaves): Display of huge result suppressed!

Problem 641: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{5/2}}{(a+b\,\text{Tan}[c+d x])^{3/2}}\,dx$$

Optimal (type 3, 195 leaves, 13 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a-b)^{3/2}\,d}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{b^{3/2}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a+b)^{3/2}\,d}-\frac{2\,a^2\,\sqrt{\text{Tan}[c+d x]}}{b\,(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 49 566 leaves): Display of huge result suppressed!

Problem 642: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{3/2}}{(a+b\,\text{Tan}[c+d x])^{3/2}}\,dx$$

Optimal (type 3, 154 leaves, 8 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a-b)^{3/2}\,d}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i a+b)^{3/2}\,d}+\frac{2\,a\,\sqrt{\text{Tan}[c+d x]}}{(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 4626 leaves):

$$-\left(\left(\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\text{i}\,a-b)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(-\text{i}\,a+b)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(-\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Bigg/\left(\left(a^2+\right.\right.$$

$$\left.b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d$$

$$\left(\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,a\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a-b)\,\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-i\,a+b)$$

$$\left.\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\left(\sqrt{2}\,a\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,a\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(-i\,a-b)\,\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a+b)\,\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\right.$$

$$\left.\left.\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\mathbb{i}\,a-b)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\right[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{2}\,(a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-i\,a+b\right)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\Bigg)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-i\,a-b\right)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-i\,a+b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a-b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a+b)$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,a-b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-i\,a+b\right)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}\left[c+d\,x\right]^{3/2}\,\text{Sin}\left[c+d\,x\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[c+d\,x\right]}\right)\right)$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}\left[c+d\,x\right]}\,\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(i\left(-i\,a-b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(i\left(-i\,a+b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\sqrt{\text{Tan}[c+d\,x]}\;(a+b\,\text{Tan}[c+d\,x])^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2$$
$$\left(\frac{2}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}-\frac{2\,b\,\text{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Big/\Big(d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\Big)$$

Problem 643: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 149 leaves, 8 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a-b)^{3/2}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a+b)^{3/2}\,d}-\frac{2\,b\,\sqrt{\text{Tan}[c+d\,x]}}{(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4628 leaves):

$$\Bigg(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a - i b) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] -$$

$$\left.(a + i b) \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right)$$

$$\text{Sec}[c + d x]^2 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x]) \text{Tan}\left[\frac{1}{2} (c + d x)\right]^{3/2}$$

$$\left(\left(\frac{b \text{Csc}[c + d x] \sqrt{\text{Sec}[c + d x]} \sqrt{\text{Tan}[c + d x]}}{2 (a - i b) (a + i b) \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}} + \right.\right.$$

$$\frac{b \text{Cos}[2 (c + d x)] \text{Csc}[c + d x] \sqrt{\text{Sec}[c + d x]} \sqrt{\text{Tan}[c + d x]}}{2 (a - i b) (a + i b) \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}} +$$

$$\left.\left.\frac{a \text{Csc}[c + d x] \sqrt{\text{Sec}[c + d x]} \text{Sin}[2 (c + d x)] \sqrt{\text{Tan}[c + d x]}}{2 (a - i b) (a + i b) \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}}\right)\right) \Big/ \left((a^2 + b^2) \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}}\right.$$

$$d \left(-\left(1 \Big/ \left((a^2 + b^2) \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]} \text{Tan}[c + d x]^{3/2}\right)\right)\right)$$

$$\sqrt{2} \text{Cos}\left[\frac{1}{2} (c + d x)\right]^2 \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{2 + \frac{2 a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b + \sqrt{a^2 + b^2}}}$$

$$\left(i b \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] + (a - i b) \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a + i b)$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2} - \left(\sqrt{2}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a-\mathbb{i}\,b)\,\text{EllipticPi}\right[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+\mathbb{i}\,b)$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right) \Bigg/ \left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right) -$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\mathbb{i}\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a-\mathbb{i}\,b)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\right[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+\mathbb{i}\,b\right)\ \text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathbb{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{2}\ \left(a^2+b^2\right)\ \left(b-\sqrt{a^2+b^2}\right)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(3\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,b\,\text{EllipticF}\Big[\mathbb{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a-\mathbb{i}\,b\right)$$

$$\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\left(a+\mathbb{i}\,b\right)\ \text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\Bigg)\Bigg/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\text{i}\,(a-\text{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\text{i}\,(a+\text{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)+\left(\text{Sec}[c+d\,x]^2\right.$$

$$\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2$$

$$\left(-\frac{2\,b}{a\,(a-\text{i}\,b)\,(a+\text{i}\,b)}+\right.$$

$$\left.\frac{2\,b^2\,\text{Sin}[c+d\,x]}{a\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 644: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 159 leaves, 8 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a-b\right)^{3/2}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a+b\right)^{3/2}\,d}+\frac{2\,b^2\,\sqrt{\text{Tan}[c+d\,x]}}{a\,\left(a^2+b^2\right)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4641 leaves):

$$-\left(\left(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i$$

$$\left.\left(a+i\,b\right)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Big/\left(a^2+\right.$$

$$b^2\Big)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d$$

$$\left(\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a+b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+i\,\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\left(\sqrt{2}\ a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathrm{i}\,(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\text{Tan}[c+d\,x]}\right)+\left(a\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{2}\,(a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(3 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\, a \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\, a+b)\right.$$

$$\operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathrm{i}(a+\mathrm{i}\, b) \operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]} \left.\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right) \Big/$$

$$\left(\sqrt{2}\left(a^2+b^2\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(\sqrt{2} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.\left(-\mathrm{i}\, a\right.$$

$$\operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\, a+b) \operatorname{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\left(a+\mathrm{i}\,b\right)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\ \left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\ \mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,a\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(\mathrm{i}\,a+b\right)\,\mathrm{EllipticPi}\Big[\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\left(a+\mathrm{i}\,b\right)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathrm{i}\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)-$$

$$\left(i\,(i\,a+b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left((a+i\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\right)\right)+$$

$$\left(\mathrm{Sec}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right.$$

$$\left(\frac{2\,b^2}{a^2\,(a-i\,b)\,(a+i\,b)}-\frac{2\,b^3\,\mathrm{Sin}[c+d\,x]}{a^2\,(a-i\,b)\,(a+i\,b)\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}\right)$$

$$\left.\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 645: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 193 leaves, 9 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a-b)^{3/2}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a+b)^{3/2}\,d}-$$

$$\frac{2}{a\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}-\frac{2\,b\,(a^2+2\,b^2)\,\sqrt{\text{Tan}[c+d\,x]}}{a^2\,(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4629 leaves):

$$-\left(\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a-i\,b)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+i\,b)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(-\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)\,(a+i\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{b\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)\,(a+i\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)\,(a+i\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Bigg/\left((a^2+\right.$$

$$b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d$$

$$\left(\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \mathrm{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$\sqrt{2}\ \mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,b\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\left(\sqrt{2}\ a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,b\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Bigg(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{2}\left(a^2+b^2\right)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\left(3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\text{i}\,b\right)\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\Bigg/$$

$$\left(\sqrt{2}\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\text{i}\,b\right)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\,\left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]-(a+i\,b)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\left(b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\left(-\frac{2\,b^3}{a^3\,(a^2+b^2)}-\frac{2\,\mathrm{Cot}[c+d\,x]}{a^2}+\frac{2\,b^4\,\mathrm{Sin}[c+d\,x]}{a^3\,(a-i\,b)\,(a+i\,b)\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)\Bigg/\left(d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\right)$$

Problem 646: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Tan}[c+d\,x]^{5/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 241 leaves, 10 steps):

$$-\frac{i\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{(i\,a-b)^{3/2}\,d}-\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{(i\,a+b)^{3/2}\,d}-\frac{2}{3\,a\,d\,\mathrm{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}+\frac{8\,b}{3\,a^2\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}+\frac{2\,b^2\,(5\,a^2+8\,b^2)\,\sqrt{\mathrm{Tan}[c+d\,x]}}{3\,a^3\,(a^2+b^2)\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4681 leaves):

$$-\Bigg(\Bigg(\Bigg(2\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\text{i}\,a\,\text{EllipticF}\Big[\text{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\text{i}\,a-b)$$

$$\text{EllipticPi}\Big[-\frac{\text{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\text{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(-\text{i}\,a+b)\,\text{EllipticPi}\Big[\frac{\text{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\text{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}$$

$$\Bigg(-\frac{a\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\Bigg)\Bigg/\Bigg((a^2+$$

$$b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d$$

$$\Bigg(\Bigg(1\Bigg/\Bigg((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\Bigg)\Bigg)$$

$$\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\, a\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a-b)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a+b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\, \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2} + \left(\sqrt{2}\, a\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\, a\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] +\right.$$

$$(-\mathbb{i}\, a-b)\, \text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (-\mathbb{i}\, a+b)\, \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right) \Big/$$

$$\left((a^2+b^2)\, \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \left(b+\sqrt{a^2+b^2}\right) \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)+$$

$$\left(a\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(\mathbb{i}\,a\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)-$$

$$\left(3\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,a\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-i\,a+b\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\Big/$$

$$\left(\sqrt{2}\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(-i\,a-b\right)\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-i\,a+b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\left.\sqrt{\text{Sec}[c+d x]}\ \left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\ \text{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}\right)\right/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\left(1\left/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)\right.$$

$$2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\ (c+d x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a+b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}\ (c+d x)\right]\ \text{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}-$$

$$\left(1\left/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)\right.$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\ (c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\mathbb{i}\,a-b)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-\mathrm{i}\,a+b\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\left(-\mathrm{i}\,a-b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\left(-\mathrm{i}\,a+b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\;\sqrt{\text{Tan}[c+d\,x]}\;(a+b\,\text{Tan}[c+d\,x])^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2$$

$$\left(\frac{2\,(a^4+a^2\,b^2+3\,b^4)}{3\,a^4\,(a-i\,b)\,(a+i\,b)}+\frac{10\,b\,\text{Cot}[c+d\,x]}{3\,a^3}-\frac{2\,\text{Csc}[c+d\,x]^2}{3\,a^2}-\frac{2\,b^5\,\text{Sin}[c+d\,x]}{a^4\,(a-i\,b)\,(a+i\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Big/\Big(d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\Big)$$

Problem 647: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^{9/2}}{(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 317 leaves, 15 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a-b)^{5/2}\,d}-\frac{5\,a\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{b^{7/2}\,d}+$$

$$\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a+b)^{5/2}\,d}-\frac{2\,a^2\,\text{Tan}[c+d\,x]^{5/2}}{3\,b\,(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}-$$

$$\frac{2\,a^2\,(5\,a^2+11\,b^2)\,\text{Tan}[c+d\,x]^{3/2}}{3\,b^2\,(a^2+b^2)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+\frac{(5\,a^4+10\,a^2\,b^2+b^4)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{b^3\,(a^2+b^2)^2\,d}$$

Result (type 4, 81 109 leaves): Display of huge result suppressed!

Problem 648: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^{7/2}}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 251 leaves, 14 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a-b\right)^{5/2}d}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{b^{5/2}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a+b\right)^{5/2}d}-\frac{2\,a^2\,\text{Tan}[c+d\,x]^{3/2}}{3\,b\,\left(a^2+b^2\right)d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}-\frac{2\,a^2\,\left(a^2+3\,b^2\right)\sqrt{\text{Tan}[c+d\,x]}}{b^2\,\left(a^2+b^2\right)^2 d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 75 781 leaves): Display of huge result suppressed!

Problem 649: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^{5/2}}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 214 leaves, 9 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a-b\right)^{5/2}d}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a+b\right)^{5/2}d}-\frac{2\,a^2\,\sqrt{\text{Tan}[c+d\,x]}}{3\,b\,\left(a^2+b^2\right)d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}+\frac{2\,a\,\left(a^2+7\,b^2\right)\sqrt{\text{Tan}[c+d\,x]}}{3\,b\,\left(a^2+b^2\right)^2 d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4808 leaves):

$$-\left(\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\left(a+i\,b\right)^2\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}$$

$$\left(-\frac{a\,b\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}{\left(a-i\,b\right)^2\left(a+i\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left(a\,b\,\text{Cos}\left[2\left(c+d\,x\right)\right]\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\left(a-i\,b\right)^2\left(a+i\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\frac{a^2\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\sqrt{\text{Tan}[c+d\,x]}}{2\left(a-i\,b\right)^2\left(a+i\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{b^2\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\sqrt{\text{Tan}[c+d\,x]}}{2\left(a-i\,b\right)^2\left(a+i\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\right.$$

$$\left(\left(\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathbb{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}\right)+$$

$$\left(\sqrt{2}\ a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \left(2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\;\sqrt{\mathrm{Tan}[c+d\,x]}}\right)+$$

$$\left(a\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\;\sqrt{\mathrm{Tan}[c+d\,x]}}\right)-$$

$$\left(3\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg)\Bigg/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \right.\Bigg(2\,\mathbb{i}\,a\,b$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]-(a+\mathbb{i}\,b)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^{3/2} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(2 \sqrt{2} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right] \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2 i a b \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)^2\right.$$

$$\operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i b)^2 \operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg) \Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(\sqrt{2} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2 i a b \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\left(a\,b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\;\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{14\,b}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\right.$$

$$\frac{2\,a^2\,b}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+$$

$$\left.\frac{2\,\left(a^2\,\text{Sin}[c+d\,x]-7\,b^2\,\text{Sin}[c+d\,x]\right)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\right.$$

$$\left.\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 650: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^{3/2}}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 199 leaves, 9 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a-b)^{5/2}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a+b)^{5/2}\,d}+$$

$$\frac{2\,a\,\sqrt{\text{Tan}[c+d\,x]}}{3\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}+\frac{4\,\left(a^2-2\,b^2\right)\,\sqrt{\text{Tan}[c+d\,x]}}{3\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4970 leaves):

$$-\left(\left(2\,i\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(-\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left(a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left.\left.\left((a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\right)\Big/\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$d\left(\left(i\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)+$$

$$\left(i\sqrt{2}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\right.$$

$$\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}(c+d\, x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]} \sqrt{\text{Tan}[c+d\, x]}\right) +$$

$$\left(\mathbb{i}\, a \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}(c+d\, x)\right]}{b+\sqrt{a^2+b^2}}} \left((a^2-b^2)\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-\mathbb{i}\, b)^2\, \text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+\mathbb{i}\, b)^2\, \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d\, x]}\right) \Big/$$

$$\left(\sqrt{2}\, (a^2+b^2)^2 \left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d\, x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]} \sqrt{\text{Tan}[c+d\, x]}\right) -$$

$$\left(3\, \mathbb{i} \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d\, x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}(c+d\, x)\right]}{b+\sqrt{a^2+b^2}}} \right.$$

$$\left((a^2-b^2)\, \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\, x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-\mathbb{i}\, b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\Bigg/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)+$$

$$\left(i\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\left(a^2-b^2\right)\right.\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\,\left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\,\mathrm{i}\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(2\,i\,\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(i\,(a^2-b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$
$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Big/$$
$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\Bigg)$$
$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\right)+$$
$$\left(\text{Sec}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$
$$\left(\frac{2\left(3\,a^2-4\,b^2\right)}{3\,a\,(a-i\,b)^2\,(a+i\,b)^2}+\right.$$
$$\frac{2\,a\,b^2}{3\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-$$
$$\left.\frac{8\left(a^2\,b\,\text{Sin}[c+d\,x]-b^3\,\text{Sin}[c+d\,x]\right)}{3\,a\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\right.$$
$$\left.\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 651: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 211 leaves, 9 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a-b)^{5/2}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a+b)^{5/2}\,d}-\frac{2\,b\,\sqrt{\text{Tan}[c+d\,x]}}{3\,(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}-\frac{2\,b\,(5\,a^2-b^2)\,\sqrt{\text{Tan}[c+d\,x]}}{3\,a\,(a^2+b^2)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4829 leaves) :

$$\left(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(\frac{a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a\,b\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\right.$$

$$\left(-\left(\left(\sqrt{2}\ \mathrm{Cos}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left.\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \mathrm{Tan}[c+d\,x]^{3/2}\right)\right)-$$

$$\left(\sqrt{2}\ a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\right[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Bigg(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a-\mathrm{i}\,b\right)^2\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\sqrt{2}\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\left(3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\Bigg/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$2\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2 \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\text{i}\,b\right)^2\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}\left[c+d\,x\right]^{3/2}\text{Sin}\left[c+d\,x\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(2\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}\left[c+d\,x\right]}\ \left(\left(a\,b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.$$

$$\left(2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\text{i}\left(a-\text{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathbb{i}\,(a+\mathbb{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\Bigg)$$

$$\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\Bigg)+\Bigg(\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\left(-\frac{2\,b\,(6\,a^2-b^2)}{3\,a^2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2}-\frac{2\,b^3}{3\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\frac{2\,(7\,a^2\,b^2\,\text{Sin}[c+d\,x]-b^4\,\text{Sin}[c+d\,x])}{3\,a^2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg/\left(d\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 652: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 212 leaves, 9 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{\text{i} a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(\text{i} a-b)^{5/2} d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{\text{i} a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(\text{i} a+b)^{5/2} d}+$$
$$\frac{2 b^2 \sqrt{\text{Tan}[c+d x]}}{3 a \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^{3/2}}+\frac{4 b^2 \left(4 a^2+b^2\right) \sqrt{\text{Tan}[c+d x]}}{3 a^2 \left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 4978 leaves):

$$\left(2 \text{i} \sqrt{2} \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[\text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$
$$(a-\text{i} b)^2 \text{EllipticPi}\left[-\frac{\text{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$
$$\left.(a+\text{i} b)^2 \text{EllipticPi}\left[\frac{\text{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}$$
$$\left(\frac{a^2 \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\right.$$
$$\frac{b^2 \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+$$
$$\frac{a^2 \text{Cos}[2 (c+d x)] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$
$$\frac{b^2 \text{Cos}[2 (c+d x)] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$

$$\left.\left.\frac{a\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\right)\Big/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\right.$$

$$\left(-\left(\left(\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left.\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]^{3/2}\right)\right)-$$

$$\left(\mathbb{i}\sqrt{2}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\mathbb{i}\,a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(3\,\mathrm{i}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2-b^2\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\, b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\, b)^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\, (b\, \text{Cos}[c+d x]-a\, \text{Sin}[c+d x])\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, (a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x])^{3/2} \sqrt{\text{Tan}[c+d x]}\right)-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$2\, \mathbb{i} \sqrt{2}\, \text{Cos}\left[\frac{1}{2}(c+d x)\right] \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2\, a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\, b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\bigg/\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$\mathrm{i}\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\bigg/\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(\left(i\,(a^2-b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{2\,b^2\,(9\,a^2+2\,b^2)}{3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2}+\right.$$

$$\frac{2\,b^4}{3\,a\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-$$

$$\left.\frac{4\,\left(5\,a^2\,b^3\,\text{Sin}[c+d\,x]+b^5\,\text{Sin}[c+d\,x]\right)}{3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 653: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Tan}[c+d x]^{3/2} \left(a+b\,\text{Tan}[c+d x]\right)^{5/2}}\,dx$$

Optimal (type 3, 265 leaves, 10 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i\,a-b)^{5/2}\,d}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{(i\,a+b)^{5/2}\,d}-\frac{2}{a\,d\,\sqrt{\text{Tan}[c+d x]}\,\left(a+b\,\text{Tan}[c+d x]\right)^{3/2}}-\frac{2\,b\,\left(3\,a^2+4\,b^2\right)\,\sqrt{\text{Tan}[c+d x]}}{3\,a^2\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d x]\right)^{3/2}}-\frac{2\,b\,\left(3\,a^4+17\,a^2\,b^2+8\,b^4\right)\,\sqrt{\text{Tan}[c+d x]}}{3\,a^3\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 4844 leaves):

$$-\left(\left(\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^3\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

$$\left(-\frac{a\,b\,\text{Csc}[c+d x]\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{(a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\right.$$

$$\left(a\,b\,\text{Cos}\left[2\,(c+d x)\right]\,\text{Csc}[c+d x]\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\Big/$$

$$\left((a-i\,b)^2\,(a+i\,b)^2\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)-$$

$$\frac{a^2 \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}[2 (c+d x)] \sqrt{\operatorname{Tan}[c+d x]}}{2 (a-i b)^2 (a+i b)^2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\left.\left.\frac{b^2 \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}[2 (c+d x)] \sqrt{\operatorname{Tan}[c+d x]}}{2 (a-i b)^2 (a+i b)^2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}\right)\right) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\right.$$

$$\left(\left(\sqrt{2} \operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(2 i a b \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)^2\right.$$

$$\operatorname{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i b)^2 \operatorname{EllipticPi}\left[\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \operatorname{Sec}[c+d x]^{5/2} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}\Bigg) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \operatorname{Tan}[c+d x]^{3/2}\right)+$$

$$\left(\sqrt{2}\ a\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(3\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(2\,i\,a\,b\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d x]}\left(\left(\left(a\,b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\Big/$$

$$\left.\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$\left.\left.\sqrt{\text{Tan}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{5/2}\right)\right)+$$

$$\left(\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$

$$\left(-\frac{2\,b^3\left(12\,a^2+5\,b^2\right)}{3\,a^4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\right.$$

$$\frac{2\,\text{Cot}[c+d x]}{a^3}-$$

$$\frac{2 b^5}{3 a^2 (a - i b)^2 (a + i b)^2 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^2} + \frac{2 (13 a^2 b^4 \text{Sin}[c + d x] + 5 b^6 \text{Sin}[c + d x])}{3 a^4 (a - i b)^2 (a + i b)^2 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])}\Bigg)$$

$$\sqrt{\text{Tan}[c + d x]}\Bigg) \Big/ \Big(d (a + b \text{Tan}[c + d x])^{5/2}\Big)$$

Problem 654: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Tan}[c + d x]^{5/2} (a + b \text{Tan}[c + d x])^{5/2}} \, dx$$

Optimal (type 3, 298 leaves, 11 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i a - b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(i a - b)^{5/2} d} + \frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(i a + b)^{5/2} d} - \frac{2}{3 a d \text{Tan}[c + d x]^{3/2} (a + b \text{Tan}[c + d x])^{3/2}} + \frac{4 b}{a^2 d \sqrt{\text{Tan}[c + d x]} (a + b \text{Tan}[c + d x])^{3/2}} + \frac{2 b^2 (7 a^2 + 8 b^2) \sqrt{\text{Tan}[c + d x]}}{3 a^3 (a^2 + b^2) d (a + b \text{Tan}[c + d x])^{3/2}} + \frac{4 b^2 (4 a^4 + 15 a^2 b^2 + 8 b^4) \sqrt{\text{Tan}[c + d x]}}{3 a^4 (a^2 + b^2)^2 d \sqrt{a + b \text{Tan}[c + d x]}}$$

Result (type 4, 5017 leaves):

$$-\Bigg(\Bigg(\Bigg(2 i \sqrt{2} \text{Cos}\left[\frac{1}{2} (c + d x)\right]^2 \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{2 + \frac{2 a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b + \sqrt{a^2 + b^2}}}$$

$$\Bigg((a^2 - b^2) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a - i b)^2$$

$$\text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] -$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}$$

$$\Bigg(-\frac{a^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left(a\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Bigg)\Bigg/\Bigg((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}$$

$$d\,\Bigg(\Bigg(\mathrm{i}\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}\left[c+d\,x\right]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\text{Tan}\left[c+d\,x\right]^{3/2}\right)+$$

$$\Bigg(\mathbb{i}\,\sqrt{2}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\Bigg(\left(a^2-b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\Bigg)\Bigg/$$

$$\Bigg(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}\left[c+d\,x\right]}\Bigg)+$$

$$\left(\mathbb{i}\, a \sqrt{2+\frac{2\, a \,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\, \left(\left(a^2-b^2\right) \mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(3\,\mathbb{i}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2-b^2\right)\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg)\Bigg/$$

$$\left(\sqrt{2}\,\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\mathbb{i}\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\left(a^2-b^2\right)\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\Big[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathbb{i}\,b)^2$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\,\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\,\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(2\,\mathrm{i}\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathrm{i}\left(a^2-b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right/\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/$$

$$\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/$$

$$\left.\left.\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}\right)\right)\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\right)+$$

$$\left(\text{Sec}[c+d\,x]^3\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$
$$\left(\frac{2\left(a^6+2\,a^4\,b^2+16\,a^2\,b^4+8\,b^6\right)}{3\,a^5\left(a-i\,b\right)^2\left(a+i\,b\right)^2}+\frac{16\,b\,\text{Cot}[c+d\,x]}{3\,a^4}-\frac{2\,\text{Csc}[c+d\,x]^2}{3\,a^3}+\right.$$
$$\frac{2\,b^6}{3\,a^3\left(a-i\,b\right)^2\left(a+i\,b\right)^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-$$
$$\left.\frac{16\left(2\,a^2\,b^5\,\text{Sin}[c+d\,x]+b^7\,\text{Sin}[c+d\,x]\right)}{3\,a^5\left(a-i\,b\right)^2\left(a+i\,b\right)^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(d\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 655: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Tan}[c+d\,x]}\sqrt{2+3\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{3-2\,i}\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,i}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{3+2\,i}\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,i}\,d}$$

Result (type 4, 293 leaves):

$$\frac{1}{d\sqrt{2+3\,\text{Tan}[c+d\,x]}}$$

$$\mathbb{i}\sqrt{\frac{2}{3+\sqrt{13}}}\sqrt{3+\sqrt{13}+2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}\sqrt{3+\sqrt{13}-\left(11+3\,\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\left(\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}-\frac{3\,\sqrt{13}}{2}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathbb{i}\,\left(3+\sqrt{13}\right),\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathbb{i}\,\left(3+\sqrt{13}\right),\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}$$

Problem 656: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{3-2\,\mathbb{i}}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,\mathbb{i}}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{3+2\,\mathbb{i}}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,\mathbb{i}}\,d}$$

Result (type 4, 2739 leaves):

$$\left(2\,\mathbb{i}\,\left(\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1+\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(\frac{\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}}+\right.$$

$$\left.\left.\frac{\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}}\right)\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left(\sqrt{3+\sqrt{13}}\,d\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{-2+3\,\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(\left(\mathrm{i}\,\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-\right.\right.\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\left.\left.\operatorname{Sec}[c+d x]^2 \sqrt{1+\operatorname{Sec}[c+d x]}\ \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} \sqrt{\frac{-2+3 \operatorname{Tan}[c+d x]}{-1+\operatorname{Sec}[c+d x]}}\right)\right/$$

$$\left.\left(\sqrt{3+\sqrt{13}} \sqrt{\frac{1}{2+2 \operatorname{Cos}[c+d x]}} \sqrt{2 \operatorname{Cos}[c+d x]-3 \operatorname{Sin}[c+d x]}\ \operatorname{Tan}[c+d x]^{3/2}\right)\right)+$$

$$\left(3 i \left(\operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],-\frac{11}{2}+\frac{3 \sqrt{13}}{2}\right]-\right.\right.$$

$$\operatorname{EllipticPi}\left[-\frac{1}{2} i\left(-3+\sqrt{13}\right), i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{1}{2}\left(-11+3 \sqrt{13}\right)\right]-$$

$$\left.\operatorname{EllipticPi}\left[\frac{1}{2} i\left(-3+\sqrt{13}\right), i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{1}{2}\left(-11+3 \sqrt{13}\right)\right]\right)$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\frac{-2+3 \operatorname{Tan}[c+d x]}{-1+\operatorname{Sec}[c+d x]}}\right)\Big/$$

$$\left(2 \sqrt{3+\sqrt{13}} \sqrt{\frac{1}{2+2 \operatorname{Cos}[c+d x]}} \sqrt{2 \operatorname{Cos}[c+d x]-3 \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(i \left(\operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],-\frac{11}{2}+\frac{3 \sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{1}{2}\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{1}{2}\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\ \left(-3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}$$

$$\left.\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Big/$$

$$\left(\sqrt{3+\sqrt{13}}\ \sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ \left(2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{3+\sqrt{13}}\ \sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ \left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ -\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{1}{2}\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{1}{2}\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\ +$$

$$\left(2\,i\,\sqrt{1+\text{Sec}[c+d\,x]}\,\left(-\left(\left(i\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\,\sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\sqrt{1+\frac{2\,\left(-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+\left(i\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\sqrt{1+\frac{\left(-11+3\,\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+\left(i\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\,\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\sqrt{1+\frac{\left(-11+3\,\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Big/$$

$$\left(\sqrt{3+\sqrt{13}}\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(i\,\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\left.\text{Sec}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Big/$$

$$\left(\sqrt{3+\sqrt{13}}\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{1+\text{Sec}[c+d\,x]}\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(i\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,-\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,i\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}$$

$$\left.\left(\frac{3\,\text{Sec}[c+d\,x]^2}{-1+\text{Sec}[c+d\,x]}-\frac{\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\left(-2+3\,\text{Tan}[c+d\,x]\right)}{\left(-1+\text{Sec}[c+d\,x]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{3+\sqrt{13}}\ \sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ \sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\ \sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg)\Bigg)$$

Problem 657: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{2-3\,\text{Tan}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{3-2\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,i}\ d}+\frac{\text{ArcTan}\left[\frac{\sqrt{3+2\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,i}\ d}$$

Result (type 4, 2739 leaves):

$$\Bigg(2\,i\,\Bigg(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,i\,\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\text{EllipticPi}\left[\frac{1}{2}\,i\,\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(\frac{\text{Csc}[c+d\,x]\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}}+\right.$$

$$\left.\left.\frac{\text{Cos}[2\,(c+d\,x)]\;\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}}\right)\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left(\sqrt{3+\sqrt{13}}\;d\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{2-3\,\text{Tan}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(\left(\mathrm{i}\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.\right.\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\left.\text{Sec}[c+d\,x]^2\,\sqrt{1+\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left.\left(\sqrt{3+\sqrt{13}}\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\;\text{Tan}[c+d\,x]^{3/2}\right)\right)+$$

$$\left(3\,\mathrm{i}\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{1+\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left(2\,\sqrt{3+\sqrt{13}}\,\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\,\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\,\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ -\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\,\left(-3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left.\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left(\sqrt{3+\sqrt{13}}\ \sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ (2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x])^{3/2}\ \sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{3+\sqrt{13}}\ \sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\mathrm{i}\ \sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ \left(\text{EllipticF}\left[\mathrm{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\ \mathrm{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\ \sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\ +$$

$$\left(2\,\mathrm{i}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \left(-\left(\left(\mathrm{i}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\ \sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\ \sqrt{1+\frac{2\,\left(-\frac{11}{2}+\frac{3\,\sqrt{13}}{2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+\left(\mathrm{i}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\ \left(1-\mathrm{i}\ \text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\ \sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\right.$$

$$\sqrt{1+\frac{\left(-11+3\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\left(\mathrm{i}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(2\,\sqrt{2\,\left(-3+\sqrt{13}\right)}\;\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\sqrt{1+\frac{2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}\;\sqrt{1+\frac{\left(-11+3\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{-3+\sqrt{13}}}$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\Bigg)\Bigg/$$

$$\left(\sqrt{3+\sqrt{13}}\;\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\;\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\mathrm{i}\,\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,-\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{2}\,\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\left.\text{Sec}[c+d\,x]\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}\;\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\Bigg/$$

$$\left(\sqrt{3+\sqrt{13}}\;\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\;\sqrt{1+\text{Sec}[c+d\,x]}\;\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(\mathrm{i}\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],-\frac{11}{2}+\frac{3\sqrt{13}}{2}\right]-\right.\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\left(-3+\sqrt{13}\right),\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\mathrm{i}\left(-3+\sqrt{13}\right),\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{-3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{1}{2}\left(-11+3\sqrt{13}\right)\right]\right)$$

$$\sqrt{1+\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}$$

$$\left.\left(\frac{3\,\text{Sec}[c+d\,x]^2}{-1+\text{Sec}[c+d\,x]}-\frac{\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\left(-2+3\,\text{Tan}[c+d\,x]\right)}{\left(-1+\text{Sec}[c+d\,x]\right)^2}\right)\right)\Big/$$

$$\left(\sqrt{3+\sqrt{13}}\;\sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\;\sqrt{2\,\text{Cos}[c+d\,x]-3\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\;\sqrt{\frac{-2+3\,\text{Tan}[c+d\,x]}{-1+\text{Sec}[c+d\,x]}}\right)\right)$$

Problem 658: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{-2-3\,\text{Tan}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{3-2\,\mathrm{i}}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,\mathrm{i}}\;d}+\frac{\text{ArcTan}\left[\frac{\sqrt{3+2\,\mathrm{i}}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,\mathrm{i}}\;d}$$

Result (type 4, 320 leaves):

$$\frac{1}{\left(3+\sqrt{13}\right) d \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]} \sqrt{-2-3\,\text{Tan}[c+d x]} \sqrt{\text{Tan}[c+d x]}}$$

$$4\,\text{i} \sqrt{\frac{2}{-3+\sqrt{13}}} \sqrt{3+\sqrt{13}+2\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]} \sqrt{3+\sqrt{13}-\left(11+3\sqrt{13}\right)\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}$$

$$\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], -\frac{11}{2}-\frac{3\sqrt{13}}{2}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{2}\,\text{i}\left(3+\sqrt{13}\right), \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{1}{2}\left(-11-3\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,\text{i}\left(3+\sqrt{13}\right), \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{2}{3+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{1}{2}\left(-11-3\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d x]\,\text{Sin}\left[\frac{1}{2}\left(c+d x\right)\right]^2$$

Problem 659: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Tan}[c+d x]}\sqrt{3+2\,\text{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{2-3\,\text{i}}\sqrt{\text{Tan}[c+d x]}}{\sqrt{3+2\,\text{Tan}[c+d x]}}\right]}{\sqrt{2-3\,\text{i}}\;d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{2+3\,\text{i}}\sqrt{\text{Tan}[c+d x]}}{\sqrt{3+2\,\text{Tan}[c+d x]}}\right]}{\sqrt{2+3\,\text{i}}\;d}$$

Result (type 4, 318 leaves):

$$\frac{1}{\sqrt{-2+\sqrt{13}}\,\left(2+\sqrt{13}\right)\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{3+2\,\text{Tan}[c+d\,x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{2+\sqrt{13}+3\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{6+3\,\sqrt{13}-\left(17+4\,\sqrt{13}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,-\frac{17}{9}-\frac{4\,\sqrt{13}}{9}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{3}\,i\,\left(2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{9}\,\left(-17-4\,\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{3}\,i\,\left(2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{9}\,\left(-17-4\,\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

Problem 660: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{3-2\,\text{Tan}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2-3\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,i}\,d}+\frac{\text{ArcTan}\left[\frac{\sqrt{2+3\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,i}\,d}$$

Result (type 4, 317 leaves):

$$\frac{1}{\left(-2+\sqrt{13}\right)\sqrt{2+\sqrt{13}}\ d\ \sqrt{3-2\,\text{Tan}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{-2+\sqrt{13}+3\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{-6+3\sqrt{13}+\left(-17+4\sqrt{13}\right)\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,-\frac{17}{9}+\frac{4\sqrt{13}}{9}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{3}\,i\left(-2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{9}\left(-17+4\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{3}\,i\left(-2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{1}{9}\left(-17+4\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

Problem 661: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Tan}[c+d\,x]}\ \sqrt{-3+2\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{2-3\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,i}\ d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{2+3\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,i}\ d}$$

Result (type 4, 317 leaves):

$$\frac{1}{\left(-2+\sqrt{13}\right)\sqrt{2+\sqrt{13}}\; d\,\sqrt{\text{Tan}[c+d\,x]}\;\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{-2+\sqrt{13}+3\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\;\sqrt{-6+3\sqrt{13}+\left(-17+4\sqrt{13}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}$$

$$\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],-\frac{17}{9}+\frac{4\sqrt{13}}{9}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{1}{3}\,i\left(-2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{1}{9}\left(-17+4\sqrt{13}\right)\right]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{3}\,i\left(-2+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{-2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{1}{9}\left(-17+4\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}$$

Problem 662: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 89 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2-3\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,i}\;d}+\frac{\text{ArcTan}\left[\frac{\sqrt{2+3\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,i}\;d}$$

Result (type 4, 318 leaves):

$$\frac{1}{\sqrt{-2+\sqrt{13}}\left(2+\sqrt{13}\right) d \sqrt{-3-2\,\text{Tan}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2 \sqrt{2+\sqrt{13}+3\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}\ \sqrt{6+3\sqrt{13}-\left(17+4\sqrt{13}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], -\frac{17}{9}-\frac{4\sqrt{13}}{9}\right] - \right.$$

$$\text{EllipticPi}\left[-\frac{1}{3}\,\text{i}\left(2+\sqrt{13}\right), \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{1}{9}\left(-17-4\sqrt{13}\right)\right] -$$

$$\left.\text{EllipticPi}\left[\frac{1}{3}\,\text{i}\left(2+\sqrt{13}\right), \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{3}{2+\sqrt{13}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{1}{9}\left(-17-4\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}$$

Problem 663: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2+3\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$\frac{\text{i}\,\text{ArcTanh}\left[\frac{\sqrt{3-2\,\text{i}}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,\text{i}}\,d} - \frac{\text{i}\,\text{ArcTanh}\left[\frac{\sqrt{3+2\,\text{i}}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,\text{i}}\,d}$$

Result (type 4, 257 leaves):

$$-\frac{1}{d\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{2+3\,\text{Tan}[c+d\,x]}}2\sqrt{\frac{2}{-3+\sqrt{13}}}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\text{EllipticPi}\left[-\frac{1}{2}\,i\,\left(-3+\sqrt{13}\right),\right.\right.$$

$$i\,\text{ArcSinh}\left[\sqrt{\frac{2}{-3+\sqrt{13}}}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]-\text{EllipticPi}\left[\right.$$

$$\left.\left.\frac{1}{2}\,i\,\left(-3+\sqrt{13}\right),\,i\,\text{ArcSinh}\left[\sqrt{\frac{2}{-3+\sqrt{13}}}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{-3+\sqrt{13}+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{-3+\sqrt{13}+\left(-11+3\,\sqrt{13}\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 664: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{3-2\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,i}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{3+2\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-2+3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,i}\,d}$$

Result (type 4, 273 leaves):

$$\frac{1}{\sqrt{3+\sqrt{13}}\ d\ \sqrt{\frac{1}{2+2\,\text{Cos}[c+d\,x]}}\ \sqrt{\text{Tan}[c+d\,x]}\ \sqrt{-2+3\,\text{Tan}[c+d\,x]}}$$

$$\left(-\text{EllipticPi}\left[-\frac{1}{2}\,i\,\left(3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\sqrt{\frac{2}{3+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \right],\ \frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]+\right.$$

$$\left.\text{EllipticPi}\left[\frac{1}{2}\,i\,\left(3+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\sqrt{\frac{2}{3+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \right],\ \frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{1+\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{3+\sqrt{13}+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{3+\sqrt{13}-\left(11+3\,\sqrt{13}\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 665: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2-3\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{3-2\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,i}\ d}+\frac{i\,\text{ArcTan}\left[\frac{\sqrt{3+2\,i}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{2-3\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,i}\ d}$$

Result (type 4, 273 leaves):

$$\frac{1}{\sqrt{3+\sqrt{13}}\;d\;\sqrt{\frac{1}{2+2\,\mathrm{Cos}[c+d\,x]}}\;\sqrt{2-3\,\mathrm{Tan}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$\left(-\mathrm{EllipticPi}\left[-\frac{1}{2}\,i\,\left(3+\sqrt{13}\right),\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{2}{3+\sqrt{13}}}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\,\frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]+\right.$$

$$\left.\mathrm{EllipticPi}\left[\frac{1}{2}\,i\,\left(3+\sqrt{13}\right),\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{2}{3+\sqrt{13}}}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\,\frac{1}{2}\,\left(-11-3\,\sqrt{13}\right)\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{1+\mathrm{Sec}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{3+\sqrt{13}+2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{3+\sqrt{13}-\left(11+3\,\sqrt{13}\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 666: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{-2-3\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$\frac{i\,\mathrm{ArcTan}\left[\frac{\sqrt{3-2\,i}\;\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{-2-3\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{3-2\,i}\;d}-\frac{i\,\mathrm{ArcTan}\left[\frac{\sqrt{3+2\,i}\;\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{-2-3\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{3+2\,i}\;d}$$

Result (type 4, 257 leaves):

$$-\frac{1}{d\sqrt{-2-3\,\mathrm{Tan}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}2\sqrt{\frac{2}{-3+\sqrt{13}}}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\mathrm{EllipticPi}\left[-\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\right.\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{2}{-3+\sqrt{13}}}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\Big]-\mathrm{EllipticPi}\Big[$$

$$\left.\frac{1}{2}\,\mathrm{i}\,\left(-3+\sqrt{13}\right),\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{2}{-3+\sqrt{13}}}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\right],\,\frac{1}{2}\,\left(-11+3\,\sqrt{13}\right)\right]\right)$$

$$\mathrm{Sec}[c+d\,x]\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{-3+\sqrt{13}+2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{-3+\sqrt{13}+\left(-11+3\,\sqrt{13}\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 667: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{3+2\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$\frac{\mathrm{i}\,\mathrm{ArcTanh}\left[\frac{\sqrt{2-3\,\mathrm{i}}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{3+2\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,\mathrm{i}}\,d}-\frac{\mathrm{i}\,\mathrm{ArcTanh}\left[\frac{\sqrt{2+3\,\mathrm{i}}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{3+2\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,\mathrm{i}}\,d}$$

Result (type 4, 257 leaves):

$$-\frac{1}{3\sqrt{-2+\sqrt{13}}\ d\sqrt{\text{Tan}[c+d\,x]}\ \sqrt{3+2\,\text{Tan}[c+d\,x]}}$$
$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(\text{EllipticPi}\left[-\frac{1}{3}\,\mathrm{i}\,\left(-2+\sqrt{13}\right),\right.\right.$$
$$\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{3}{-2+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \right],\ \frac{1}{9}\left(-17+4\sqrt{13}\right)\right]-\text{EllipticPi}\left[\right.$$
$$\left.\left.\frac{1}{3}\,\mathrm{i}\,\left(-2+\sqrt{13}\right),\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{3}{-2+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \right],\ \frac{1}{9}\left(-17+4\sqrt{13}\right)\right]\right)$$
$$\text{Sec}[c+d\,x]\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{-2+\sqrt{13}+3\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}$$
$$\sqrt{-6+3\sqrt{13}+\left(-17+4\sqrt{13}\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}$$

Problem 668: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{3-2\,\text{Tan}[c+d\,x]}}\,\mathrm{d}x$$

Optimal (type 3, 95 leaves, 7 steps):

$$-\frac{\mathrm{i}\,\text{ArcTan}\left[\frac{\sqrt{2-3\,\mathrm{i}}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,\mathrm{i}}\ d}+\frac{\mathrm{i}\,\text{ArcTan}\left[\frac{\sqrt{2+3\,\mathrm{i}}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,\mathrm{i}}\ d}$$

Result (type 4, 258 leaves):

$$-\frac{1}{3\sqrt{2+\sqrt{13}}\;d\sqrt{3-2\,\text{Tan}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\text{EllipticPi}\left[-\frac{1}{3}\,\text{i}\,\left(2+\sqrt{13}\right),\right.\right.$$

$$\text{i}\,\text{ArcSinh}\left[\sqrt{\frac{3}{2+\sqrt{13}}}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\frac{1}{9}\left(-17-4\sqrt{13}\right)\Big]-$$

$$\left.\text{EllipticPi}\left[\frac{1}{3}\,\text{i}\,\left(2+\sqrt{13}\right),\,\text{i}\,\text{ArcSinh}\left[\sqrt{\frac{3}{2+\sqrt{13}}}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\frac{1}{9}\left(-17-4\sqrt{13}\right)\right]\right)$$

$$\text{Sec}[c+d\,x]\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{2+\sqrt{13}+3\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{6+3\sqrt{13}-\left(17+4\sqrt{13}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 669: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$-\frac{\text{i}\,\text{ArcTanh}\left[\frac{\sqrt{2-3\,\text{i}}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,\text{i}}\;d}+\frac{\text{i}\,\text{ArcTanh}\left[\frac{\sqrt{2+3\,\text{i}}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3+2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,\text{i}}\;d}$$

Result (type 4, 258 leaves):

$$-\frac{1}{3\sqrt{2+\sqrt{13}}\ d\sqrt{\text{Tan}[c+d\,x]}\ \sqrt{-3+2\,\text{Tan}[c+d\,x]}}$$
$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\text{EllipticPi}\left[-\frac{1}{3}\,i\,\left(2+\sqrt{13}\right),\right.\right.$$
$$i\,\text{ArcSinh}\left[\sqrt{\frac{3}{2+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \right],\ \frac{1}{9}\left(-17-4\sqrt{13}\right)\right]-$$
$$\left.\text{EllipticPi}\left[\frac{1}{3}\,i\,\left(2+\sqrt{13}\right),\ i\,\text{ArcSinh}\left[\sqrt{\frac{3}{2+\sqrt{13}}}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \right],\ \frac{1}{9}\left(-17-4\sqrt{13}\right)\right]\right)$$
$$\text{Sec}[c+d\,x]\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{2+\sqrt{13}+3\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$
$$\sqrt{6+3\sqrt{13}-\left(17+4\sqrt{13}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 670: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 95 leaves, 7 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{2-3\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2-3\,i}\ d}-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{2+3\,i}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{-3-2\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{2+3\,i}\ d}$$

Result (type 4, 257 leaves):

$$-\frac{1}{3\sqrt{-2+\sqrt{13}}\;d\sqrt{-3-2\,\mathrm{Tan}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}$$
$$4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\mathrm{EllipticPi}\left[-\frac{1}{3}\,i\,\left(-2+\sqrt{13}\right),\right.\right.$$
$$i\,\mathrm{ArcSinh}\left[\sqrt{\frac{3}{-2+\sqrt{13}}}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\frac{1}{9}\left(-17+4\sqrt{13}\right)\right]-\mathrm{EllipticPi}\Big[$$
$$\left.\frac{1}{3}\,i\,\left(-2+\sqrt{13}\right),\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{3}{-2+\sqrt{13}}}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right],\frac{1}{9}\left(-17+4\sqrt{13}\right)\Big]\right)$$
$$\mathrm{Sec}[c+d\,x]\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{-2+\sqrt{13}+3\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$
$$\sqrt{-6+3\sqrt{13}+\left(-17+4\sqrt{13}\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

Problem 675: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int\frac{\mathrm{Tan}[c+d\,x]^{4/3}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$\left(3\,\mathrm{AppellF1}\left[\frac{7}{3},1,\frac{1}{2},\frac{10}{3},-i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right]\mathrm{Tan}[c+d\,x]^{7/3}\sqrt{1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}}\right)\Big/$$
$$\left(14\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)+$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{7}{3},1,\frac{1}{2},\frac{10}{3},i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right]\mathrm{Tan}[c+d\,x]^{7/3}\sqrt{1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}}\right)\Big/$$
$$\left(14\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 4, 20 956 leaves): Display of huge result suppressed!

Problem 676: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int\frac{\mathrm{Tan}[c+d\,x]^{2/3}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$\left(3\,\text{AppellF1}\left[\frac{5}{3},1,\frac{1}{2},\frac{8}{3},-\mathrm{i}\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\text{Tan}[c+d\,x]^{5/3}\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)\Big/\left(10\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)+\left(3\,\text{AppellF1}\left[\frac{5}{3},1,\frac{1}{2},\frac{8}{3},\mathrm{i}\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\text{Tan}[c+d\,x]^{5/3}\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)\Big/\left(10\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)$$

Result (type 4, 6751 leaves):

$$\left(\left(\frac{1}{b}+\frac{\text{Cos}[2\,(c+d\,x)]}{b}\right)\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\text{Tan}[c+d\,x]^{2/3}\right)\Big/\left(d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)+$$

$$\left(\text{Sec}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\left(-\frac{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}{3\,b\,\text{Tan}[c+d\,x]^{1/3}}-\frac{1}{b}\right.\right.$$

$$\text{Cos}[3\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{2/3}\Bigg)$$

$$\left(-\frac{3\,\text{Tan}[c+d\,x]^{2/3}\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}}{2\,\left(1+\text{Tan}[c+d\,x]^2\right)^{3/4}}-\frac{1}{2\,\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\,\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}}\right.$$

$$3\,a^{1/3}\,b\,\left(\text{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}+b^{1/3}\right)\right)-$$

$$\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}},\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+i\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(\left(i+\sqrt{3}\right)\left(-i\,a^{1/3}+b^{1/3}\right)\right)+\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[$$

$$\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+i\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/$$

$$\left(2\,a^{1/3}+\left(i+\sqrt{3}\right)b^{1/3}\right)-\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(-i+\sqrt{3}\right)b^{1/3}\right)\Bigg)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\ \sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\Bigg)\Bigg)\Big/$$

$$\Bigg(d\sqrt{a+b\,\text{Tan}[c+d\,x]}\ \Bigg(\frac{9\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^{5/3}\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}}{4\left(1+\text{Tan}[c+d\,x]^2\right)^{7/4}}+$$

$$\frac{1}{4\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\left(1+\text{Tan}[c+d\,x]^2\right)^{5/4}}$$

$$3\,a^{1/3}\,b\,\Bigg(\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}-\left(-i+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-i\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Big/\left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}+b^{1/3}\right)\right)-$$

$$\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-i\,b^{1/3}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],\ (-1)^{1/3}]\Bigg)\Bigg/\left(2\,a^{1/3}-\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathbb{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],$$

$$(-1)^{1/3}]\Big/\left(\left(\mathbb{i}+\sqrt{3}\right)\left(-\mathbb{i}\,a^{1/3}+b^{1/3}\right)\right)+\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[$$

$$\frac{\mathbb{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathbb{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],\ (-1)^{1/3}]\Bigg)\Big/$$

$$\left(2\,a^{1/3}+\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)-\text{EllipticPi}\Big[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],\ (-1)^{1/3}]\Big/\left(2\,a^{1/3}+\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\Bigg)$$

$$\text{Sec}[c+d\,x]^2\,\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\text{Tan}[c+d\,x]-\frac{\text{Sec}[c+d\,x]^2\,\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}}{\text{Tan}[c+d\,x]^{1/3}\left(1+\text{Tan}[c+d\,x]^2\right)^{3/4}}-$$

$$\Bigg(3\,a^{1/3}\,b\,\Bigg(\text{EllipticPi}\Big[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],$$

$$(-1)^{1/3}]\Big/\left(2\,a^{1/3}-\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathbb{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],\ (-1)^{1/3}]\Big/$$

$$\left(\left(\mathbb{i}+\sqrt{3}\right)\left(\mathbb{i}\,a^{1/3}+b^{1/3}\right)\right)-\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{\mathbb{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathbb{i}\,b^{1/3}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,],\ (-1)^{1/3}]\Bigg)\Big/\left(2\,a^{1/3}-\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}+i\, b^{1/3}}, \text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right],\right.$$

$$\left.(-1)^{1/3}\right] \Big/ \left(\left(i+\sqrt{3}\right)\left(-i\, a^{1/3}+b^{1/3}\right)\right)+\Bigg((-1)^{2/3}\, \text{EllipticPi}\Big[$$

$$\frac{i \sqrt{3}\, a^{1/3}}{(-1)^{1/3} a^{1/3}+i\, b^{1/3}}, \text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right], (-1)^{1/3}\Big]\Bigg) \Big/$$

$$\left(2 a^{1/3}+\left(i+\sqrt{3}\right) b^{1/3}\right)-\text{EllipticPi}\left[\frac{\left(i+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6} a^{1/3}+b^{1/3}}, \text{ArcSin}\right[$$

$$\left.\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right], (-1)^{1/3}\right] \Big/ \left(2 a^{1/3}+\left(-i+\sqrt{3}\right) b^{1/3}\right)\Bigg)$$

$$\left(-\frac{b^{1/3} \text{Sec}[c+d x]^2}{3 a^{1/3} \text{Tan}[c+d x]^{2/3}}+\frac{2 b^{2/3} \text{Sec}[c+d x]^2}{3 a^{2/3} \text{Tan}[c+d x]^{1/3}}\right) \sqrt{\frac{a^{1/3}+b^{1/3} \text{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Bigg) \Big/$$

$$\Bigg(4 \sqrt{1-\frac{b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}+\frac{b^{2/3} \text{Tan}[c+d x]^{2/3}}{a^{2/3}}} \sqrt{\frac{a+b \text{Tan}[c+d x]}{\sqrt{1+\text{Tan}[c+d x]^2}}}$$

$$\left(1+\text{Tan}[c+d x]^2\right)^{1/4}\Bigg)-$$

$$\frac{1}{2 \sqrt{\frac{a+b \text{Tan}[c+d x]}{\sqrt{1+\text{Tan}[c+d x]^2}}} \left(1+\text{Tan}[c+d x]^2\right)^{1/4}} 3 a^{1/3} b \Bigg(\left((-1)^{2/3} b^{1/3} \text{Sec}[c+d x]^2\right) \Big/$$

$$\Bigg(6 \left(1+(-1)^{1/3}\right) a^{1/3} \left(2 a^{1/3}-\left(-i+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\left(i+(-1)^{1/6}\right)\left(a^{1/3}+(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6} a^{1/3}-b^{1/3}\right)}\right)$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}\right)+\left(\left((-1)^{2/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)\left(\mathrm{i}+\sqrt{3}\right)a^{1/3}\left(\mathrm{i}\,a^{1/3}+b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}}\right)\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left.\text{Tan}[c+d\,x]^{2/3}\right)+\left(\left((-1)^{1/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\mathrm{i}\sqrt{3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}\right)}\right)$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}\right)+\left(\left((-1)^{2/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)\left(\mathrm{i}+\sqrt{3}\right)a^{1/3}\left(-\mathrm{i}\,a^{1/3}+b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}}\right)\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\text{Tan}[c+d x]^{2/3}\Bigg)-\left(\left(-1\right)^{1/3} b^{1/3}\,\text{Sec}[c+d x]^2\right)\Bigg/$$

$$\Bigg(6\left(1+\left(-1\right)^{1/3}\right) a^{1/3}\left(2 a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}$$

$$\sqrt{1-\frac{\left(-1\right)^{1/3}\left(a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}\right)}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\mathrm{i}\sqrt{3}\left(a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}\right)}{\left(1+\left(-1\right)^{1/3}\right)\left(\left(-1\right)^{1/3} a^{1/3}+\mathrm{i}\, b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}\;\text{Tan}[c+d x]^{2/3}\Bigg)-\left(\left(-1\right)^{2/3} b^{1/3}\,\text{Sec}[c+d x]^2\right)\Bigg/$$

$$\Bigg(6\left(1+\left(-1\right)^{1/3}\right) a^{1/3}\left(2 a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}$$

$$\sqrt{1-\frac{\left(-1\right)^{1/3}\left(a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}\right)}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\left(\mathrm{i}+\left(-1\right)^{1/6}\right)\left(a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}\right)}{\left(1+\left(-1\right)^{1/3}\right)\left(\left(-1\right)^{1/6} a^{1/3}+b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}\;\text{Tan}[c+d x]^{2/3}\Bigg)\Bigg)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d x]^{2/3}}{a^{2/3}}}\;-$$

$$\Bigg(b^{4/3}\Bigg(\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+\left(-1\right)^{1/6}\right) a^{1/3}}{\left(-1\right)^{1/6} a^{1/3}-b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3} b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}}\Big],$$

$$\left(-1\right)^{1/3}\Big]\Big/\left(2 a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+\left(-1\right)^{1/3}\right) a^{1/3}}{a^{1/3}-\mathrm{i}\, b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],(-1)^{1/3}\Big]\Big/$$

$$\left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}+b^{1/3}\right)\right)-\left((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-i\,b^{1/3}},\text{ArcSin}\Big[\right.$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],(-1)^{1/3}\Big]\right)\Big/\left(2\,a^{1/3}-\left(i+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+i\,b^{1/3}},\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(\left(i+\sqrt{3}\right)\left(-i\,a^{1/3}+b^{1/3}\right)\right)+\left((-1)^{2/3}\,\text{EllipticPi}\Big[\right.$$

$$\left.\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+i\,b^{1/3}},\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],(-1)^{1/3}\Big]\right)\Big/$$

$$\left(2\,a^{1/3}+\left(i+\sqrt{3}\right)b^{1/3}\right)-\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},\text{ArcSin}\Big[$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(-i+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\left.\text{Sec}[c+d\,x]^2\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\right)\Big/$$

$$\left(4\left(1+(-1)^{1/3}\right)\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}\right.$$

$$\left.\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}\right)-$$

$$\left(3\,\text{Tan}[c+d\,x]^{2/3}\left(-\frac{\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)}{\left(1+\text{Tan}[c+d\,x]^2\right)^{3/2}}+\frac{b\,\text{Sec}[c+d\,x]^2}{\sqrt{1+\text{Tan}[c+d\,x]^2}}\right)\right)\Big/$$

$$\left(4\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\left(1+\text{Tan}[c+d\,x]^2\right)^{3/4}\right)+$$

$$\frac{1}{4\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Tan}[c+d\,x]^2}}\right)^{3/2}\left(1+\mathrm{Tan}[c+d\,x]^2\right)^{1/4}}$$

$$3\,a^{1/3}\,b\left(\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}+b^{1/3}\right)\right)-$$

$$\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(-\mathrm{i}\,a^{1/3}+b^{1/3}\right)\right)+\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Big/$$

$$\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)-\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\sqrt{1-\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\mathrm{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\left.\left.\left(-\frac{\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}{\left(1+\mathrm{Tan}[c+d\,x]^2\right)^{3/2}}+\frac{b\,\mathrm{Sec}[c+d\,x]^2}{\sqrt{1+\mathrm{Tan}[c+d\,x]^2}}\right)\right)\right)$$

Problem 677: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int \frac{\mathrm{Tan}[c+d\,x]^{1/3}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$\left(3\,\mathrm{AppellF1}\left[\frac{4}{3},1,\frac{1}{2},\frac{7}{3},-i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right]\mathrm{Tan}[c+d\,x]^{4/3}\sqrt{1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}}\right)\Big/\left(8\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)+\left(3\,\mathrm{AppellF1}\left[\frac{4}{3},1,\frac{1}{2},\frac{7}{3},i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right]\mathrm{Tan}[c+d\,x]^{4/3}\sqrt{1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}}\right)\Big/\left(8\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 4, 6316 leaves):

$$\left(2\,(-1)^{5/6}\,a^{1/3}\right.$$

$$\left(\mathrm{EllipticPi}\left[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\Big/\right.$$

$$\left(2\,a^{1/3}-\left(-i+\sqrt{3}\right)b^{1/3}\right)+\left((-1)^{5/6}\,\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-i\,b^{1/3}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\right)\Big/\left(\left(i+\sqrt{3}\right)\left(a^{1/3}-i\,b^{1/3}\right)\right)-$$

$$\left((-1)^{1/3}\,\mathrm{EllipticPi}\left[\frac{i\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-i\,b^{1/3}},\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(i+\sqrt{3}\right)b^{1/3}\right)+$$

$$\left((-1)^{5/6}\,\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+i\,b^{1/3}},\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.\left.(-1)^{1/3}\right]\right) \Big/ \left(\left(\mathrm{i}+\sqrt{3}\right)\left(a^{1/3}+\mathrm{i}\, b^{1/3}\right)\right) - \left((-1)^{1/3}\,\text{EllipticPi}\left[\frac{\mathrm{i}\sqrt{3}\, a^{1/3}}{(-1)^{1/3}a^{1/3}+\mathrm{i}\, b^{1/3}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right) \Big/ \left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right) +$$

$$\text{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right] \Big/$$

$$\left.\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\left.\text{Tan}[c+d\,x]^{1/3}\right) \Big/$$

$$\left(d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\right.$$

$$\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}$$

$$\left(-\frac{1}{\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\,\left(1+\text{Tan}[c+d\,x]^2\right)^{5/4}}\,(-1)^{5/6}\,a^{1/3}\left(\text{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\right.\right.\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right] \Big/ \left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right) +$$

$$\left((-1)^{5/6}\,\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\, b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.\left.(-1)^{1/3}\right]\right) \Big/ \left(\left(\mathrm{i}+\sqrt{3}\right)\left(a^{1/3}-\mathrm{i}\, b^{1/3}\right)\right) - \left((-1)^{1/3}\,\text{EllipticPi}\right[$$

$$\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-\mathrm{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/$$

$$\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\Bigg((-1)^{5/6}\,\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/$$

$$\left(\left(\mathrm{i}+\sqrt{3}\right)\left(a^{1/3}+\mathrm{i}\,b^{1/3}\right)\right)-\Bigg((-1)^{1/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+\mathrm{i}\,b^{1/3}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\Bigg)\,\text{Sec}[c+d\,x]^2\,\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\ \text{Tan}[c+d\,x]+$$

$$\Bigg((-1)^{5/6}a^{1/3}\Bigg(\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\Bigg((-1)^{5/6}\,\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/$$

$$\left(\left(\mathrm{i}+\sqrt{3}\right)\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\right)-\Bigg((-1)^{1/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-\mathrm{i}\,b^{1/3}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\left((-1)^{5/6}\,\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathbb{i}\,b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\Bigg/\left(\left(\mathbb{i}+\sqrt{3}\right)\left(a^{1/3}+\mathbb{i}\,b^{1/3}\right)\right)-\left((-1)^{1/3}\,\text{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{\mathbb{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathbb{i}\,b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Bigg/$$

$$\left(2\,a^{1/3}+\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\Bigg/\left(2\,a^{1/3}+\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\left.\left(-\frac{b^{1/3}\,\text{Sec}[c+d\,x]^2}{3\,a^{1/3}\,\text{Tan}[c+d\,x]^{2/3}}+\frac{2\,b^{2/3}\,\text{Sec}[c+d\,x]^2}{3\,a^{2/3}\,\text{Tan}[c+d\,x]^{1/3}}\right)\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right)\Bigg/$$

$$\left(\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\,\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\right.$$

$$\left.\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}\right)+$$

$$\frac{1}{\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\,\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}}\,2\,(-1)^{5/6}\,a^{1/3}\left(\left((-1)^{2/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\Bigg/\right.$$

$$\left(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\left(\mathbb{i}+(-1)^{1/6}\right)\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6}\,a^{1/3}-b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg) - \left(\mathrm{i}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right)\left(\mathrm{i}+\sqrt{3}\right)a^{1/3}\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg) + \left(b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\mathrm{i}\,\sqrt{3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg) - \left(\mathrm{i}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right)\left(\mathrm{i}+\sqrt{3}\right)a^{1/3}\left(a^{1/3}+\mathrm{i}\,b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)+\left(b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Big/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\mathrm{i}\,\sqrt{3}\,\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3}\,a^{1/3}+\mathrm{i}\,b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)+\left((-1)^{2/3}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Big/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\left(\mathrm{i}+(-1)^{1/6}\right)\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6}\,a^{1/3}+b^{1/3}\right)}\right)$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)\Bigg)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\mathrm{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\;+$$

$$\Bigg((-1)^{5/6}\,b^{1/3}\Bigg(\mathrm{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\,\mathrm{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\Bigg((-1)^{5/6}\,\mathrm{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big)\Big/$$

$$\Big(\big(\mathrm{i}+\sqrt{3}\big)\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\Big)-\Big((-1)^{1/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big)\Big/\Big(2\,a^{1/3}-\big(\mathrm{i}+\sqrt{3}\big)\,b^{1/3}\Big)+$$

$$\Big((-1)^{5/6}\,\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Big)\Big/\Big(\big(\mathrm{i}+\sqrt{3}\big)\left(a^{1/3}+\mathrm{i}\,b^{1/3}\right)\Big)-\Big((-1)^{1/3}\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathrm{i}\,b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big)\Big/$$

$$\Big(2\,a^{1/3}+\big(\mathrm{i}+\sqrt{3}\big)\,b^{1/3}\Big)+\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/\Big(2\,a^{1/3}+\big(-\mathrm{i}+\sqrt{3}\big)\,b^{1/3}\Big)\Big)$$

$$\text{Sec}[c+d\,x]^2\,\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\Bigg)\Bigg/$$

$$\Bigg(3\left(1+(-1)^{1/3}\right)\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}$$

$$\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\;\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}\Bigg)-$$

$$\frac{1}{\left(\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}\right)^{3/2}\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}}\,(-1)^{5/6}\,a^{1/3}$$

$$\Bigg(\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/$$

$$\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)\,b^{1/3}\right)+\Bigg(\left(-1\right)^{5/6}\,\text{EllipticPi}\Big[\frac{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\Big],\ \left(-1\right)^{1/3}\Big]\Bigg)\Big/$$

$$\left(\left(\mathrm{i}+\sqrt{3}\right)\,\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\right)-\Bigg(\left(-1\right)^{1/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\sqrt{3}\,a^{1/3}}{\left(-1\right)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\Big],\ \left(-1\right)^{1/3}\Big]\Bigg)\Big/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)\,b^{1/3}\right)+$$

$$\Bigg(\left(-1\right)^{5/6}\,\text{EllipticPi}\Big[\frac{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\Big],$$

$$\left(-1\right)^{1/3}\Big]\Bigg)\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\,\left(a^{1/3}+\mathrm{i}\,b^{1/3}\right)\right)-\Bigg(\left(-1\right)^{1/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\sqrt{3}\,a^{1/3}}{\left(-1\right)^{1/3}\,a^{1/3}+\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\Big],\ \left(-1\right)^{1/3}\Big]\Bigg)\Big/\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)\,b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+\left(-1\right)^{1/6}\right)\,a^{1/3}}{\left(-1\right)^{1/6}\,a^{1/3}+b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+\left(-1\right)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\Big],$$

$$\left(-1\right)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)\,b^{1/3}\right)\Bigg)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+\left(-1\right)^{1/3}\right)\,a^{1/3}}}\ \sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\left(-\frac{\text{Sec}[c+d\,x]^{2}\,\text{Tan}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)}{\left(1+\text{Tan}[c+d\,x]^{2}\right)^{3/2}}+\frac{b\,\text{Sec}[c+d\,x]^{2}}{\sqrt{1+\text{Tan}[c+d\,x]^{2}}}\right)\Bigg)\Bigg)$$

Problem 678: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int \frac{1}{\operatorname{Tan}[c+d x]^{1/3}\sqrt{a+b \operatorname{Tan}[c+d x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$\left(3\,\text{AppellF1}\left[\frac{2}{3},1,\frac{1}{2},\frac{5}{3},-i \operatorname{Tan}[c+d x],-\frac{b \operatorname{Tan}[c+d x]}{a}\right] \operatorname{Tan}[c+d x]^{2/3}\sqrt{1+\frac{b \operatorname{Tan}[c+d x]}{a}}\right)\Big/\left(4 d \sqrt{a+b \operatorname{Tan}[c+d x]}\right)+\left(3\,\text{AppellF1}\left[\frac{2}{3},1,\frac{1}{2},\frac{5}{3},i \operatorname{Tan}[c+d x],-\frac{b \operatorname{Tan}[c+d x]}{a}\right] \operatorname{Tan}[c+d x]^{2/3}\sqrt{1+\frac{b \operatorname{Tan}[c+d x]}{a}}\right)\Big/\left(4 d \sqrt{a+b \operatorname{Tan}[c+d x]}\right)$$

Result (type 4, 6745 leaves):

$$\left(\left(-\frac{1}{a}-\frac{\operatorname{Cos}[2(c+d x)]}{a}\right)\operatorname{Sec}[c+d x]\,(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \operatorname{Tan}[c+d x]^{2/3}\right)\Big/\left(d\sqrt{a+b \operatorname{Tan}[c+d x]}\right)+$$

$$\left(\operatorname{Sec}[c+d x]\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\left(\frac{4\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}{3 a \operatorname{Tan}[c+d x]^{1/3}}+\frac{1}{a}\right.\right.$$

$$\left.\operatorname{Cos}[3(c+d x)] \operatorname{Csc}[c+d x]\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \operatorname{Tan}[c+d x]^{2/3}\right)$$

$$\left(\frac{6 \operatorname{Tan}[c+d x]^{2/3}\sqrt{\frac{a+b \operatorname{Tan}[c+d x]}{\sqrt{1+\operatorname{Tan}[c+d x]^2}}}}{\left(1+\operatorname{Tan}[c+d x]^2\right)^{3/4}}+\frac{1}{\sqrt{\frac{a+b \operatorname{Tan}[c+d x]}{\sqrt{1+\operatorname{Tan}[c+d x]^2}}}\left(1+\operatorname{Tan}[c+d x]^2\right)^{1/4}}\right.$$

$$6\,i\,a^{4/3}\left(\text{EllipticPi}\left[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\operatorname{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(2a^{1/3}-\left(-i+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-i\,b^{1/3}},\right.$$

$$\left.\operatorname{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\Big/\left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}+b^{1/3}\right)\right)+$$

$$\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-i\,b^{1/3}},\operatorname{ArcSin}\left[\right.\right.\right.$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],\ (-1)^{1/3}\Big]\Bigg/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}-b^{1/3}\right)\right)+\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],\ (-1)^{1/3}\Big]\Bigg)\Big/$$

$$\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],\ (-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\Bigg)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\ \sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\ \Bigg)\Bigg)\Bigg/$$

$$\left(d\sqrt{a+b\,\text{Tan}[c+d\,x]}\ \left(-\frac{9\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^{5/3}\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}}{\left(1+\text{Tan}[c+d\,x]^2\right)^{7/4}}-\right.\right.$$

$$\frac{1}{\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\ \left(1+\text{Tan}[c+d\,x]^2\right)^{5/4}}$$

$$3\,\mathrm{i}\,a^{4/3}\Bigg(\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],$$

$$(-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\Big],\ (-1)^{1/3}\Big]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}+b^{1/3}\right)\right)+$$

$$\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\mathbb{i}\sqrt{3}\;a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathbb{i}\,b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathbb{i}\,b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],$$

$$(-1)^{1/3}\right]\Big/\left(\left(\mathbb{i}+\sqrt{3}\right)\left(\mathbb{i}\,a^{1/3}-b^{1/3}\right)\right)+\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\mathbb{i}\sqrt{3}\;a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathbb{i}\,b^{1/3}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\right)\Big/$$

$$\left(2\,a^{1/3}+\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}+\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\text{Sec}[c+d\,x]^2\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\text{Tan}[c+d\,x]+\frac{4\,\text{Sec}[c+d\,x]^2\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}}{\text{Tan}[c+d\,x]^{1/3}\left(1+\text{Tan}[c+d\,x]^2\right)^{3/4}}+$$

$$\left(3\,\mathbb{i}\,a^{4/3}\left(\text{EllipticPi}\left[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.\right.$$

$$(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}-\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathbb{i}\,b^{1/3}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],(-1)^{1/3}\right]\Big/$$

$$\left(\left(\mathbb{i}+\sqrt{3}\right)\left(\mathbb{i}\,a^{1/3}+b^{1/3}\right)\right)+\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\mathbb{i}\sqrt{3}\;a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathbb{i}\,b^{1/3}},\text{ArcSin}\right[\right.$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\;],\; (-1)^{1/3}]\Big) \Big/ \left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}+\mathrm{i}\, b^{1/3}},\; \text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\;],$$

$$(-1)^{1/3}\Big] \Big/ \left(\left(\mathrm{i}+\sqrt{3}\right) \left(\mathrm{i}\, a^{1/3}-b^{1/3}\right)\right)+\Bigg((-1)^{2/3}\, \text{EllipticPi}\Big[\frac{\mathrm{i}\sqrt{3}\; a^{1/3}}{(-1)^{1/3}\, a^{1/3}+\mathrm{i}\, b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\;],\; (-1)^{1/3}\Big]\Bigg) \Big/$$

$$\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(\mathrm{i}+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6}\, a^{1/3}+b^{1/3}},\; \text{ArcSin}\Big[$$

$$\sqrt{\frac{a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\;],\; (-1)^{1/3}\Big] \Big/ \left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right) b^{1/3}\right)\Bigg)$$

$$\left(-\frac{b^{1/3}\, \text{Sec}[c+d\,x]^2}{3\,a^{1/3}\, \text{Tan}[c+d\,x]^{2/3}}+\frac{2\,b^{2/3}\, \text{Sec}[c+d\,x]^2}{3\,a^{2/3}\, \text{Tan}[c+d\,x]^{1/3}}\right) \sqrt{\frac{a^{1/3}+b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\;\Bigg) \Big/$$

$$\Bigg(\sqrt{1-\frac{b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\, \text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\; \sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}$$

$$\left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}\Bigg)+$$

$$\frac{1}{\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\; \left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}}\; 6\,\mathrm{i}\, a^{4/3}\, \Bigg(\left((-1)^{2/3}\, b^{1/3}\, \text{Sec}[c+d\,x]^2\right) \Big/$$

$$\Bigg(6\left(1+(-1)^{1/3}\right) a^{1/3} \left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\, b^{1/3}\, \text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\left(\text{i}+(-1)^{1/6}\right)\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6}\,a^{1/3}-b^{1/3}\right)}\right)$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}\right)+\left(\left((-1)^{2/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)\left(\text{i}+\sqrt{3}\right)a^{1/3}\left(\text{i}\,a^{1/3}+b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}-\text{i}\,b^{1/3}}\right)\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left.\text{Tan}[c+d\,x]^{2/3}\right)-\left(\left((-1)^{1/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(\text{i}+\sqrt{3}\right)b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{\text{i}\sqrt{3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3}\,a^{1/3}-\text{i}\,b^{1/3}\right)}\right)$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\;\text{Tan}[c+d\,x]^{2/3}\right)+\left(\left((-1)^{2/3}\,b^{1/3}\,\text{Sec}[c+d\,x]^2\right)\right/$$

$$\left(6\left(1+(-1)^{1/3}\right)\left(\text{i}+\sqrt{3}\right)a^{1/3}\left(\text{i}\,a^{1/3}-b^{1/3}\right)\sqrt{1-\frac{a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)a^{1/3}}}$$

$$\left(1-\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}+\mathrm{i}\, b^{1/3}}\right) \sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\left.\operatorname{Tan}[c+d x]^{2/3}\right) - \left((-1)^{1/3} b^{1/3} \operatorname{Sec}[c+d x]^2\right) \Big/$$

$$\left(6\left(1+(-1)^{1/3}\right) a^{1/3}\left(2 a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\mathrm{i} \sqrt{3}\left(a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3} a^{1/3}+\mathrm{i}\, b^{1/3}\right)}\right)$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}} \operatorname{Tan}[c+d x]^{2/3}\right) + \left((-1)^{2/3} b^{1/3} \operatorname{Sec}[c+d x]^2\right) \Big/$$

$$\left(6\left(1+(-1)^{1/3}\right) a^{1/3}\left(2 a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right) a^{1/3}}}$$

$$\left(1-\frac{\left(\mathrm{i}+(-1)^{1/6}\right)\left(a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6} a^{1/3}+b^{1/3}\right)}\right)$$

$$\left.\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}} \operatorname{Tan}[c+d x]^{2/3}\right)\right)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}} \sqrt{1-\frac{b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}+\frac{b^{2/3} \operatorname{Tan}[c+d x]^{2/3}}{a^{2/3}}} +$$

$$\left(\mathrm{i}\, a\, b^{1/3}\left(\operatorname{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6} a^{1/3}-b^{1/3}}, \operatorname{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\right],\right.\right.\right.$$

$$(-1)^{1/3}\Big] \Big/ \left(2\,a^{1/3}-\left(-i+\sqrt{3}\right) b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}-i\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Big],\ (-1)^{1/3}\Big] \Big/$$

$$\left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}+b^{1/3}\right)\right)+\left((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3} a^{1/3}-i\,b^{1/3}},\text{ArcSin}\Big[\right.$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\right) \Big/ \left(2\,a^{1/3}-\left(i+\sqrt{3}\right) b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}+i\,b^{1/3}},\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big] \Big/ \left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}-b^{1/3}\right)\right)+\left((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3} a^{1/3}+i\,b^{1/3}},\right.$$

$$\left.\text{ArcSin}\Big[\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Big],\ (-1)^{1/3}\Big]\right) \Big/$$

$$\left(2\,a^{1/3}+\left(i+\sqrt{3}\right) b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6} a^{1/3}+b^{1/3}},\text{ArcSin}\Big[$$

$$\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3} b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\Big],\ (-1)^{1/3}\Big] \Big/ \left(2\,a^{1/3}+\left(-i+\sqrt{3}\right) b^{1/3}\right)\right)$$

$$\left.\text{Sec}[c+d\,x]^2\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\right) \Big/$$

$$\left(\left(1+(-1)^{1/3}\right)\sqrt{\frac{a^{1/3}+b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right) a^{1/3}}}\ \text{Tan}[c+d\,x]^{2/3}\right.$$

$$\left.\sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{1+\text{Tan}[c+d\,x]^2}}}\ \left(1+\text{Tan}[c+d\,x]^2\right)^{1/4}\right)+$$

$$\left(3\,\text{Tan}[c+d\,x]^{2/3}\left(-\frac{\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\ (a+b\,\text{Tan}[c+d\,x])}{\left(1+\text{Tan}[c+d\,x]^2\right)^{3/2}}+\frac{b\,\text{Sec}[c+d\,x]^2}{\sqrt{1+\text{Tan}[c+d\,x]^2}}\right)\right) \Big/$$

$$\left(\sqrt{\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Tan}[c+d\,x]^2}}}\,\left(1+\mathrm{Tan}[c+d\,x]^2\right)^{3/4}\right)-$$

$$\frac{1}{\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Tan}[c+d\,x]^2}}\right)^{3/2}\left(1+\mathrm{Tan}[c+d\,x]^2\right)^{1/4}}$$

$$3\,\mathrm{i}\,a^{4/3}\left(\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}+b^{1/3}\right)\right)+$$

$$\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\right.$$

$$\left.(-1)^{1/3}\right]\Big/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}-b^{1/3}\right)\right)+\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+\mathrm{i}\,b^{1/3}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Big/$$

$$\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{a^{1/3}+(-1)^{2/3}b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\sqrt{\frac{a^{1/3}+b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{\left(1+(-1)^{1/3}\right)a^{1/3}}}\,\sqrt{1-\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\mathrm{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\left(-\frac{\text{Sec}[c+d x]^2 \,\text{Tan}[c+d x]\,(a+b\,\text{Tan}[c+d x])}{\left(1+\text{Tan}[c+d x]^2\right)^{3/2}}+\frac{b\,\text{Sec}[c+d x]^2}{\sqrt{1+\text{Tan}[c+d x]^2}}\right)\Bigg)\Bigg)$$

Problem 679: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int \frac{1}{\text{Tan}[c+d x]^{2/3}\sqrt{a+b\,\text{Tan}[c+d x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$\left(3\,\text{AppellF1}\left[\frac{1}{3},1,\frac{1}{2},\frac{4}{3},-i\,\text{Tan}[c+d x],-\frac{b\,\text{Tan}[c+d x]}{a}\right]\text{Tan}[c+d x]^{1/3}\sqrt{1+\frac{b\,\text{Tan}[c+d x]}{a}}\right)\Big/$$
$$\left(2\,d\sqrt{a+b\,\text{Tan}[c+d x]}\right)+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{3},1,\frac{1}{2},\frac{4}{3},i\,\text{Tan}[c+d x],-\frac{b\,\text{Tan}[c+d x]}{a}\right]\text{Tan}[c+d x]^{1/3}\sqrt{1+\frac{b\,\text{Tan}[c+d x]}{a}}\right)\Big/$$
$$\left(2\,d\sqrt{a+b\,\text{Tan}[c+d x]}\right)$$

Result (type 4, 6198 leaves):

$$\Bigg(2\,(-1)^{2/3}\,a^{1/3}$$

$$\left(-\left(\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],(-1)^{1/3}\right]\right)\Big/\right.\right.$$

$$\left.\left(2\,a^{1/3}-\left(-i+\sqrt{3}\right)b^{1/3}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-i\,b^{1/3}},\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],(-1)^{1/3}\right]\Big/$$

$$\left(\left(1-i\sqrt{3}\right)\left(a^{1/3}-i\,b^{1/3}\right)\right)+\text{EllipticPi}\left[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-i\,b^{1/3}},\right.$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}-\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathbb{i}\,b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Big/$$

$$\left(\left(\mathbb{i}+\sqrt{3}\right)\left(\mathbb{i}\,a^{1/3}-b^{1/3}\right)\right)-\text{EllipticPi}\Big[\frac{\mathbb{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathbb{i}\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\ (-1)^{1/3}\Big]\Big/\left(2\,a^{1/3}+\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+$$

$$\left((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\ \text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\ (-1)^{1/3}\Big]\right)\Big/$$

$$\left.\left(2\,a^{1/3}+\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{1+\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}$$

$$\left(\frac{\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}[c+d\,x]^{1/3}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\left.\frac{\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}[c+d\,x]^{1/3}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\ \right)\Big/$$

$$\left(d\,\left(\text{Sec}[c+d\,x]^2\right)^{1/4}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\ \sqrt{\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{\text{Sec}[c+d\,x]^2}}}\right.$$

$$\Bigg(\Bigg((-1)^{2/3} a^{1/3} \Bigg(-\Bigg(\Bigg((-1)^{2/3} \text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6} a^{1/3}-b^{1/3}}, \text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Bigg) \Big/ \left(2 a^{1/3}-\left(-i+\sqrt{3}\right) b^{1/3}\right)\Bigg)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}-i b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big], (-1)^{1/3}\Big] \Big/ \left(\left(1-i \sqrt{3}\right) \left(a^{1/3}-i b^{1/3}\right)\right)+$$

$$\text{EllipticPi}\Big[\frac{i \sqrt{3}\, a^{1/3}}{(-1)^{1/3} a^{1/3}-i b^{1/3}}, \text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big], (-1)^{1/3}\Big] \Big/$$

$$\left(2 a^{1/3}-\left(i+\sqrt{3}\right) b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right) a^{1/3}}{a^{1/3}+i b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big], (-1)^{1/3}\Big] \Big/ \left(\left(i+\sqrt{3}\right) \left(i a^{1/3}-b^{1/3}\right)\right)-$$

$$\text{EllipticPi}\Big[\frac{i \sqrt{3}\, a^{1/3}}{(-1)^{1/3} a^{1/3}+i b^{1/3}}, \text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big], (-1)^{1/3}\Big] \Big/$$

$$\left(2 a^{1/3}+\left(i+\sqrt{3}\right) b^{1/3}\right)+\Bigg((-1)^{2/3} \text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right) a^{1/3}}{(-1)^{1/6} a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big], (-1)^{1/3}\Big]\Bigg) \Big/ \left(2 a^{1/3}+\left(-i+\sqrt{3}\right) b^{1/3}\right)\Bigg)$$

$$\left(-\frac{b^{1/3} \text{Sec}[c+d x]^2}{3 a^{1/3} \text{Tan}[c+d x]^{2/3}}+\frac{2 b^{2/3} \text{Sec}[c+d x]^2}{3 a^{2/3} \text{Tan}[c+d x]^{1/3}}\right) \sqrt{\frac{1+\frac{b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Bigg) \Big/$$

$$\left(\left(\text{Sec}[c+d x]^2\right)^{1/4} \sqrt{1-\frac{b^{1/3} \text{Tan}[c+d x]^{1/3}}{a^{1/3}}+\frac{b^{2/3} \text{Tan}[c+d x]^{2/3}}{a^{2/3}}} \sqrt{\frac{a+b \text{Tan}[c+d x]}{\sqrt{\text{Sec}[c+d x]^2}}}\right)+$$

$$\frac{1}{\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/4}\sqrt{\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}}}\;2\,(-1)^{2/3}\,a^{1/3}$$

$$\Bigg(\left((-1)^{1/3}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/\Bigg(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)$$

$$\sqrt{1-\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{(-1)^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}}$$

$$\left(1-\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/6}\,a^{1/3}-b^{1/3}\right)}\right)\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}$$

$$\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)+\left((-1)^{2/3}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/\Bigg(6\left(1+(-1)^{1/3}\right)\left(1-\mathrm{i}\sqrt{3}\right)a^{1/3}$$

$$\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\sqrt{1-\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{(-1)^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}}$$

$$\left(1-\frac{a^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{a^{1/3}-\mathrm{i}\,b^{1/3}}\right)\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)+$$

$$\left((-1)^{2/3}\,b^{1/3}\,\mathrm{Sec}[c+d\,x]^2\right)\Bigg/\Bigg(6\left(1+(-1)^{1/3}\right)a^{1/3}\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)$$

$$\sqrt{1-\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{(-1)^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}}$$

$$\left(1-\frac{\mathrm{i}\sqrt{3}\,a^{1/3}\left(1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}\right)}{\left(1+(-1)^{1/3}\right)\left((-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}\right)}\right)\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\Bigg)+$$

$$\left((-1)^{2/3} b^{1/3} \operatorname{Sec}[c+d x]^2\right) \Big/ \left(6 \left(1+(-1)^{1/3}\right) \left(i+\sqrt{3}\right) a^{1/3} \left(i a^{1/3}-b^{1/3}\right) \sqrt{1-\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \sqrt{1-\frac{(-1)^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}} \left(1-\frac{a^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{a^{1/3}+i b^{1/3}}\right) \sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \operatorname{Tan}[c+d x]^{2/3}\right) -$$

$$\left((-1)^{2/3} b^{1/3} \operatorname{Sec}[c+d x]^2\right) \Big/ \left(6 \left(1+(-1)^{1/3}\right) a^{1/3} \left(2 a^{1/3}+\left(i+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \sqrt{1-\frac{(-1)^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}} \left(1-\frac{i \sqrt{3} a^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{\left(1+(-1)^{1/3}\right) \left((-1)^{1/3} a^{1/3}+i b^{1/3}\right)}\right) \sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \operatorname{Tan}[c+d x]^{2/3}\right) -$$

$$\left((-1)^{1/3} b^{1/3} \operatorname{Sec}[c+d x]^2\right) \Big/ \left(6 \left(1+(-1)^{1/3}\right) a^{1/3} \left(2 a^{1/3}+\left(-i+\sqrt{3}\right) b^{1/3}\right) \sqrt{1-\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \sqrt{1-\frac{(-1)^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{1+(-1)^{1/3}}} \left(1-\frac{\left(i+(-1)^{1/6}\right) a^{1/3} \left(1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}\right)}{\left(1+(-1)^{1/3}\right) \left((-1)^{1/6} a^{1/3}+b^{1/3}\right)}\right) \sqrt{\frac{1+\frac{(-1)^{2/3} b^{1/3} \operatorname{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}} \operatorname{Tan}[c+d x]^{2/3}\right)\right)$$

$$\sqrt{\frac{1+\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\mathrm{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\;+$$

$$\left(1\Bigg/\left(3\left(1+(-1)^{1/3}\right)\sqrt{\frac{1+\frac{b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\mathrm{Tan}[c+d\,x]^{2/3}\sqrt{\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}}\right)\right)$$

$$(-1)^{2/3}\,b^{1/3}$$

$$\left(-\left(\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\right.\right.\right.\right.$$

$$\left.\left.(-1)^{1/3}\right]\Bigg/\left(2\,a^{1/3}-\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\right)+\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathrm{i}\,b^{1/3}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Bigg/\left(\left(1-\mathrm{i}\,\sqrt{3}\right)\left(a^{1/3}-\mathrm{i}\,b^{1/3}\right)\right)+$$

$$\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Bigg/$$

$$\left(2\,a^{1/3}-\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\mathrm{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathrm{i}\,b^{1/3}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Bigg/\left(\left(\mathrm{i}+\sqrt{3}\right)\left(\mathrm{i}\,a^{1/3}-b^{1/3}\right)\right)-$$

$$\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathrm{i}\,b^{1/3}},\,\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Bigg/$$

$$\left(2\,a^{1/3}+\left(\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)+\left((-1)^{2/3}\,\mathrm{EllipticPi}\left[\frac{\left(\mathrm{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\mathrm{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Bigg/\left(2\,a^{1/3}+\left(-\mathrm{i}+\sqrt{3}\right)b^{1/3}\right)\right)$$

$$\left(\text{Sec}[c+d x]^2\right)^{3/4} \sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d x]^{2/3}}{a^{2/3}}}\; -$$

$$\frac{1}{\left(\text{Sec}[c+d x]^2\right)^{1/4}\sqrt{\frac{a+b\,\text{Tan}[c+d x]}{\sqrt{\text{Sec}[c+d x]^2}}}}\,(-1)^{2/3}\,a^{1/3}$$

$$\Bigg(-\Bigg(\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}-b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],$$

$$(-1)^{1/3}\Big]\Bigg)\Big/\left(2a^{1/3}-\left(-i+\sqrt{3}\right)b^{1/3}\right)\Bigg)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-i\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/\left(\left(1-i\sqrt{3}\right)\left(a^{1/3}-i\,b^{1/3}\right)\right)+$$

$$\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}-i\,b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/$$

$$\left(2a^{1/3}-\left(i+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\Big[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+i\,b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/\left(\left(i+\sqrt{3}\right)\left(i\,a^{1/3}-b^{1/3}\right)\right)-$$

$$\text{EllipticPi}\Big[\frac{i\sqrt{3}\,a^{1/3}}{(-1)^{1/3}a^{1/3}+i\,b^{1/3}},\,\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Big/$$

$$\left(2a^{1/3}+\left(i+\sqrt{3}\right)b^{1/3}\right)+\Bigg((-1)^{2/3}\,\text{EllipticPi}\Big[\frac{\left(i+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}a^{1/3}+b^{1/3}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{1+\frac{(-1)^{2/3}b^{1/3}\text{Tan}[c+d x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\Big],\,(-1)^{1/3}\Big]\Bigg)\Big/\left(2a^{1/3}+\left(-i+\sqrt{3}\right)b^{1/3}\right)\Bigg)$$

$$\sqrt{\frac{1+\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}\;\text{Tan}[c+d\,x]-$$

$$\frac{1}{\left(\text{Sec}[c+d\,x]^2\right)^{1/4}\left(\frac{a+b\,\text{Tan}[c+d\,x]}{\sqrt{\text{Sec}[c+d\,x]^2}}\right)^{3/2}}\;(-1)^{2/3}\,a^{1/3}$$

$$\left(-\left(\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}-b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\right.\right.\right.\right.$$

$$\left.\left.(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}-\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\Bigg)+\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}-\mathbb{i}\,b^{1/3}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(\left(1-\mathbb{i}\,\sqrt{3}\right)\left(a^{1/3}-\mathbb{i}\,b^{1/3}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}-\mathbb{i}\,b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/$$

$$\left(2\,a^{1/3}-\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\text{EllipticPi}\left[\frac{\left(1+(-1)^{1/3}\right)a^{1/3}}{a^{1/3}+\mathbb{i}\,b^{1/3}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/\left(\left(\mathbb{i}+\sqrt{3}\right)\left(\mathbb{i}\,a^{1/3}-b^{1/3}\right)\right)-$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\,\sqrt{3}\,a^{1/3}}{(-1)^{1/3}\,a^{1/3}+\mathbb{i}\,b^{1/3}},\,\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\Big/$$

$$\left(2\,a^{1/3}+\left(\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)+\left((-1)^{2/3}\,\text{EllipticPi}\left[\frac{\left(\mathbb{i}+(-1)^{1/6}\right)a^{1/3}}{(-1)^{1/6}\,a^{1/3}+b^{1/3}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{1+\frac{(-1)^{2/3}\,b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\right],\,(-1)^{1/3}\right]\right)\Big/\left(2\,a^{1/3}+\left(-\mathbb{i}+\sqrt{3}\right)b^{1/3}\right)\Bigg)$$

$$\sqrt{\frac{1+\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}}{1+(-1)^{1/3}}}\;\sqrt{1-\frac{b^{1/3}\,\text{Tan}[c+d\,x]^{1/3}}{a^{1/3}}+\frac{b^{2/3}\,\text{Tan}[c+d\,x]^{2/3}}{a^{2/3}}}$$

$$\left.\left.\left(b\,\sqrt{\text{Sec}[c+d\,x]^2}-\frac{\text{Tan}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)}{\sqrt{\text{Sec}[c+d\,x]^2}}\right)\right)\right)$$

Problem 680: Mathematica result simpler than optimal antiderivative, IF it can be verified!

$$\int \frac{1}{\text{Tan}[c+d\,x]^{4/3}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 163 leaves, 9 steps):

$$-\left(\left(3\,\text{AppellF1}\left[-\frac{1}{3},1,\frac{1}{2},\frac{2}{3},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)\Big/\left(2\,d\,\text{Tan}[c+d\,x]^{1/3}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\right)-\frac{3\,\text{AppellF1}\left[-\frac{1}{3},1,\frac{1}{2},\frac{2}{3},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}}{2\,d\,\text{Tan}[c+d\,x]^{1/3}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 23 249 leaves): Display of huge result suppressed!

Problem 681: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f\,x]^4\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{1/3}\,dx$$

Optimal (type 3, 525 leaves, 16 steps):

$$-\frac{1}{4}\left(c-\sqrt{-d^2}\right)^{1/3}x-\frac{1}{4}\left(c+\sqrt{-d^2}\right)^{1/3}x-\frac{\sqrt{3}\,\sqrt{-d^2}\,\left(c-\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c-\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\,d\,f}+$$

$$\frac{\sqrt{3}\,\sqrt{-d^2}\,\left(c+\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c+\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\,d\,f}+$$

$$\frac{\sqrt{-d^2}\,\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\,d\,f}-\frac{\sqrt{-d^2}\,\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\,d\,f}+$$

$$\frac{3\,\sqrt{-d^2}\,\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c-\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\,d\,f}-$$

$$\frac{3\,\sqrt{-d^2}\,\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c+\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\,d\,f}+$$

$$\frac{3\,\left(9\,c^2-35\,d^2\right)\,(c+d\,\text{Tan}[e+f\,x])^{4/3}}{140\,d^3\,f}-$$

$$\frac{9\,c\,\text{Tan}[e+f\,x]\,(c+d\,\text{Tan}[e+f\,x])^{4/3}}{35\,d^2\,f}+\frac{3\,\text{Tan}[e+f\,x]^2\,(c+d\,\text{Tan}[e+f\,x])^{4/3}}{10\,d\,f}$$

Result (type 3, 442 leaves):

$$-\frac{1}{4\,f}\,i\,\Bigg(2\,\sqrt{3}\,(c-i\,d)^{1/3}\,\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\right]-2\,\sqrt{3}\,(c+i\,d)^{1/3}$$

$$\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]-2\,(c-i\,d)^{1/3}\,\text{Log}\left[(c-i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]+$$

$$2\,(c+i\,d)^{1/3}\,\text{Log}\left[(c+i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]+$$

$$(c-i\,d)^{1/3}\,\text{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]-$$

$$(c+i\,d)^{1/3}\,\text{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]\Bigg)+$$

$$\frac{1}{f}(c+d\,\text{Tan}[e+f\,x])^{1/3}\left(\frac{3\,c\,\left(9\,c^2-37\,d^2\right)}{140\,d^3}+\frac{3\,c\,\text{Sec}[e+f\,x]^2}{70\,d}-\right.$$

$$\left.\frac{3\,\text{Sec}[e+f\,x]\,\left(3\,c^2\,\text{Sin}[e+f\,x]+49\,d^2\,\text{Sin}[e+f\,x]\right)}{140\,d^2}+\frac{3}{10}\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)$$

Problem 683: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[e+f\,x]^2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}\,dx$$

Optimal (type 3, 439 leaves, 14 steps):

$$\frac{1}{4}\left(c-\sqrt{-d^2}\right)^{1/3}x+\frac{1}{4}\left(c+\sqrt{-d^2}\right)^{1/3}x-$$
$$\frac{\sqrt{3}\,d\left(c-\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c-\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}+\frac{\sqrt{3}\,d\left(c+\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c+\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}+$$
$$\frac{d\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}-\frac{d\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}+$$
$$\frac{3\,d\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c-\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}-$$
$$\frac{3\,d\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c+\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}+\frac{3\,(c+d\,\text{Tan}[e+f\,x])^{4/3}}{4\,d\,f}$$

Result (type 3, 355 leaves):

$$\frac{1}{4\,f}\left(i\left(2\sqrt{3}\,(c-i\,d)^{1/3}\,\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\right]-2\sqrt{3}\,(c+i\,d)^{1/3}\right.\right.$$
$$\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]-2\,(c-i\,d)^{1/3}\,\text{Log}\left[(c-i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]+$$
$$2\,(c+i\,d)^{1/3}\,\text{Log}\left[(c+i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]+$$
$$(c-i\,d)^{1/3}\,\text{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]-$$
$$\left.(c+i\,d)^{1/3}\,\text{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]\right)+$$
$$\left.\frac{3\,(c+d\,\text{Tan}[e+f\,x])^{4/3}}{d}\right)$$

Problem 685: Result unnecessarily involves imaginary or complex numbers.

$$\int (c+d\,\text{Tan}[e+f\,x])^{1/3}\,dx$$

Optimal (type 3, 415 leaves, 13 steps):

$$-\frac{1}{4}\left(c-\sqrt{-d^2}\right)^{1/3}x-\frac{1}{4}\left(c+\sqrt{-d^2}\right)^{1/3}x+$$
$$\frac{\sqrt{3}\,d\left(c-\sqrt{-d^2}\right)^{1/3}\operatorname{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}}{\left(c-\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}-\frac{\sqrt{3}\,d\left(c+\sqrt{-d^2}\right)^{1/3}\operatorname{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}}{\left(c+\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}-$$
$$\frac{d\left(c-\sqrt{-d^2}\right)^{1/3}\operatorname{Log}[\operatorname{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}+\frac{d\left(c+\sqrt{-d^2}\right)^{1/3}\operatorname{Log}[\operatorname{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}-$$
$$\frac{3\,d\left(c-\sqrt{-d^2}\right)^{1/3}\operatorname{Log}\left[\left(c-\sqrt{-d^2}\right)^{1/3}-(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}+$$
$$\frac{3\,d\left(c+\sqrt{-d^2}\right)^{1/3}\operatorname{Log}\left[\left(c+\sqrt{-d^2}\right)^{1/3}-(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}$$

Result (type 3, 333 leaves) :

$$-\frac{1}{4\,f}\,i\left(2\sqrt{3}\,(c-i\,d)^{1/3}\operatorname{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\right]-2\sqrt{3}\,(c+i\,d)^{1/3}\right.$$
$$\operatorname{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]-2\,(c-i\,d)^{1/3}\operatorname{Log}\left[(c-i\,d)^{1/3}-(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}\right]+$$
$$2\,(c+i\,d)^{1/3}\operatorname{Log}\left[(c+i\,d)^{1/3}-(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}\right]+$$
$$(c-i\,d)^{1/3}\operatorname{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}+(c+d\,\operatorname{Tan}[e+f\,x])^{2/3}\right]-$$
$$\left.(c+i\,d)^{1/3}\operatorname{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}+(c+d\,\operatorname{Tan}[e+f\,x])^{2/3}\right]\right)$$

Problem 687: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[e+f\,x]^2\,(c+d\,\operatorname{Tan}[e+f\,x])^{1/3}\,dx$$

Optimal (type 3, 546 leaves, 20 steps) :

$$\frac{1}{4}\left(c-\sqrt{-d^2}\right)^{1/3}x+\frac{1}{4}\left(c+\sqrt{-d^2}\right)^{1/3}x-\frac{d\,\text{ArcTan}\left[\frac{c^{1/3}+2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\sqrt{3}\,c^{1/3}}\right]}{\sqrt{3}\,c^{2/3}\,f}-$$

$$\frac{\sqrt{3}\,d\left(c-\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c-\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}+\frac{\sqrt{3}\,d\left(c+\sqrt{-d^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{\left(c+\sqrt{-d^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-d^2}\,f}+$$

$$\frac{d\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}-\frac{d\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}[\text{Cos}[e+f\,x]]}{4\sqrt{-d^2}\,f}-$$

$$\frac{d\,\text{Log}[\text{Tan}[e+f\,x]]}{6\,c^{2/3}\,f}+\frac{d\,\text{Log}\left[c^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{2\,c^{2/3}\,f}+$$

$$\frac{3\,d\left(c-\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c-\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}-$$

$$\frac{3\,d\left(c+\sqrt{-d^2}\right)^{1/3}\text{Log}\left[\left(c+\sqrt{-d^2}\right)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]}{4\sqrt{-d^2}\,f}-\frac{\text{Cot}[e+f\,x]\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{f}$$

Result (type 3, 5474 leaves):

$$-\frac{\text{Cot}[e+f\,x]\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{f}+$$

$$\left(\left(\left(-4\sqrt{3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{c^{1/3}}}{\sqrt{3}}\right]+\right.\right.\right.$$

$$6\sqrt{3}\,c^{2/3}\,(c+i\,d)^{2/3}\,(i\,c+d)\,\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\right]-6\,i\sqrt{3}\,c^{5/3}\,(c-i\,d)^{2/3}$$

$$\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]+6\sqrt{3}\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\text{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\text{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]+$$

$$4\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\text{Log}\left[c^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,i\,c^{5/3}\,(c+i\,d)^{2/3}\,\text{Log}\left[(c-i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\text{Log}\left[(c-i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]+$$
$$6\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\text{Log}\left[(c+i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\text{Log}\left[(c+i\,d)^{1/3}-(c+d\,\text{Tan}[e+f\,x])^{1/3}\right]-2\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d$$
$$\text{Log}\left[c^{2/3}+c^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]+3\,i\,c^{5/3}\,(c+i\,d)^{2/3}\,\text{Log}\Big[$$
$$(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\Big]+3\,c^{2/3}\,(c+i\,d)^{2/3}$$
$$d\,\text{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]-3\,i\,c^{5/3}$$
$$(c-i\,d)^{2/3}\,\text{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+(c+d\,\text{Tan}[e+f\,x])^{2/3}\right]+$$
$$3\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\text{Log}\Big[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\text{Tan}[e+f\,x])^{1/3}+$$

$$\left.(c+d\,\text{Tan}[e+f\,x])^{2/3}\Big]\right)\left(\text{Sec}[e+f\,x]^2\right)^{1/6}$$

$$\left(-\frac{d\,\mathrm{Csc}[e+f\,x]\,\mathrm{Sec}[e+f\,x]^{1/3}}{6\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{2/3}}+\frac{d\,\mathrm{Cos}[2\,(e+f\,x)]\,\mathrm{Csc}[e+f\,x]\,\mathrm{Sec}[e+f\,x]^{1/3}}{2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{2/3}}-\frac{c\,\mathrm{Csc}[e+f\,x]\,\mathrm{Sec}[e+f\,x]^{1/3}\,\mathrm{Sin}[2\,(e+f\,x)]}{2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{2/3}}\right)\left(\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}\right)^{1/3}\Bigg/$$

$$\Bigg(12\,c^{2/3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,f\,\mathrm{Sec}[e+f\,x]^{1/3}\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{1/3}$$

$$\Bigg(-\frac{1}{36\,c^{2/3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{4/3}}$$

$$d\left(-4\sqrt{3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{c^{1/3}}}{\sqrt{3}}\right]+\right.$$

$$6\sqrt{3}\,c^{2/3}\,(c+i\,d)^{2/3}\,(i\,c+d)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\right]-6\,i\sqrt{3}\,c^{5/3}\,(c-i\,d)^{2/3}$$

$$\mathrm{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]+6\sqrt{3}\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\right]+$$

$$4\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\left[c^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,i\,c^{5/3}\,(c+i\,d)^{2/3}\,\mathrm{Log}\left[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\left[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\right]+$$
$$6\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\mathrm{Log}\left[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\right]-$$
$$6\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{Log}\left[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\right]-2\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}$$
$$d\,\mathrm{Log}\left[c^{2/3}+c^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\right]+3\,i\,c^{5/3}\,(c+i\,d)^{2/3}$$
$$\mathrm{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\right]+$$
$$3\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\left[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+\right.$$
$$\left.(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\right]-3\,i\,c^{5/3}\,(c-i\,d)^{2/3}$$
$$\mathrm{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\right]+$$
$$3\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{Log}\left[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+\right.$$
$$\left.\left.(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\right]\right)\,(\mathrm{Sec}[e+f\,x]^2)^{7/6}\left(\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}\right)^{1/3}+$$

$$\frac{1}{36\,c^{2/3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}$$

$$\left(-4\sqrt{3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{c^{1/3}}}{\sqrt{3}}\right]+\right.$$

$$6\sqrt{3}\,c^{2/3}\,(c+i\,d)^{2/3}\,(i\,c+d)\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\Big]-6\,i\,\sqrt{3}\,c^{5/3}\,(c-i\,d)^{2/3}$$
$$\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\Big]+6\sqrt{3}\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\Big]+$$
$$4\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[c^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,i\,c^{5/3}\,(c+i\,d)^{2/3}\,\mathrm{Log}\big[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]+$$
$$6\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\mathrm{Log}\big[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-2\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}$$
$$d\,\mathrm{Log}\big[c^{2/3}+c^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]+3\,i\,c^{5/3}\,(c+i\,d)^{2/3}$$
$$\mathrm{Log}\big[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]+$$
$$3\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+$$
$$(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]-3\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\mathrm{Log}\big[(c+i\,d)^{2/3}+$$
$$(c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]+3\,c^{2/3}\,(c-i\,d)^{2/3}\,d$$
$$\mathrm{Log}\big[(c+i\,d)^{2/3}+(c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]\Bigg)$$

$$(\mathrm{Sec}[e+f\,x]^2)^{1/6}\,\mathrm{Tan}[e+f\,x]\,\left(\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}\right)^{1/3}+$$

$$\left(1\Big/\left(36\,c^{2/3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\,\left(\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}\right)^{2/3}\right)\right)$$

$$\Bigg(-4\sqrt{3}\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{c^{1/3}}}{\sqrt{3}}\Big]+$$

$$6\sqrt{3}\,c^{2/3}\,(c+i\,d)^{2/3}\,(i\,c+d)\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}}{\sqrt{3}}\Big]-6\,i\,\sqrt{3}\,c^{5/3}\,(c-i\,d)^{2/3}$$
$$\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\Big]+6\sqrt{3}\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}}{\sqrt{3}}\Big]+$$
$$4\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[c^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,i\,c^{5/3}\,(c+i\,d)^{2/3}\,\mathrm{Log}\big[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c-i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]+$$
$$6\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\mathrm{Log}\big[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-$$
$$6\,c^{2/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c+i\,d)^{1/3}-(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}\big]-2\,(c-i\,d)^{2/3}\,(c+i\,d)^{2/3}$$
$$d\,\mathrm{Log}\big[c^{2/3}+c^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]+3\,i\,c^{5/3}\,(c+i\,d)^{2/3}$$
$$\mathrm{Log}\big[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]+$$
$$3\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,\mathrm{Log}\big[(c-i\,d)^{2/3}+(c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}+$$
$$(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\big]-3\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,\mathrm{Log}\big[(c+i\,d)^{2/3}+$$

$$(c+\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}]+3 c^{2/3} (c-\text{i} d)^{2/3} d$$

$$\left.\operatorname{Log}\left[(c+\text{i} d)^{2/3}+(c+\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right]\right)$$

$$\left(\operatorname{Sec}[e+f x]^2\right)^{1/6} \left(d \sqrt{\operatorname{Sec}[e+f x]^2}-\frac{\operatorname{Tan}[e+f x] (c+d \operatorname{Tan}[e+f x])}{\sqrt{\operatorname{Sec}[e+f x]^2}}\right)+$$

$$\frac{1}{12 c^{2/3} (c-\text{i} d)^{2/3} (c+\text{i} d)^{2/3} (c+d \operatorname{Tan}[e+f x])^{1/3}} \left(\operatorname{Sec}[e+f x]^2\right)^{1/6}$$

$$\left(\frac{c+d \operatorname{Tan}[e+f x]}{\sqrt{\operatorname{Sec}[e+f x]^2}}\right)^{1/3} \left(-\frac{4 (c-\text{i} d)^{2/3} (c+\text{i} d)^{2/3} d^2 \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3} \left(c^{1/3}-(c+d \operatorname{Tan}[e+f x])^{1/3}\right)}+\right.$$

$$\left(2 \text{i} c^{5/3} (c+\text{i} d)^{2/3} d \operatorname{Sec}[e+f x]^2\right) \Big/ \left((c+d \operatorname{Tan}[e+f x])^{2/3}\right.$$

$$\left.\left((c-\text{i} d)^{1/3}-(c+d \operatorname{Tan}[e+f x])^{1/3}\right)\right)+\left(2 c^{2/3} (c+\text{i} d)^{2/3} d^2 \operatorname{Sec}[e+f x]^2\right) \Big/$$

$$\left((c+d \operatorname{Tan}[e+f x])^{2/3} \left((c-\text{i} d)^{1/3}-(c+d \operatorname{Tan}[e+f x])^{1/3}\right)\right)-$$

$$\left(2 \text{i} c^{5/3} (c-\text{i} d)^{2/3} d \operatorname{Sec}[e+f x]^2\right) \Big/ \left((c+d \operatorname{Tan}[e+f x])^{2/3}\right.$$

$$\left.\left((c+\text{i} d)^{1/3}-(c+d \operatorname{Tan}[e+f x])^{1/3}\right)\right)+\left(2 c^{2/3} (c-\text{i} d)^{2/3} d^2 \operatorname{Sec}[e+f x]^2\right) \Big/$$

$$\left((c+d \operatorname{Tan}[e+f x])^{2/3} \left((c+\text{i} d)^{1/3}-(c+d \operatorname{Tan}[e+f x])^{1/3}\right)\right)-$$

$$\left(2 (c-\text{i} d)^{2/3} (c+\text{i} d)^{2/3} d \left(\frac{c^{1/3} d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3}}+\frac{2 d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{1/3}}\right)\right) \Big/$$

$$\left(c^{2/3}+c^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right)+$$

$$\left(3 \text{i} c^{5/3} (c+\text{i} d)^{2/3} \left(\frac{(c-\text{i} d)^{1/3} d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3}}+\frac{2 d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{1/3}}\right)\right) \Big/$$

$$\left((c-\text{i} d)^{2/3}+(c-\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right)+$$

$$\left(3 c^{2/3} (c+\text{i} d)^{2/3} d \left(\frac{(c-\text{i} d)^{1/3} d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3}}+\frac{2 d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{1/3}}\right)\right) \Big/$$

$$\left((c-\text{i} d)^{2/3}+(c-\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right)-$$

$$\left(3 \text{i} c^{5/3} (c-\text{i} d)^{2/3} \left(\frac{(c+\text{i} d)^{1/3} d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3}}+\frac{2 d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{1/3}}\right)\right) \Big/$$

$$\left((c+\text{i} d)^{2/3}+(c+\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right)+$$

$$\left(3 c^{2/3} (c-\text{i} d)^{2/3} d \left(\frac{(c+\text{i} d)^{1/3} d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{2/3}}+\frac{2 d \operatorname{Sec}[e+f x]^2}{3 (c+d \operatorname{Tan}[e+f x])^{1/3}}\right)\right) \Big/$$

$$\left((c+\text{i} d)^{2/3}+(c+\text{i} d)^{1/3} (c+d \operatorname{Tan}[e+f x])^{1/3}+(c+d \operatorname{Tan}[e+f x])^{2/3}\right)-$$

$$\left(8 (c-\text{i} d)^{2/3} (c+\text{i} d)^{2/3} d^2 \operatorname{Sec}[e+f x]^2\right) \Big/$$

$$\left(3 c^{1/3} (c+d \operatorname{Tan}[e+f x])^{2/3} \left(1+\frac{1}{3} \left(1+\frac{2 (c+d \operatorname{Tan}[e+f x])^{1/3}}{c^{1/3}}\right)^2\right)\right)+$$

$$\left(4\,c^{2/3}\,(c+i\,d)^{2/3}\,d\,(i\,c+d)\,\mathrm{Sec}[e+f\,x]^2\right)\Big/\left((c-i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c-i\,d)^{1/3}}\right)^2\right)\right)-\left(4\,i\,c^{5/3}\,(c-i\,d)^{2/3}\,d\,\mathrm{Sec}[e+f\,x]^2\right)\Big/\left((c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}\right)^2\right)\right)+\left(4\,c^{2/3}\,(c-i\,d)^{2/3}\,d^2\,\mathrm{Sec}[e+f\,x]^2\right)\Big/\left((c+i\,d)^{1/3}\,(c+d\,\mathrm{Tan}[e+f\,x])^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\,(c+d\,\mathrm{Tan}[e+f\,x])^{1/3}}{(c+i\,d)^{1/3}}\right)^2\right)\right)\Bigg)\Bigg)$$

Problem 688: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Tan}[c+d\,x])^{5/3}\,dx$$

Optimal (type 3, 329 leaves, 12 steps):

$$-\frac{1}{4}\,(a-i\,b)^{5/3}\,x-\frac{1}{4}\,(a+i\,b)^{5/3}\,x+\frac{i\,\sqrt{3}\,(a-i\,b)^{5/3}\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-i\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}-\frac{i\,\sqrt{3}\,(a+i\,b)^{5/3}\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+i\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}+\frac{i\,(a-i\,b)^{5/3}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}-\frac{i\,(a+i\,b)^{5/3}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+\frac{3\,i\,(a-i\,b)^{5/3}\,\mathrm{Log}\left[(a-i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}-\frac{3\,i\,(a+i\,b)^{5/3}\,\mathrm{Log}\left[(a+i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}+\frac{3\,b\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}{2\,d}$$

Result (type 3, 935 leaves):

$$\frac{1}{4 d \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2}$$
$$\operatorname{Cos}[c+d x] \Bigg(6 b \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right) \left(a+b \operatorname{Tan}[c+d x]\right)^{5/3}+\frac{1}{(a-\mathrm{i} b)^{1/3} (a+\mathrm{i} b)^{1/3}}$$
$$\operatorname{Cos}[c+d x] \Bigg(2 \mathrm{i} \sqrt{3} (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^{1/3} \operatorname{ArcTan}\Big[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{(a-\mathrm{i} b)^{1/3}}}{\sqrt{3}}\Big]-$$
$$2 \mathrm{i} \sqrt{3} (a-\mathrm{i} b)^{1/3} (a+\mathrm{i} b)^2 \operatorname{ArcTan}\Big[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{(a+\mathrm{i} b)^{1/3}}}{\sqrt{3}}\Big]+$$
$$2 \mathrm{i} a^2 (a+\mathrm{i} b)^{1/3} \operatorname{Log}\Big[(a-\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]+$$
$$4 a (a+\mathrm{i} b)^{1/3} b \operatorname{Log}\Big[(a-\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]-$$
$$2 \mathrm{i} (a+\mathrm{i} b)^{1/3} b^2 \operatorname{Log}\Big[(a-\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]-$$
$$2 \mathrm{i} a^2 (a-\mathrm{i} b)^{1/3} \operatorname{Log}\Big[(a+\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]+$$
$$4 a (a-\mathrm{i} b)^{1/3} b \operatorname{Log}\Big[(a+\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]+$$
$$2 \mathrm{i} (a-\mathrm{i} b)^{1/3} b^2 \operatorname{Log}\Big[(a+\mathrm{i} b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\Big]-\mathrm{i} a^2 (a+\mathrm{i} b)^{1/3}$$
$$\operatorname{Log}\Big[(a-\mathrm{i} b)^{2/3}+(a-\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]-$$
$$2 a (a+\mathrm{i} b)^{1/3} b \operatorname{Log}\Big[(a-\mathrm{i} b)^{2/3}+(a-\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+$$
$$(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]+\mathrm{i} (a+\mathrm{i} b)^{1/3} b^2$$
$$\operatorname{Log}\Big[(a-\mathrm{i} b)^{2/3}+(a-\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]+\mathrm{i} a^2$$
$$(a-\mathrm{i} b)^{1/3} \operatorname{Log}\Big[(a+\mathrm{i} b)^{2/3}+(a+\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]-$$
$$2 a (a-\mathrm{i} b)^{1/3} b \operatorname{Log}\Big[(a+\mathrm{i} b)^{2/3}+(a+\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+$$
$$(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]-\mathrm{i} (a-\mathrm{i} b)^{1/3} b^2 \operatorname{Log}\Big[(a+\mathrm{i} b)^{2/3}+$$
$$(a+\mathrm{i} b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\Big]\Bigg) (a+b \operatorname{Tan}[c+d x])^2\Bigg)$$

Problem 689: Result more than twice size of optimal antiderivative.

$$\int (a+b \operatorname{Tan}[c+d x])^{4/3} \, dx$$

Optimal (type 3, 327 leaves, 12 steps):

$$-\frac{1}{4}\left(a-\mathrm{i}\,b\right)^{4/3}x-\frac{1}{4}\left(a+\mathrm{i}\,b\right)^{4/3}x-\frac{\mathrm{i}\,\sqrt{3}\,\left(a-\mathrm{i}\,b\right)^{4/3}\mathrm{ArcTan}\left[\frac{1+\frac{2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]}{2\,d}+$$
$$\frac{\mathrm{i}\,\sqrt{3}\,\left(a+\mathrm{i}\,b\right)^{4/3}\mathrm{ArcTan}\left[\frac{1+\frac{2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]}{2\,d}+\frac{\mathrm{i}\,\left(a-\mathrm{i}\,b\right)^{4/3}\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}-$$
$$\frac{\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^{4/3}\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+\frac{3\,\mathrm{i}\,\left(a-\mathrm{i}\,b\right)^{4/3}\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]}{4\,d}-$$
$$\frac{3\,\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^{4/3}\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]}{4\,d}+\frac{3\,b\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{d}$$

Result (type 3, 935 leaves) :

$$\frac{1}{4\,d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{2}}$$
$$\mathrm{Cos}[c+d\,x]\left(12\,b\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{4/3}+\frac{1}{\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)^{2/3}}\right.$$
$$\mathrm{Cos}[c+d\,x]\left(-2\,\mathrm{i}\,\sqrt{3}\,\left(a-\mathrm{i}\,b\right)^{2}\left(a+\mathrm{i}\,b\right)^{2/3}\mathrm{ArcTan}\left[\frac{1+\frac{2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]+\right.$$
$$2\,\mathrm{i}\,\sqrt{3}\,\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)^{2}\mathrm{ArcTan}\left[\frac{1+\frac{2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]+$$
$$2\,\mathrm{i}\,a^{2}\left(a+\mathrm{i}\,b\right)^{2/3}\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]+$$
$$4\,a\,\left(a+\mathrm{i}\,b\right)^{2/3}b\,\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]-$$
$$2\,\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^{2/3}b^{2}\,\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]-$$
$$2\,\mathrm{i}\,a^{2}\left(a-\mathrm{i}\,b\right)^{2/3}\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]+$$
$$4\,a\,\left(a-\mathrm{i}\,b\right)^{2/3}b\,\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]+$$
$$2\,\mathrm{i}\,\left(a-\mathrm{i}\,b\right)^{2/3}b^{2}\,\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\right]-\mathrm{i}\,a^{2}\left(a+\mathrm{i}\,b\right)^{2/3}$$
$$\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{2/3}+\left(a-\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-$$
$$2\,a\,\left(a+\mathrm{i}\,b\right)^{2/3}b\,\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{2/3}+\left(a-\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\right.$$
$$\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]+\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^{2/3}b^{2}$$
$$\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{2/3}+\left(a-\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]+\mathrm{i}\,a^{2}$$
$$\left(a-\mathrm{i}\,b\right)^{2/3}\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-$$
$$2\,a\,\left(a-\mathrm{i}\,b\right)^{2/3}b\,\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\right.$$
$$\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-\mathrm{i}\,\left(a-\mathrm{i}\,b\right)^{2/3}b^{2}\,\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\right.$$
$$\left.\left.\left.\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]\right)\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2}\right)$$

Problem 690: Result unnecessarily involves imaginary or complex numbers.

$$\int (a + b \operatorname{Tan}[c + d x])^{2/3} \, dx$$

Optimal (type 3, 415 leaves, 13 steps):

$$-\frac{1}{4}\left(a-\sqrt{-b^2}\right)^{2/3} x-\frac{1}{4}\left(a+\sqrt{-b^2}\right)^{2/3} x-\frac{\sqrt{3}\, b \left(a-\sqrt{-b^2}\right)^{2/3} \operatorname{ArcTan}\left[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{\left(a-\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2 \sqrt{-b^2}\, d}+\frac{\sqrt{3}\, b \left(a+\sqrt{-b^2}\right)^{2/3} \operatorname{ArcTan}\left[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{\left(a+\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2 \sqrt{-b^2}\, d}-\frac{b \left(a-\sqrt{-b^2}\right)^{2/3} \operatorname{Log}[\operatorname{Cos}[c+d x]]}{4 \sqrt{-b^2}\, d}+\frac{b \left(a+\sqrt{-b^2}\right)^{2/3} \operatorname{Log}[\operatorname{Cos}[c+d x]]}{4 \sqrt{-b^2}\, d}-\frac{3 b \left(a-\sqrt{-b^2}\right)^{2/3} \operatorname{Log}\left[\left(a-\sqrt{-b^2}\right)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\right]}{4 \sqrt{-b^2}\, d}+\frac{3 b \left(a+\sqrt{-b^2}\right)^{2/3} \operatorname{Log}\left[\left(a+\sqrt{-b^2}\right)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\right]}{4 \sqrt{-b^2}\, d}$$

Result (type 3, 333 leaves):

$$\frac{1}{4 d}\left(i \left(2 \sqrt{3}\, (a-i b)^{2/3} \operatorname{ArcTan}\left[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{(a-i b)^{1/3}}}{\sqrt{3}}\right]-2 \sqrt{3}\, (a+i b)^{2/3} \operatorname{ArcTan}\left[\frac{1+\frac{2 (a+b \operatorname{Tan}[c+d x])^{1/3}}{(a+i b)^{1/3}}}{\sqrt{3}}\right]+2 (a-i b)^{2/3} \operatorname{Log}\left[(a-i b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\right]-2 (a+i b)^{2/3} \operatorname{Log}\left[(a+i b)^{1/3}-(a+b \operatorname{Tan}[c+d x])^{1/3}\right]-(a-i b)^{2/3} \operatorname{Log}\left[(a-i b)^{2/3}+(a-i b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\right]+(a+i b)^{2/3} \operatorname{Log}\left[(a+i b)^{2/3}+(a+i b)^{1/3} (a+b \operatorname{Tan}[c+d x])^{1/3}+(a+b \operatorname{Tan}[c+d x])^{2/3}\right]\right)\right)$$

Problem 691: Result unnecessarily involves imaginary or complex numbers.

$$\int (a + b \operatorname{Tan}[c + d x])^{1/3} \, dx$$

Optimal (type 3, 415 leaves, 13 steps):

$$-\frac{1}{4}\left(a-\sqrt{-b^2}\right)^{1/3}x-\frac{1}{4}\left(a+\sqrt{-b^2}\right)^{1/3}x+$$

$$\frac{\sqrt{3}\,b\left(a-\sqrt{-b^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\,d}-\frac{\sqrt{3}\,b\left(a+\sqrt{-b^2}\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\,d}-$$

$$\frac{b\left(a-\sqrt{-b^2}\right)^{1/3}\text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\,d}+\frac{b\left(a+\sqrt{-b^2}\right)^{1/3}\text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\,d}-$$

$$\frac{3\,b\left(a-\sqrt{-b^2}\right)^{1/3}\text{Log}\left[\left(a-\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\,d}+$$

$$\frac{3\,b\left(a+\sqrt{-b^2}\right)^{1/3}\text{Log}\left[\left(a+\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\,d}$$

Result (type 3, 333 leaves):

$$-\frac{1}{4\,d}\,\mathrm{i}\left(2\sqrt{3}\,\left(a-\mathrm{i}\,b\right)^{1/3}\text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]-2\sqrt{3}\,\left(a+\mathrm{i}\,b\right)^{1/3}\right.$$

$$\text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\mathrm{i}\,b\right)^{1/3}}}{\sqrt{3}}\right]-2\left(a-\mathrm{i}\,b\right)^{1/3}\text{Log}\left[\left(a-\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]+$$

$$2\left(a+\mathrm{i}\,b\right)^{1/3}\text{Log}\left[\left(a+\mathrm{i}\,b\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]+$$

$$\left(a-\mathrm{i}\,b\right)^{1/3}\text{Log}\left[\left(a-\mathrm{i}\,b\right)^{2/3}+\left(a-\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]-$$

$$\left.\left(a+\mathrm{i}\,b\right)^{1/3}\text{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]\right)$$

Problem 692: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}\,dx$$

Optimal (type 3, 415 leaves, 11 steps):

$$-\frac{x}{4\left(a-\sqrt{-b^2}\right)^{1/3}}-\frac{x}{4\left(a+\sqrt{-b^2}\right)^{1/3}}-\frac{\sqrt{3}\ b\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{1/3}d}+$$

$$\frac{\sqrt{3}\ b\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{1/3}d}-\frac{b\,\text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{1/3}d}+\frac{b\,\text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{1/3}d}-$$

$$\frac{3\,b\,\text{Log}\left[\left(a-\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{1/3}d}+\frac{3\,b\,\text{Log}\left[\left(a+\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{1/3}d}$$

Result (type 3, 333 leaves):

$$\frac{1}{4\,d}\,i\left(\frac{2\sqrt{3}\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{(a-i\,b)^{1/3}}}{\sqrt{3}}\right]}{(a-i\,b)^{1/3}}-\frac{2\sqrt{3}\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{(a+i\,b)^{1/3}}}{\sqrt{3}}\right]}{(a+i\,b)^{1/3}}+\right.$$

$$\frac{2\,\text{Log}\left[(a-i\,b)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{(a-i\,b)^{1/3}}-\frac{2\,\text{Log}\left[(a+i\,b)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{(a+i\,b)^{1/3}}-$$

$$\frac{1}{(a-i\,b)^{1/3}}\text{Log}\left[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]+$$

$$\left.\frac{1}{(a+i\,b)^{1/3}}\text{Log}\left[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]\right)$$

Problem 693: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}}\,dx$$

Optimal (type 3, 415 leaves, 11 steps):

$$-\frac{x}{4\left(a-\sqrt{-b^2}\right)^{2/3}}-\frac{x}{4\left(a+\sqrt{-b^2}\right)^{2/3}}+\frac{\sqrt{3}\ b\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{2/3}d}-$$

$$\frac{\sqrt{3}\ b\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\sqrt{-b^2}\right)^{1/3}}}{\sqrt{3}}\right]}{2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{2/3}d}-\frac{b\ \text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{2/3}d}+\frac{b\ \text{Log}[\text{Cos}[c+d\,x]]}{4\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{2/3}d}-$$

$$\frac{3\,b\ \text{Log}\left[\left(a-\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)^{2/3}d}+\frac{3\,b\ \text{Log}\left[\left(a+\sqrt{-b^2}\right)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{4\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)^{2/3}d}$$

Result (type 3, 333 leaves) :

$$-\frac{1}{4\,d}\mathrm{i}\left(\frac{2\sqrt{3}\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{(a-\mathrm{i}\,b)^{2/3}}-\frac{2\sqrt{3}\ \text{ArcTan}\left[\frac{1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{(a+\mathrm{i}\,b)^{2/3}}-\right.$$

$$\frac{2\,\text{Log}\left[(a-\mathrm{i}\,b)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{(a-\mathrm{i}\,b)^{2/3}}+\frac{2\,\text{Log}\left[(a+\mathrm{i}\,b)^{1/3}-\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{(a+\mathrm{i}\,b)^{2/3}}+$$

$$\frac{1}{(a-\mathrm{i}\,b)^{2/3}}\text{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]-$$

$$\left.\frac{1}{(a+\mathrm{i}\,b)^{2/3}}\text{Log}\left[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right]\right)$$

Problem 694: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{4/3}}\,dx$$

Optimal (type 3, 336 leaves, 12 steps) :

$$-\frac{x}{4\,(a-i\,b)^{4/3}}-\frac{x}{4\,(a+i\,b)^{4/3}}+\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{1/3}}{(a-i\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,(a-i\,b)^{4/3}\,d}-\frac{i\,\sqrt{3}\,\text{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{1/3}}{(a+i\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,(a+i\,b)^{4/3}\,d}+$$
$$\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{4\,(a-i\,b)^{4/3}\,d}-\frac{i\,\text{Log}[\text{Cos}[c+d\,x]]}{4\,(a+i\,b)^{4/3}\,d}+\frac{3\,i\,\text{Log}\left[(a-i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\,(a-i\,b)^{4/3}\,d}-$$
$$\frac{3\,i\,\text{Log}\left[(a+i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]}{4\,(a+i\,b)^{4/3}\,d}-\frac{3\,b}{(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d\,x])^{1/3}}$$

Result (type 3, 754 leaves) :

$$\left(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\right.$$
$$\left.\left(-\frac{3\,b}{a\,(a-i\,b)\,(a+i\,b)}+\frac{3\,b^2\,\text{Sin}[c+d\,x]}{a\,(a-i\,b)\,(a+i\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\right)\Big/$$
$$\left(d\,(a+b\,\text{Tan}[c+d\,x])^{4/3}\right)+\frac{1}{4\,(a-i\,b)^{1/3}\,(a+i\,b)^{1/3}\,(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d\,x])}$$
$$\left(2\,i\,\sqrt{3}\,(a+i\,b)^{4/3}\,\text{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{1/3}}{(a-i\,b)^{1/3}}}{\sqrt{3}}\right]-2\,i\,\sqrt{3}\,(a-i\,b)^{4/3}\right.$$
$$\text{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\text{Tan}[c+d\,x])^{1/3}}{(a+i\,b)^{1/3}}}{\sqrt{3}}\right]+2\,i\,a\,(a+i\,b)^{1/3}\,\text{Log}\left[(a-i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,(a+i\,b)^{1/3}\,b\,\text{Log}\left[(a-i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,i\,a\,(a-i\,b)^{1/3}\,\text{Log}\left[(a+i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,(a-i\,b)^{1/3}\,b\,\text{Log}\left[(a+i\,b)^{1/3}-(a+b\,\text{Tan}[c+d\,x])^{1/3}\right]-$$
$$i\,a\,(a+i\,b)^{1/3}\,\text{Log}\left[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\text{Tan}[c+d\,x])^{1/3}+(a+b\,\text{Tan}[c+d\,x])^{2/3}\right]+$$
$$(a+i\,b)^{1/3}\,b\,\text{Log}\left[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\text{Tan}[c+d\,x])^{1/3}+(a+b\,\text{Tan}[c+d\,x])^{2/3}\right]+$$
$$i\,a\,(a-i\,b)^{1/3}\,\text{Log}\left[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\text{Tan}[c+d\,x])^{1/3}+(a+b\,\text{Tan}[c+d\,x])^{2/3}\right]+$$
$$\left.(a-i\,b)^{1/3}\,b\,\text{Log}\left[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\text{Tan}[c+d\,x])^{1/3}+(a+b\,\text{Tan}[c+d\,x])^{2/3}\right]\right)$$
$$\text{Sec}[c+d\,x]\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])$$

Problem 695: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Tan}[c+d\,x])^{5/3}}\,dx$$

Optimal (type 3, 338 leaves, 12 steps) :

$$-\frac{x}{4\,(a-\mathrm{i}\,b)^{5/3}}-\frac{x}{4\,(a+\mathrm{i}\,b)^{5/3}}-\frac{\mathrm{i}\,\sqrt{3}\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,(a-\mathrm{i}\,b)^{5/3}\,d}+\frac{\mathrm{i}\,\sqrt{3}\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,(a+\mathrm{i}\,b)^{5/3}\,d}+$$
$$\frac{\mathrm{i}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,(a-\mathrm{i}\,b)^{5/3}\,d}-\frac{\mathrm{i}\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,(a+\mathrm{i}\,b)^{5/3}\,d}+\frac{3\,\mathrm{i}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,(a-\mathrm{i}\,b)^{5/3}\,d}-$$
$$\frac{3\,\mathrm{i}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,(a+\mathrm{i}\,b)^{5/3}\,d}-\frac{3\,b}{2\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}$$

Result (type 3, 768 leaves):

$$\left(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right.$$
$$\left.\left(-\frac{3\,b}{2\,a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}+\frac{3\,b^2\,\mathrm{Sin}[c+d\,x]}{2\,a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\right)\Big/$$
$$\left(d\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/3}\right)+\frac{1}{4\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)^{2/3}\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$
$$\left(2\,\sqrt{3}\,(a+\mathrm{i}\,b)^{2/3}\,(-\mathrm{i}\,a+b)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+2\,\sqrt{3}\,(a-\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,a+b)\right.$$
$$\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+2\,\mathrm{i}\,a\,(a+\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,(a+\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,\mathrm{i}\,a\,(a-\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,(a-\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$\mathrm{i}\,a\,(a+\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]+$$
$$(a+\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]+$$
$$\mathrm{i}\,a\,(a-\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]+$$
$$\left.(a-\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]\right)$$
$$\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])$$

Problem 696: Unable to integrate problem.

$$\int (d\,\mathrm{Tan}[e+f\,x])^n\,(a+b\,\mathrm{Tan}[e+f\,x])^4\,dx$$

Optimal (type 5, 261 leaves, 8 steps):

$$-\frac{b^2\left(b^2(3+n)-a^2(17+5n)\right)(d\,\mathrm{Tan}[e+fx])^{1+n}}{d\,f\,(1+n)\,(3+n)}+\frac{1}{d\,f\,(1+n)}$$

$$\left(a^4-6a^2b^2+b^4\right)\mathrm{Hypergeometric2F1}\left[1,\frac{1+n}{2},\frac{3+n}{2},-\mathrm{Tan}[e+fx]^2\right](d\,\mathrm{Tan}[e+fx])^{1+n}+$$

$$\frac{2ab^3\,(4+n)\,\mathrm{Tan}[e+fx]\,(d\,\mathrm{Tan}[e+fx])^{1+n}}{d\,f\,(2+n)\,(3+n)}+\frac{1}{d^2f\,(2+n)}$$

$$4ab\left(a^2-b^2\right)\mathrm{Hypergeometric2F1}\left[1,\frac{2+n}{2},\frac{4+n}{2},-\mathrm{Tan}[e+fx]^2\right](d\,\mathrm{Tan}[e+fx])^{2+n}+$$

$$\frac{b^2\,(d\,\mathrm{Tan}[e+fx])^{1+n}\,(a+b\,\mathrm{Tan}[e+fx])^2}{d\,f\,(3+n)}$$

Result (type 8, 25 leaves):

$$\int(d\,\mathrm{Tan}[e+fx])^n\,(a+b\,\mathrm{Tan}[e+fx])^4\,dx$$

Problem 697: Result more than twice size of optimal antiderivative.

$$\int(d\,\mathrm{Tan}[e+fx])^n\,(a+b\,\mathrm{Tan}[e+fx])^3\,dx$$

Optimal (type 5, 198 leaves, 7 steps):

$$\frac{ab^2\,(5+2n)\,(d\,\mathrm{Tan}[e+fx])^{1+n}}{d\,f\,(1+n)\,(2+n)}+\frac{1}{d\,f\,(1+n)}$$

$$a\left(a^2-3b^2\right)\mathrm{Hypergeometric2F1}\left[1,\frac{1+n}{2},\frac{3+n}{2},-\mathrm{Tan}[e+fx]^2\right](d\,\mathrm{Tan}[e+fx])^{1+n}+$$

$$\frac{1}{d^2f\,(2+n)}b\left(3a^2-b^2\right)\mathrm{Hypergeometric2F1}\left[1,\frac{2+n}{2},\frac{4+n}{2},-\mathrm{Tan}[e+fx]^2\right](d\,\mathrm{Tan}[e+fx])^{2+n}+$$

$$\frac{b^2\,(d\,\mathrm{Tan}[e+fx])^{1+n}\,(a+b\,\mathrm{Tan}[e+fx])}{d\,f\,(2+n)}$$

Result (type 5, 481 leaves):

$$\left(3\,a^2\,b\,\text{Cos}[e+f\,x]^3\,\text{Hypergeometric2F1}\left[-\frac{n}{2},\,-\frac{n}{2},\,\frac{2-n}{2},\,\text{Cos}[e+f\,x]^2\right]\,\left(\text{Sin}[e+f\,x]^2\right)^{1+\frac{1}{2}(-2-n)}\right.$$
$$\left.\left(d\,\text{Tan}[e+f\,x]\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,n\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\right)-$$
$$\left(b^3\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2}\,(-2-n),\,\frac{1}{2}\,(-2-n),\,-\frac{n}{2},\,\text{Cos}[e+f\,x]^2\right]\right.$$
$$\left.\text{Sin}[e+f\,x]^4\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1}{2}(-4-n)}\,\left(d\,\text{Tan}[e+f\,x]\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)\Big/$$
$$\left(f\,(-2-n)\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\right)-$$
$$\left(3\,a\,b^2\,\text{Cos}[e+f\,x]^2\,\text{Hypergeometric2F1}\left[\frac{1}{2}\,(-1-n),\,\frac{1}{2}\,(-1-n),\,\frac{1-n}{2},\,\text{Cos}[e+f\,x]^2\right]\right.$$
$$\left.\text{Sin}[e+f\,x]^3\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1}{2}(-3-n)}\,\left(d\,\text{Tan}[e+f\,x]\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)\Big/$$
$$\left(f\,(-1-n)\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\right)-$$
$$\left(a^3\,\text{Cos}[e+f\,x]^4\,\text{Hypergeometric2F1}\left[\frac{1-n}{2},\,\frac{1-n}{2},\,\frac{3-n}{2},\,\text{Cos}[e+f\,x]^2\right]\right.$$
$$\left.\text{Sin}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1}{2}(-1-n)}\,\left(d\,\text{Tan}[e+f\,x]\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)\Big/$$
$$\left(f\,(1-n)\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\right)$$

Problem 701: Unable to integrate problem.

$$\int\frac{\left(d\,\text{Tan}[e+f\,x]\right)^n}{\left(a+b\,\text{Tan}[e+f\,x]\right)^2}\,dx$$

Optimal (type 5, 252 leaves, 9 steps):

$$\left(\left(a^2-b^2\right)\,\text{Hypergeometric2F1}\left[1,\,\frac{1+n}{2},\,\frac{3+n}{2},\,-\text{Tan}[e+f\,x]^2\right]\,\left(d\,\text{Tan}[e+f\,x]\right)^{1+n}\right)\Big/$$
$$\left(\left(a^2+b^2\right)^2\,d\,f\,(1+n)\right)+$$
$$\left(b^2\,\left(a^2\,(2-n)-b^2\,n\right)\,\text{Hypergeometric2F1}\left[1,\,1+n,\,2+n,\,-\frac{b\,\text{Tan}[e+f\,x]}{a}\right]\,\left(d\,\text{Tan}[e+f\,x]\right)^{1+n}\right)\Big/$$
$$\left(a^2\,\left(a^2+b^2\right)^2\,d\,f\,(1+n)\right)-$$
$$\left(2\,a\,b\,\text{Hypergeometric2F1}\left[1,\,\frac{2+n}{2},\,\frac{4+n}{2},\,-\text{Tan}[e+f\,x]^2\right]\,\left(d\,\text{Tan}[e+f\,x]\right)^{2+n}\right)\Big/$$
$$\left(\left(a^2+b^2\right)^2\,d^2\,f\,(2+n)\right)+\frac{b^2\,\left(d\,\text{Tan}[e+f\,x]\right)^{1+n}}{a\,\left(a^2+b^2\right)\,d\,f\,\left(a+b\,\text{Tan}[e+f\,x]\right)}$$

Result (type 8, 25 leaves):

$$\int\frac{\left(d\,\text{Tan}[e+f\,x]\right)^n}{\left(a+b\,\text{Tan}[e+f\,x]\right)^2}\,dx$$

Problem 702: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^m \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2} \,dx$$

Optimal (type 6, 175 leaves, 7 steps):

$$\left(a\,\text{AppellF1}\left[1+m,-\frac{3}{2},1,2+m,-\frac{b\,\text{Tan}[c+d\,x]}{a},-i\,\text{Tan}[c+d\,x]\right]\right.$$
$$\left.\text{Tan}[c+d\,x]^{1+m}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(2\,d\,(1+m)\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)+$$
$$\left(a\,\text{AppellF1}\left[1+m,-\frac{3}{2},1,2+m,-\frac{b\,\text{Tan}[c+d\,x]}{a},i\,\text{Tan}[c+d\,x]\right]\,\text{Tan}[c+d\,x]^{1+m}\right.$$
$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(2\,d\,(1+m)\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)$$

Result (type 8, 25 leaves):

$$\int \text{Tan}[c+d\,x]^m \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2} \,dx$$

Problem 703: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^m \sqrt{a+b\,\text{Tan}[c+d\,x]} \,dx$$

Optimal (type 6, 173 leaves, 7 steps):

$$\left(\text{AppellF1}\left[1+m,-\frac{1}{2},1,2+m,-\frac{b\,\text{Tan}[c+d\,x]}{a},-i\,\text{Tan}[c+d\,x]\right]\right.$$
$$\left.\text{Tan}[c+d\,x]^{1+m}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(2\,d\,(1+m)\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)+$$
$$\left(\text{AppellF1}\left[1+m,-\frac{1}{2},1,2+m,-\frac{b\,\text{Tan}[c+d\,x]}{a},i\,\text{Tan}[c+d\,x]\right]\,\text{Tan}[c+d\,x]^{1+m}\right.$$
$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(2\,d\,(1+m)\sqrt{1+\frac{b\,\text{Tan}[c+d\,x]}{a}}\right)$$

Result (type 8, 25 leaves):

$$\int \text{Tan}[c+d\,x]^m \sqrt{a+b\,\text{Tan}[c+d\,x]} \,dx$$

Problem 704: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Optimal (type 6, 173 leaves, 7 steps):

$$\left(\text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right) + \left(\text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Tan}[c+d x]^m}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Problem 705: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m}{(a+b \text{Tan}[c+d x])^{3/2}} \, dx$$

Optimal (type 6, 179 leaves, 7 steps):

$$\left(\text{AppellF1}\left[1+m, \frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right) + \left(\text{AppellF1}\left[1+m, \frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Tan}[c+d x]^m}{(a+b \text{Tan}[c+d x])^{3/2}} \, dx$$

Problem 706: Unable to integrate problem.

$$\int (d \text{Tan}[e+f x])^n (a+b \text{Tan}[e+f x])^m \, dx$$

Optimal (type 6, 179 leaves, 7 steps):

$$\frac{1}{2 d f (1+n)} \text{AppellF1}\left[1+n, -m, 1, 2+n, -\frac{b \text{Tan}[e+f x]}{a}, -i \text{Tan}[e+f x]\right] (d \text{Tan}[e+f x])^{1+n} (a+b \text{Tan}[e+f x])^m \left(1+\frac{b \text{Tan}[e+f x]}{a}\right)^{-m} + \frac{1}{2 d f (1+n)} \text{AppellF1}\left[1+n, -m, 1, 2+n, -\frac{b \text{Tan}[e+f x]}{a}, i \text{Tan}[e+f x]\right] (d \text{Tan}[e+f x])^{1+n} (a+b \text{Tan}[e+f x])^m \left(1+\frac{b \text{Tan}[e+f x]}{a}\right)^{-m}$$

Result (type 8, 25 leaves):

$$\int (d \text{Tan}[e+f x])^n (a+b \text{Tan}[e+f x])^m \, dx$$

Problem 707: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Tan}[c+d x]^4 (a+b \text{Tan}[c+d x])^n \, dx$$

Optimal (type 5, 297 leaves, 8 steps):

$$\frac{\left(2 a^2-b^2 (2+n) (3+n)\right) (a+b \text{Tan}[c+d x])^{1+n}}{b^3 d (1+n) (2+n) (3+n)} - \left(\sqrt{-b^2} \text{ Hypergeometric2F1}\left[1, 1+n, 2+n, \frac{a+b \text{Tan}[c+d x]}{a-\sqrt{-b^2}}\right] (a+b \text{Tan}[c+d x])^{1+n}\right) \Big/ \left(2 b \left(a-\sqrt{-b^2}\right) d (1+n)\right) + \left(\sqrt{-b^2} \text{ Hypergeometric2F1}\left[1, 1+n, 2+n, \frac{a+b \text{Tan}[c+d x]}{a+\sqrt{-b^2}}\right] (a+b \text{Tan}[c+d x])^{1+n}\right) \Big/ \left(2 b \left(a+\sqrt{-b^2}\right) d (1+n)\right) - \frac{2 a \text{Tan}[c+d x] (a+b \text{Tan}[c+d x])^{1+n}}{b^2 d (2+n) (3+n)} + \frac{\text{Tan}[c+d x]^2 (a+b \text{Tan}[c+d x])^{1+n}}{b d (3+n)}$$

Result (type 5, 369 leaves):

$$\frac{1}{2\,b^3\,d}\left(\mathrm{Sec}[c+d\,x]^2\right)^{-n/2}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^n\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{-n}$$
$$\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Tan}[c+d\,x]^2}}\right)^n\left(1+\mathrm{Tan}[c+d\,x]^2\right)^{n/2}\left(-\frac{2\,b^2\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}{1+n}-\frac{1}{n}\right.$$
$$i\,b^3\left(\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\left(-i+\mathrm{Tan}[c+d\,x]\right)}\right)^{-n}-\right.$$
$$\left.\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}\right)+$$
$$\left(2\left(-2\,a^2\,b\,n\,\mathrm{Tan}[c+d\,x]+a\,b^2\,n\,(1+n)\,\mathrm{Tan}[c+d\,x]^2+b^3\left(2+3\,n+n^2\right)\mathrm{Tan}[c+d\,x]^3+\right.\right.$$
$$\left.\left.\left.a^3\left(2-2\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}\right)\right)\right)\Big/\left(6+11\,n+6\,n^2+n^3\right)\right)$$

Problem 709: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Tan}[c+d\,x]^2\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^n\,dx$$

Optimal (type 5, 193 leaves, 6 steps):

$$\frac{\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1+n}}{b\,d\,(1+n)}-$$
$$\left(b\,\mathrm{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\mathrm{Tan}[c+d\,x]}{a-\sqrt{-b^2}}\right]\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1+n}\right)\Big/$$
$$\left(2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)d\,(1+n)\right)+$$
$$\left(b\,\mathrm{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\mathrm{Tan}[c+d\,x]}{a+\sqrt{-b^2}}\right]\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1+n}\right)\Big/$$
$$\left(2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)d\,(1+n)\right)$$

Result (type 5, 191 leaves):

$$\frac{1}{2\,b\,d}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^n\left(\frac{2\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}{1+n}+\frac{1}{n}\right.$$
$$i\,b\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\left(-i+\mathrm{Tan}[c+d\,x]\right)}\right)^{-n}-$$
$$\left.\frac{1}{n}\,i\,b\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}\right)$$

Problem 711: Result unnecessarily involves imaginary or complex numbers.

$$\int \left(a+b\,\mathrm{Tan}[c+d\,x]\right)^n\,dx$$

Optimal (type 5, 167 leaves, 5 steps):

$$\left(b\,\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\text{Tan}[c+d\,x]}{a-\sqrt{-b^2}}\right](a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)d\,(1+n)\right)-\left(b\,\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\text{Tan}[c+d\,x]}{a+\sqrt{-b^2}}\right](a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)d\,(1+n)\right)$$

Result (type 5, 161 leaves):

$$-\frac{1}{2\,d\,n}\,\mathbb{i}\,(a+b\,\text{Tan}[c+d\,x])^n\left(\text{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a+\mathbb{i}\,b}{b\,(-\mathbb{i}+\text{Tan}[c+d\,x])}\right]\left(\frac{a+b\,\text{Tan}[c+d\,x]}{b\,(-\mathbb{i}+\text{Tan}[c+d\,x])}\right)^{-n}-\text{Hypergeometric2F1}\left[-n,-n,1-n,\frac{-a+\mathbb{i}\,b}{b\,(\mathbb{i}+\text{Tan}[c+d\,x])}\right]\left(\frac{a+b\,\text{Tan}[c+d\,x]}{b\,(\mathbb{i}+\text{Tan}[c+d\,x])}\right)^{-n}\right)$$

Problem 713: Result unnecessarily involves imaginary or complex numbers.

$$\int\text{Cot}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^n\,dx$$

Optimal (type 5, 245 leaves, 10 steps):

$$-\frac{\text{Cot}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{a\,d}-\left(b\,\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\text{Tan}[c+d\,x]}{a-\sqrt{-b^2}}\right](a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)d\,(1+n)\right)+\left(b\,\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\text{Tan}[c+d\,x]}{a+\sqrt{-b^2}}\right](a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)d\,(1+n)\right)-\frac{1}{a^2\,d\,(1+n)}b\,n\,\text{Hypergeometric2F1}\left[1,1+n,2+n,1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right](a+b\,\text{Tan}[c+d\,x])^{1+n}$$

Result (type 5, 222 leaves):

$$\frac{1}{2\,d}\left(a+b\,\text{Tan}[c+d\,x]\right)^n$$
$$\left(\frac{1}{-1+n}2\,\text{Cot}[c+d\,x]\left(1+\frac{a\,\text{Cot}[c+d\,x]}{b}\right)^{-n}\text{Hypergeometric2F1}\left[1-n,\,-n,\,2-n,\,-\frac{a\,\text{Cot}[c+d\,x]}{b}\right]+\right.$$
$$\frac{1}{n}\dot{\imath}\left(\text{Hypergeometric2F1}\left[-n,\,-n,\,1-n,\,\frac{a+\dot{\imath}\,b}{\dot{\imath}\,b-b\,\text{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\text{Tan}[c+d\,x]}{b\left(-\dot{\imath}+\text{Tan}[c+d\,x]\right)}\right)^{-n}-\right.$$
$$\left.\left.\text{Hypergeometric2F1}\left[-n,\,-n,\,1-n,\,-\frac{a-\dot{\imath}\,b}{\dot{\imath}\,b+b\,\text{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\text{Tan}[c+d\,x]}{\dot{\imath}\,b+b\,\text{Tan}[c+d\,x]}\right)^{-n}\right)\right)$$

Problem 715: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Optimal (type 6, 159 leaves, 9 steps):

$$\frac{1}{5\,d}\text{AppellF1}\left[\frac{5}{2},\,1,\,-n,\,\frac{7}{2},\,-\dot{\imath}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\text{Tan}[c+d\,x]^{5/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n$$
$$\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{5\,d}\text{AppellF1}\left[\frac{5}{2},\,1,\,-n,\,\frac{7}{2},\,\dot{\imath}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$\text{Tan}[c+d\,x]^{5/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves):

$$\int \text{Tan}[c+d\,x]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Problem 716: Unable to integrate problem.

$$\int \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Optimal (type 6, 159 leaves, 9 steps):

$$\frac{1}{3\,d}\text{AppellF1}\left[\frac{3}{2},\,1,\,-n,\,\frac{5}{2},\,-\dot{\imath}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\text{Tan}[c+d\,x]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n$$
$$\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{3\,d}\text{AppellF1}\left[\frac{3}{2},\,1,\,-n,\,\frac{5}{2},\,\dot{\imath}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$\text{Tan}[c+d\,x]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves):

$$\int \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Problem 717: Unable to integrate problem.

$$\int \frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 6, 153 leaves, 9 steps):

$$\frac{1}{d}\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n \left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{d}\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right] \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves):

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Problem 718: Unable to integrate problem.

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 6, 155 leaves, 9 steps):

$$-\frac{1}{d\sqrt{\text{Tan}[c+d\,x]}}\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right] \left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}-\frac{1}{d\sqrt{\text{Tan}[c+d\,x]}} \text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right] \left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves):

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Problem 755: Unable to integrate problem.

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 144 leaves, 8 steps):

$$-\frac{1}{d}2\,(-1)^{3/4}\sqrt{a}\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\,- \frac{1}{d}(1+i)\sqrt{a}\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}$$

Result (type 8, 30 leaves):

$$\int \frac{\sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{\sqrt{\operatorname{Cot}[c + d x]}} \, dx$$

Problem 766: Result more than twice size of optimal antiderivative.

$$\int \sqrt{\operatorname{Cot}[c + d x]} \, (a + i\, a \operatorname{Tan}[c + d x])^{5/2} \, dx$$

Optimal (type 3, 179 leaves, 9 steps):

$$\frac{1}{d} 5\, (-1)^{1/4} a^{5/2} \operatorname{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\operatorname{Tan}[c + d x]}}{\sqrt{a + i\, a \operatorname{Tan}[c + d x]}}\right] \sqrt{\operatorname{Cot}[c + d x]} \sqrt{\operatorname{Tan}[c + d x]} + \frac{1}{d} (4 - 4\, i)\, a^{5/2} \operatorname{ArcTanh}\left[\frac{(1 + i) \sqrt{a} \sqrt{\operatorname{Tan}[c + d x]}}{\sqrt{a + i\, a \operatorname{Tan}[c + d x]}}\right] \sqrt{\operatorname{Cot}[c + d x]} \sqrt{\operatorname{Tan}[c + d x]} - \frac{a^2 \sqrt{a + i\, a \operatorname{Tan}[c + d x]}}{d \sqrt{\operatorname{Cot}[c + d x]}}$$

Result (type 3, 413 leaves):

$$-\left(\left(i\, e^{-i (3 c + d x)} \sqrt{e^{i d x}} \sqrt{-1 + e^{2 i (c + d x)}} \sqrt{\frac{e^{i (c + d x)}}{1 + e^{2 i (c + d x)}}} \sqrt{\frac{i \left(1 + e^{2 i (c + d x)}\right)}{-1 + e^{2 i (c + d x)}}} \left(32 \operatorname{Log}\left[e^{i (c + d x)} + \sqrt{-1 + e^{2 i (c + d x)}}\right] + 5 \sqrt{2} \left(-\operatorname{Log}\left[1 - 3 e^{2 i (c + d x)} - 2 \sqrt{2}\, e^{i (c + d x)} \sqrt{-1 + e^{2 i (c + d x)}}\right] + \operatorname{Log}\left[1 - 3 e^{2 i (c + d x)} + 2 \sqrt{2}\, e^{i (c + d x)} \sqrt{-1 + e^{2 i (c + d x)}}\right]\right)\right) (a + i\, a \operatorname{Tan}[c + d x])^{5/2}\right) \Big/ \left(4 \sqrt{2}\, d \operatorname{Sec}[c + d x]^{5/2} (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^{5/2}\right)\right) + \left(\operatorname{Cos}[c + d x]^2 \sqrt{\operatorname{Cot}[c + d x]} \left(-\operatorname{Sec}[c] \operatorname{Sec}[c + d x] (\operatorname{Cos}[2 c] - i \operatorname{Sin}[2 c]) \operatorname{Sin}[d x] + (-\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]) \operatorname{Tan}[c]\right) (a + i\, a \operatorname{Tan}[c + d x])^{5/2}\right) \Big/ \left(d\, (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^2\right)$$

Problem 767: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a \operatorname{Tan}[c + d x])^{5/2}}{\sqrt{\operatorname{Cot}[c + d x]}} \, dx$$

Optimal (type 3, 222 leaves, 10 steps):

$$-\frac{1}{4\,d}23\,(-1)^{3/4}\,a^{5/2}\,\text{ArcTan}\Big[\frac{(-1)^{3/4}\,\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\Big]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\,-$$
$$\frac{1}{d}(4+4\,i)\,a^{5/2}\,\text{ArcTanh}\Big[\frac{(1+i)\,\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\Big]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\,-$$
$$\frac{a^2\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{2\,d\,\text{Cot}[c+d\,x]^{3/2}}+\frac{9\,i\,a^2\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{4\,d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 3, 486 leaves):

$$\Big(\text{Cos}[c+d\,x]^2\,\sqrt{\text{Cot}[c+d\,x]}\,\Big(\text{Sec}[c]\,(2\,\text{Cos}[c]+9\,i\,\text{Sin}[c])\,\Big(\frac{1}{4}\,\text{Cos}[2\,c]-\frac{1}{4}\,i\,\text{Sin}[2\,c]\Big)+$$
$$\text{Sec}[c+d\,x]^2\,\Big(-\frac{1}{2}\,\text{Cos}[2\,c]+\frac{1}{2}\,i\,\text{Sin}[2\,c]\Big)+$$
$$i\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\Big(\frac{9}{4}\,\text{Cos}[2\,c]-\frac{9}{4}\,i\,\text{Sin}[2\,c]\Big)\,\text{Sin}[d\,x]\Big)\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\Big)\Big/$$
$$\Big(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\Big)-\frac{1}{8\,\sqrt{2}\,d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2}$$
$$\text{Cos}[c+d\,x]^2\,\sqrt{\text{Cot}[c+d\,x]}\,\Bigg(23\,\sqrt{2}\,\text{Log}\Big[-\frac{2\,e^{\frac{7\,i\,c}{2}}\,\big(i\,\sqrt{2}+\sqrt{2}\,e^{i\,(c+d\,x)}-2\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\big)}{23\,(-i+e^{i\,(c+d\,x)})}\Big]-$$
$$23\,\sqrt{2}\,\text{Log}\Big[-\frac{2\,e^{\frac{7\,i\,c}{2}}\,\big(-i\,\sqrt{2}+\sqrt{2}\,e^{i\,(c+d\,x)}+2\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\big)}{23\,(i+e^{i\,(c+d\,x)})}\Big]+64\,\text{Log}\Big[(\text{Cos}[c]-i\,\text{Sin}[c])$$
$$\Big(\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]+\sqrt{-1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]}\Big)\Big]\Bigg)$$
$$\sqrt{i\,(i+\text{Cot}[c+d\,x])\,\text{Sin}[c+d\,x]^2}\,(\text{Cos}[3\,c+d\,x]-i\,\text{Sin}[3\,c+d\,x])$$
$$(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}$$

Problem 788: Unable to integrate problem.

$$\int(d\,\text{Cot}[e+f\,x])^n\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 5, 139 leaves, 6 steps):

$$\frac{i\,a^3\,d^2\,(1-2\,n)\,(d\,\text{Cot}[e+f\,x])^{-2+n}}{f\,(1-n)\,(2-n)}+\frac{d^2\,(d\,\text{Cot}[e+f\,x])^{-2+n}\,(i\,a^3+a^3\,\text{Cot}[e+f\,x])}{f\,(1-n)}-\frac{1}{f\,(2-n)}$$
$$4\,i\,a^3\,d^2\,(d\,\text{Cot}[e+f\,x])^{-2+n}\,\text{Hypergeometric2F1}[1,-2+n,-1+n,-i\,\text{Cot}[e+f\,x]]$$

Result (type 8, 28 leaves):

$$\int(d\,\text{Cot}[e+f\,x])^n\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,dx$$

Problem 789: Unable to integrate problem.

$$\int (d\,\text{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^2\,dx$$

Optimal (type 5, 72 leaves, 5 steps):

$$\frac{a^2\,d\,(d\,\text{Cot}[e+f\,x])^{-1+n}}{f\,(1-n)}-\frac{1}{f\,(1-n)}2\,a^2\,d\,(d\,\text{Cot}[e+f\,x])^{-1+n}\,\text{Hypergeometric2F1}[1,\,-1+n,\,n,\,-\mathrm{i}\,\text{Cot}[e+f\,x]]$$

Result (type 8, 28 leaves):

$$\int (d\,\text{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^2\,dx$$

Problem 790: Unable to integrate problem.

$$\int (d\,\text{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])\,dx$$

Optimal (type 5, 37 leaves, 3 steps):

$$-\frac{\mathrm{i}\,a\,(d\,\text{Cot}[e+f\,x])^n\,\text{Hypergeometric2F1}[1,\,n,\,1+n,\,-\mathrm{i}\,\text{Cot}[e+f\,x]]}{f\,n}$$

Result (type 8, 26 leaves):

$$\int (d\,\text{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])\,dx$$

Problem 791: Unable to integrate problem.

$$\int \frac{(d\,\text{Cot}[e+f\,x])^n}{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 5, 157 leaves, 7 steps):

$$-\frac{(d\,\text{Cot}[e+f\,x])^{2+n}}{2\,d^2\,f\,(\mathrm{i}\,a+a\,\text{Cot}[e+f\,x])}-\frac{1}{2\,a\,d^2\,f\,(2+n)}\mathrm{i}\,n\,(d\,\text{Cot}[e+f\,x])^{2+n}\,\text{Hypergeometric2F1}\left[1,\,\frac{2+n}{2},\,\frac{4+n}{2},\,-\text{Cot}[e+f\,x]^2\right]+\frac{1}{2\,a\,d^3\,f\,(3+n)}(1+n)\,(d\,\text{Cot}[e+f\,x])^{3+n}\,\text{Hypergeometric2F1}\left[1,\,\frac{3+n}{2},\,\frac{5+n}{2},\,-\text{Cot}[e+f\,x]^2\right]$$

Result (type 8, 28 leaves):

$$\int \frac{(d\,\text{Cot}[e+f\,x])^n}{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Problem 792: Unable to integrate problem.

$$\int \frac{(d\,\mathrm{Cot}[e+f\,x])^n}{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 5, 202 leaves, 8 steps):

$$-\frac{\mathrm{i}\,n\,(d\,\mathrm{Cot}[e+f\,x])^{3+n}}{4\,a^2\,d^3\,f\,(\mathrm{i}+\mathrm{Cot}[e+f\,x])}-\frac{(d\,\mathrm{Cot}[e+f\,x])^{3+n}}{4\,d^3\,f\,(\mathrm{i}\,a+a\,\mathrm{Cot}[e+f\,x])^2}+\frac{1}{4\,a^2\,d^3\,f\,(3+n)}$$
$$(1+n)^2\,(d\,\mathrm{Cot}[e+f\,x])^{3+n}\,\mathrm{Hypergeometric2F1}\left[1,\frac{3+n}{2},\frac{5+n}{2},-\mathrm{Cot}[e+f\,x]^2\right]+\frac{1}{4\,a^2\,d^4\,f\,(4+n)}$$
$$\mathrm{i}\,n\,(2+n)\,(d\,\mathrm{Cot}[e+f\,x])^{4+n}\,\mathrm{Hypergeometric2F1}\left[1,\frac{4+n}{2},\frac{6+n}{2},-\mathrm{Cot}[e+f\,x]^2\right]$$

Result (type 8, 28 leaves):

$$\int \frac{(d\,\mathrm{Cot}[e+f\,x])^n}{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Problem 793: Unable to integrate problem.

$$\int (d\,\mathrm{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m\,dx$$

Optimal (type 6, 95 leaves, 4 steps):

$$\frac{1}{f\,(1-n)}\mathrm{AppellF1}[1-n,1-m,1,2-n,-\mathrm{i}\,\mathrm{Tan}[e+f\,x],\mathrm{i}\,\mathrm{Tan}[e+f\,x]]$$
$$(d\,\mathrm{Cot}[e+f\,x])^n\,(1+\mathrm{i}\,\mathrm{Tan}[e+f\,x])^{-m}\,\mathrm{Tan}[e+f\,x]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m$$

Result (type 8, 28 leaves):

$$\int (d\,\mathrm{Cot}[e+f\,x])^n\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m\,dx$$

Problem 794: Unable to integrate problem.

$$\int \mathrm{Cot}[c+d\,x]^{3/2}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n\,dx$$

Optimal (type 6, 79 leaves, 5 steps):

$$-\frac{1}{d}2\,\mathrm{AppellF1}\left[-\frac{1}{2},1-n,1,\frac{1}{2},-\mathrm{i}\,\mathrm{Tan}[c+d\,x],\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]$$
$$\sqrt{\mathrm{Cot}[c+d\,x]}\,(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x])^{-n}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n$$

Result (type 8, 28 leaves):

$$\int \mathrm{Cot}[c+d\,x]^{3/2}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n\,dx$$

Problem 795: Unable to integrate problem.

$$\int \sqrt{\text{Cot}[c+d x]}\ (a+\text{i}\ a\ \text{Tan}[c+d x])^n\, dx$$

Optimal (type 6, 79 leaves, 5 steps):

$$\frac{1}{d \sqrt{\text{Cot}[c+d x]}} 2\ \text{AppellF1}\left[\frac{1}{2}, 1-n, 1, \frac{3}{2}, -\text{i}\ \text{Tan}[c+d x], \text{i}\ \text{Tan}[c+d x]\right] (1+\text{i}\ \text{Tan}[c+d x])^{-n} (a+\text{i}\ a\ \text{Tan}[c+d x])^n$$

Result (type 8, 28 leaves):

$$\int \sqrt{\text{Cot}[c+d x]}\ (a+\text{i}\ a\ \text{Tan}[c+d x])^n\, dx$$

Problem 796: Unable to integrate problem.

$$\int \frac{(a+\text{i}\ a\ \text{Tan}[c+d x])^n}{\sqrt{\text{Cot}[c+d x]}}\, dx$$

Optimal (type 6, 81 leaves, 5 steps):

$$\left(2\ \text{AppellF1}\left[\frac{3}{2}, 1-n, 1, \frac{5}{2}, -\text{i}\ \text{Tan}[c+d x], \text{i}\ \text{Tan}[c+d x]\right] (1+\text{i}\ \text{Tan}[c+d x])^{-n} (a+\text{i}\ a\ \text{Tan}[c+d x])^n\right) \Big/ \left(3\ d\ \text{Cot}[c+d x]^{3/2}\right)$$

Result (type 8, 28 leaves):

$$\int \frac{(a+\text{i}\ a\ \text{Tan}[c+d x])^n}{\sqrt{\text{Cot}[c+d x]}}\, dx$$

Problem 797: Unable to integrate problem.

$$\int \frac{(a+\text{i}\ a\ \text{Tan}[c+d x])^n}{\text{Cot}[c+d x]^{3/2}}\, dx$$

Optimal (type 6, 81 leaves, 5 steps):

$$\left(2\ \text{AppellF1}\left[\frac{5}{2}, 1-n, 1, \frac{7}{2}, -\text{i}\ \text{Tan}[c+d x], \text{i}\ \text{Tan}[c+d x]\right] (1+\text{i}\ \text{Tan}[c+d x])^{-n} (a+\text{i}\ a\ \text{Tan}[c+d x])^n\right) \Big/ \left(5\ d\ \text{Cot}[c+d x]^{5/2}\right)$$

Result (type 8, 28 leaves):

$$\int \frac{(a+\text{i}\ a\ \text{Tan}[c+d x])^n}{\text{Cot}[c+d x]^{3/2}}\, dx$$

Problem 826: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d\,x]^{5/2}}{(a+b\,\text{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 398 leaves, 18 steps):

$$-\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-\frac{b^{7/2}\,\left(9\,a^2+5\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{a^{7/2}\,\left(a^2+b^2\right)^2\,d}+\frac{b\,\left(4\,a^2+5\,b^2\right)\,\sqrt{\text{Cot}[c+d\,x]}}{a^3\,\left(a^2+b^2\right)\,d}-\frac{\left(2\,a^2+5\,b^2\right)\,\text{Cot}[c+d\,x]^{3/2}}{3\,a^2\,\left(a^2+b^2\right)\,d}+\frac{b^2\,\text{Cot}[c+d\,x]^{5/2}}{a\,\left(a^2+b^2\right)\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)}+\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}$$

Result (type 3, 771 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\right.$$
$$\left.\left(\frac{4 b}{a^3}-\frac{2\,\text{Cot}[c+d x]}{3 a^2}+\frac{b^4\,\text{Sin}[c+d x]}{a^3\,(a-i b)\,(a+i b)\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^2\right)-\frac{1}{2 a^3\,(a-i b)\,(a+i b)\,d\,(b+a\,\text{Cot}[c+d x])^2}$$
$$\text{Csc}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2$$
$$\left(-\left(\left(2\,(a^4-4 a^2 b^2-5 b^4)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\right.\right.\right.$$
$$\left.\left.\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-$$
$$\left(a^{7/2}\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]\right)\Big/$$
$$\left(2\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)+$$
$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}$$
$$a^3\,b\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)$$

Problem 827: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d x]^{3/2}}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 357 leaves, 17 steps):

$$-\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+$$
$$\frac{b^{5/2}\,\left(7\,a^2+3\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{a^{5/2}\,\left(a^2+b^2\right)^2\,d}-\frac{\left(2\,a^2+3\,b^2\right)\,\sqrt{\text{Cot}[c+d\,x]}}{a^2\,\left(a^2+b^2\right)\,d}+$$
$$\frac{b^2\,\text{Cot}[c+d\,x]^{3/2}}{a\,\left(a^2+b^2\right)\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)}-\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+$$
$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}$$

Result (type 3, 472 leaves):

$$\frac{1}{2\,d}\left(\frac{1}{2\,a^{5/2}\,\left(a^2+b^2\right)^2}\left(-2\,\sqrt{2}\,a^{5/2}\,\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,\sqrt{2}\,a^{5/2}\right.\right.$$
$$\left(a^2+2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+28\,a^2\,b^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+$$
$$12\,b^{9/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]-\sqrt{2}\,a^{9/2}\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]+$$
$$2\,\sqrt{2}\,a^{7/2}\,b\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]+$$
$$\sqrt{2}\,a^{5/2}\,b^2\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]+$$
$$\sqrt{2}\,a^{9/2}\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$
$$2\,\sqrt{2}\,a^{7/2}\,b\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$
$$\left.\sqrt{2}\,a^{5/2}\,b^2\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)-$$
$$\left.\frac{2\,\sqrt{\text{Cot}[c+d\,x]}\,\left(2+\frac{b^3\,\text{Sin}[c+d\,x]}{(a-i\,b)\,(a+i\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)}{a^2}\right)$$

Problem 832: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{7/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 357 leaves, 17 steps):

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\,\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{\left(a^2-2\,a\,b-b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\,\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+\frac{a^{5/2}\,\left(3\,a^2+7\,b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{b^{5/2}\,\left(a^2+b^2\right)^2\,d}+$$

$$\frac{3\,a^2+2\,b^2}{b^2\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}}-\frac{a^2}{b\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\left(b+a\,\text{Cot}[c+d\,x]\right)}-$$

$$\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\,+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}+$$

$$\frac{\left(a^2+2\,a\,b-b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\,+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}$$

Result (type 3, 748 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^2\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^2\right.$$
$$\left.\left(\frac{a^3\ \text{Sin}[c+d x]}{b^2\ (a^2+b^2)\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])}+\frac{2\ \text{Tan}[c+d x]}{b^2}\right)\right)\Big/\left(d\ (b+a\ \text{Cot}[c+d x])^2\right)-$$
$$\frac{1}{2\ (a-i\ b)\ (a+i\ b)\ b^2\ d\ (b+a\ \text{Cot}[c+d x])^2}\ \text{Csc}[c+d x]^2\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^2$$
$$\left(-\left(\left(2\ (3\ a^3+3\ a\ b^2)\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\right.\right.\right.$$
$$\left.\left.\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\ \sqrt{b}\ (1+\text{Cot}[c+d x]^2)^2\ (a+b\ \text{Tan}[c+d x])\right)\right)+$$
$$\left(\sqrt{a}\ b^{3/2}\ \text{Cos}[2\ (c+d x)]\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\ \left(-4\ (a^2-b^2)\ \text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \left(-2\ (a-b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2\ (a-b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+(a+b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]\right)\Big/$$
$$\left(2\ (a^2+b^2)\ (-1+\text{Cot}[c+d x]^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\ \text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\ (a^2+b^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\ \text{Tan}[c+d x])}$$
$$b^3\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ \left(-8\ \sqrt{a}\ \sqrt{b}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\ (a+b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2\ (a+b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\ \text{Sec}[c+d x]^2\ \text{Sin}[2\ (c+d x)]\right)$$

Problem 833: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d x]^{5/2}}{(a+b\ \text{Tan}[c+d x])^3}\, dx$$

Optimal (type 3, 493 leaves, 19 steps):

$$-\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{b^{7/2}\left(99a^4+102a^2b^2+35b^4\right)\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{\text{Cot}[c+dx]}}{\sqrt{b}}\right]}{4a^{9/2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{b\left(24a^4+67a^2b^2+35b^4\right)\sqrt{\text{Cot}[c+dx]}}{4a^4\left(a^2+b^2\right)^2 d}-\frac{\left(8a^4+67a^2b^2+35b^4\right)\text{Cot}[c+dx]^{3/2}}{12a^3\left(a^2+b^2\right)^2 d}+$$
$$\frac{b^2\,\text{Cot}[c+dx]^{7/2}}{2a\left(a^2+b^2\right)d\left(b+a\,\text{Cot}[c+dx]\right)^2}+\frac{b^2\left(15a^2+7b^2\right)\text{Cot}[c+dx]^{5/2}}{4a^2\left(a^2+b^2\right)^2 d\left(b+a\,\text{Cot}[c+dx]\right)}+$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}$$

Result (type 3, 899 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Sec}[c+d x]^3\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(\frac{b\,(12 a^4+24 a^2 b^2+13 b^4)}{2 a^4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\frac{2\,\text{Cot}[c+d x]}{3 a^3}-\frac{b^5}{2 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\frac{3\,(7 a^2 b^4\,\text{Sin}[c+d x]+3 b^6\,\text{Sin}[c+d x])}{4 a^4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d x])^3\right)-\frac{1}{8 a^4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(a+b\,\text{Tan}[c+d x])^3}$$

$$\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3$$

$$\left(-\left(\left(2\,(4 a^6-28 a^4 b^2-67 a^2 b^4-35 b^6)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-\right.$$

$$\left((4 a^6-4 a^4 b^2)\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]\right)\Big/$$

$$\left(2\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)+\frac{1}{(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}$$

$$2 a^5 b\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\left(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\right)$$

Problem 834: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d x]^{3/2}}{(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 444 leaves, 18 steps):

$$-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{b^{5/2}\left(63a^4+46a^2b^2+15b^4\right)\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{\text{Cot}[c+dx]}}{\sqrt{b}}\right]}{4a^{7/2}\left(a^2+b^2\right)^3 d}-\frac{\left(8a^4+31a^2b^2+15b^4\right)\sqrt{\text{Cot}[c+dx]}}{4a^3\left(a^2+b^2\right)^2 d}+$$
$$\frac{b^2\,\text{Cot}[c+dx]^{5/2}}{2a\left(a^2+b^2\right)d\left(b+a\,\text{Cot}[c+dx]\right)^2}+\frac{b^2\left(13a^2+5b^2\right)\text{Cot}[c+dx]^{3/2}}{4a^2\left(a^2+b^2\right)^2 d\left(b+a\,\text{Cot}[c+dx]\right)}-$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}$$

Result (type 3, 874 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^3\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{4 a^4+8 a^2 b^2+5 b^4}{2 a^3 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2}+\frac{b^4}{2 a (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^2}+\right.$$
$$\left.\left.\frac{-17 a^2 b^3\ \text{Sin}[c+d x]-5 b^5\ \text{Sin}[c+d x]}{4 a^3 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])}\right)\right)\Big/\left(d\ (b+a\ \text{Cot}[c+d x])^3\right)-$$
$$\frac{1}{8 a^3 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 d\ (b+a\ \text{Cot}[c+d x])^3}\ \text{Csc}[c+d x]^3\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^3$$
$$\left(-\left(\left(2\ (16 a^4 b+31 a^2 b^3+15 b^5)\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\ (b+a\ \text{Cot}[c+d x])\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d x]^3\ \text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\ \sqrt{b}\ (1+\text{Cot}[c+d x]^2)^2\ (a+b\ \text{Tan}[c+d x])\right)\right)-$$
$$\left(1\Big/\left((a^2+b^2)\ (-1+\text{Cot}[c+d x]^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\ \text{Tan}[c+d x])\right)\right)$$
$$4 a^{7/2} \sqrt{b}\ \text{Cos}[2 (c+d x)]\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^3 \left(-4 (a^2-b^2)\right.$$
$$\text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \left(-2 (a-b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2 (a-b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+(a+b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]-$$
$$\frac{1}{4 (a^2+b^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\ \text{Tan}[c+d x])}\ (4 a^5-4 a^3 b^2)\ (b+a\ \text{Cot}[c+d x])$$
$$\text{Csc}[c+d x]^2 \left(-8 \sqrt{a}\ \sqrt{b}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2 (a+b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2 (a+b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.\left.1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]^2\ \text{Sin}[2 (c+d x)]\right)$$

Problem 835: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Cot}[c+d x]}}{(a+b\ \text{Tan}[c+d x])^3}\, dx$$

Optimal (type 3, 396 leaves, 17 steps):

$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{b^{3/2}\left(35a^4+6a^2b^2+3b^4\right)\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{\text{Cot}[c+dx]}}{\sqrt{b}}\right]}{4a^{5/2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{b^2\,\text{Cot}[c+dx]^{3/2}}{2a\left(a^2+b^2\right)d\left(b+a\,\text{Cot}[c+dx]\right)^2}+\frac{b^2\left(11a^2+3b^2\right)\sqrt{\text{Cot}[c+dx]}}{4a^2\left(a^2+b^2\right)^2 d\left(b+a\,\text{Cot}[c+dx]\right)}-$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}$$

Result (type 3, 857 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^3\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^3\right.$$
$$\left(\frac{b^3}{2 a^2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2}-\frac{b^3}{2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^2}+\right.$$
$$\left.\left.\frac{13 a^2 b^2\ \text{Sin}[c+d x]+b^4\ \text{Sin}[c+d x]}{4 a^2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])}\right)\right)\Big/\left(d\ (b+a\ \text{Cot}[c+d x])^3\right)+$$
$$\frac{1}{8 a^2 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 d\ (b+a\ \text{Cot}[c+d x])^3}\ \text{Csc}[c+d x]^3\ (a\ \text{Cos}[c+d x]+b\ \text{Sin}[c+d x])^3$$
$$\left(-\left(\left(2 \left(4 a^4+7 a^2 b^2+3 b^4\right) \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right] (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\right.\right.\right.$$
$$\left.\left.\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\ \sqrt{b}\ \left(1+\text{Cot}[c+d x]^2\right)^2 (a+b\ \text{Tan}[c+d x])\right)\right)-$$
$$\left(\left(4 a^4-4 a^2 b^2\right) \text{Cos}[2 (c+d x)]\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^3 \left(-4 \left(a^2-b^2\right) \text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \left(-2 (a-b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2 (a-b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+(a+b) \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]\right)\Big/$$
$$\left(2 \sqrt{a}\ \sqrt{b}\ \left(a^2+b^2\right) \left(-1+\text{Cot}[c+d x]^2\right) \left(1+\text{Cot}[c+d x]^2\right) (a+b\ \text{Tan}[c+d x])\right)+$$
$$\frac{1}{\left(a^2+b^2\right) \left(1+\text{Cot}[c+d x]^2\right) (a+b\ \text{Tan}[c+d x])}$$
$$2 a^3 b\ (b+a\ \text{Cot}[c+d x])\ \text{Csc}[c+d x]^2 \left(-8 \sqrt{a}\ \sqrt{b}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2 (a+b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2 (a+b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b) \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.\left.1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\ \text{Sec}[c+d x]^2\ \text{Sin}[2 (c+d x)]\right)\right)$$

Problem 836: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Cot}[c+d x]}\ (a+b\ \text{Tan}[c+d x])^3}\, dx$$

Optimal (type 3, 392 leaves, 17 steps):

$$\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a-b)\left(a^2+4 a b+b^2\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{\sqrt{b}\left(15 a^4-18 a^2 b^2-b^4\right) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]}{4 a^{3/2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{b^2 \sqrt{\text{Cot}[c+d x]}}{2 a\left(a^2+b^2\right) d\,(b+a \text{Cot}[c+d x])^2}-\frac{b\left(9 a^2+b^2\right) \sqrt{\text{Cot}[c+d x]}}{4 a\left(a^2+b^2\right)^2 d\,(b+a \text{Cot}[c+d x])}+$$
$$\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{(a+b)\left(a^2-4 a b+b^2\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}$$

Result (type 3, 841 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^3\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$

$$\left(-\frac{b^2}{2 a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{a\,b^2}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}-\right.$$

$$\left.\left.\frac{3\,(3 a^2 b\,\text{Sin}[c+d x]-b^3\,\text{Sin}[c+d x])}{4 a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/\left(d\,(b+a\,\text{Cot}[c+d x])^3\right)+$$

$$\frac{1}{8 a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(b+a\,\text{Cot}[c+d x])^3}\,\text{Csc}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3$$

$$\left(-\left(\left(2\,(a^2 b+b^3)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-$$

$$\left(1\Big/\left((a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)\right)$$

$$4\,a^{3/2}\sqrt{b}\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\left(-4\,(a^2-b^2)\right.$$

$$\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+\right.$$

$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]-$$

$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}\,(4 a^3-4 a b^2)\,(b+a\,\text{Cot}[c+d x])$$

$$\text{Csc}[c+d x]^2\left(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-\right.$$

$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)$$

Problem 837: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Cot}[c+d x]^{3/2}\,(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 385 leaves, 17 steps):

$$-\frac{(a+b)\left(a^2-4\,a\,b+b^2\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^3\,d}+$$

$$\frac{(a+b)\left(a^2-4\,a\,b+b^2\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^3\,d}-$$

$$\frac{\left(3\,a^4-26\,a^2\,b^2+3\,b^4\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{4\,\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)^3\,d}-$$

$$\frac{b\,\sqrt{\text{Cot}[c+d\,x]}}{2\,\left(a^2+b^2\right)\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2}+\frac{\left(5\,a^2-3\,b^2\right)\,\sqrt{\text{Cot}[c+d\,x]}}{4\,\left(a^2+b^2\right)^2\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)}+$$

$$\frac{(a-b)\left(a^2+4\,a\,b+b^2\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3\,d}-$$

$$\frac{(a-b)\left(a^2+4\,a\,b+b^2\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3\,d}$$

Result (type 3, 828 leaves) :

$$\left(\sqrt{\text{Cot}[c+d\,x]}\;\text{Csc}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{b}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\frac{a^2\,b}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+\right.$$

$$\left.\left.\frac{5\,a^2\,\text{Sin}[c+d\,x]-7\,b^2\,\text{Sin}[c+d\,x]}{4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\right)\Big/\left(d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\right)-$$

$$\frac{1}{8\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3}\,\text{Csc}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3$$

$$\left(-\left(\left(2\,(a^2+b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\,\text{Sec}[c+d\,x]\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{a}\,\sqrt{b}\,\left(1+\text{Cot}[c+d\,x]^2\right)^2\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)-$$

$$\left((4\,a^2-4\,b^2)\,\text{Cos}\left[2\,(c+d\,x)\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\,\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\right.\right.\right.$$

$$\left.\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+\right.$$

$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Cot}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]\right)\Big/$$

$$\left(2\,\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,\left(-1+\text{Cot}[c+d\,x]^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)+$$

$$\frac{1}{(a^2+b^2)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

$$2\,a\,b\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\right.$$

$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,(c+d\,x)\right]\right)$$

Problem 838: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{5/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 385 leaves, 17 steps):

$$-\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a-b)\left(a^2+4ab+b^2\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}\right]}{\sqrt{2}\left(a^2+b^2\right)^3 d}-$$
$$\frac{\sqrt{a}\left(a^4+18a^2b^2-15b^4\right)\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{\text{Cot}[c+dx]}}{\sqrt{b}}\right]}{4b^{3/2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{a\sqrt{\text{Cot}[c+dx]}}{2\left(a^2+b^2\right)d\left(b+a\,\text{Cot}[c+dx]\right)^2}-\frac{a\left(a^2-7b^2\right)\sqrt{\text{Cot}[c+dx]}}{4b\left(a^2+b^2\right)^2 d\left(b+a\,\text{Cot}[c+dx]\right)}-$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}+$$
$$\frac{(a+b)\left(a^2-4ab+b^2\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+dx]}+\text{Cot}[c+dx]\right]}{2\sqrt{2}\left(a^2+b^2\right)^3 d}$$

Result (type 3, 835 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Csc}[c+d x]^3\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{a}{2\,(a-i\,b)^2\,(a+i\,b)^2}+\frac{a^3}{2\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$\left.\left.\frac{-a^3\,\text{Sin}[c+d x]+11\,a\,b^2\,\text{Sin}[c+d x]}{4\,(a-i\,b)^2\,(a+i\,b)^2\,b\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/\left(d\,(b+a\,\text{Cot}[c+d x])^3\right)+$$
$$\frac{1}{8\,(a-i\,b)^2\,(a+i\,b)^2\,b\,d\,(b+a\,\text{Cot}[c+d x])^3}\,\text{Csc}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3$$
$$\left(-\left(\left(2\,(a^3+a\,b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\right.\right.$$
$$\left.\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)+$$
$$\Big(1\Big/\left((a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)\Big)$$
$$4\,\sqrt{a}\,b^{3/2}\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\Bigg(-4\,(a^2-b^2)$$
$$\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\Big(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+$$
$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\Big(\text{Log}\Big[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+$$
$$\text{Cot}[c+d x]\Big]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\Big)\Big)\Bigg)\,\text{Sec}[c+d x]-$$
$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}\,(-4\,a^2\,b+4\,b^3)\,(b+a\,\text{Cot}[c+d x])$$
$$\text{Csc}[c+d x]^2\,\Bigg(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}$$
$$\Big(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-$$
$$(a-b)\,\Big(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\Big[$$
$$1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]\Big)\Big)\Bigg)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\Bigg)$$

Problem 839: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d x]^{7/2}\,(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 396 leaves, 17 steps):

$$\frac{(a+b)\,(a^2-4\,a\,b+b^2)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,(a^2+b^2)^3\,d}-$$

$$\frac{(a+b)\,(a^2-4\,a\,b+b^2)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,(a^2+b^2)^3\,d}-$$

$$\frac{a^{3/2}\,(3\,a^4+6\,a^2\,b^2+35\,b^4)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{4\,b^{5/2}\,(a^2+b^2)^3\,d}-$$

$$\frac{a^2\,\sqrt{\text{Cot}[c+d\,x]}}{2\,b\,(a^2+b^2)\,d\,(b+a\,\text{Cot}[c+d\,x])^2}-\frac{a^2\,(3\,a^2+11\,b^2)\,\sqrt{\text{Cot}[c+d\,x]}}{4\,b^2\,(a^2+b^2)^2\,d\,(b+a\,\text{Cot}[c+d\,x])}-$$

$$\frac{(a-b)\,(a^2+4\,a\,b+b^2)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}+$$

$$\frac{(a-b)\,(a^2+4\,a\,b+b^2)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}$$

Result (type 3, 860 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\;\text{Csc}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$
$$\left.\left(\frac{a^2}{2\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,b}-\frac{a^4}{2\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-\frac{3\,\left(a^4\,\text{Sin}[c+d\,x]+5\,a^2\,b^2\,\text{Sin}[c+d\,x]\right)}{4\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,b^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\right)\Big/\left(d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\right)+$$
$$\frac{1}{8\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,b^2\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3}\text{Csc}[c+d\,x]^3\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3$$
$$\left(-\left(\left(2\,\left(3\,a^4+7\,a^2\,b^2+4\,b^4\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\right.\right.\right.$$
$$\left.\left.\text{Sec}[c+d\,x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(1+\text{Cot}[c+d\,x]^2\right)^2\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)-$$
$$\left(\left(4\,a^2\,b^2-4\,b^4\right)\,\text{Cos}\left[2\,(c+d\,x)\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\,\left(-4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+\right.$$
$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]\right)\Big/$$
$$\left(2\,\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)\,\left(-1+\text{Cot}[c+d\,x]^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)+$$
$$\frac{1}{\left(a^2+b^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$
$$2\,a\,b^3\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\right.$$
$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,(c+d\,x)\right]\right)$$

Problem 840: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{7/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\text{d}x$$

Optimal (type 3, 261 leaves, 11 steps) :

$$\frac{\sqrt{i a-b}\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{d}-$$

$$\frac{\sqrt{i a+b}\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{d}+$$

$$\frac{2\left(15 a^2+2 b^2\right)\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{15 a^2 d}-$$

$$\frac{2 b\,\text{Cot}[c+d x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{15 a d}-\frac{2\,\text{Cot}[c+d x]^{5/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{5 d}$$

Result (type 4, 4427 leaves):

$$\frac{1}{d}\sqrt{\text{Cot}[c+d x]}\left(\frac{4\left(9 a^2+b^2\right)}{15 a^2}-\frac{2 b\,\text{Cot}[c+d x]}{15 a}-\frac{2}{5}\text{Csc}[c+d x]^2\right)\sqrt{a+b\,\text{Tan}[c+d x]}-$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a-i b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{b\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.$$

$$\left.\left.\frac{a\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\mathrm{i}\, b\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\, b\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\, b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\, b\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\, b\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\, b\right)\right.$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ +\ \frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(\mathrm{i}\, b\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+\mathrm{i}\, b\right)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right] + \left(a-\mathrm{i}\, b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}\left[c+d\, x\right]}\, \text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2} + \frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \sqrt{a\, \text{Cos}\left[c+d\, x\right]+b\, \text{Sin}\left[c+d\, x\right]}}$$

$$4\, \text{Cos}\left[\frac{1}{2}\left(c+d\, x\right)\right]\sqrt{\frac{b-\sqrt{a^2+b^2}+a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}\left[c+d\, x\right]}\left(\mathrm{i}\, b\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+\mathrm{i}\, b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] +$$

$$\left(a-\mathrm{i}\, b\right)\, \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\, x\right]}\, \text{Sin}\left[\frac{1}{2}\left(c+d\, x\right)\right]\, \text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}}+\right.$$

$$\left(\text{i}\,(a+\text{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-\left(\mathrm{i}\,(a-\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

Problem 841: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 221 leaves, 11 steps):

$$\frac{\mathrm{i}\sqrt{\mathrm{i}\,a-b}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}+$$

$$\frac{\mathrm{i}\sqrt{\mathrm{i}\,a+b}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}-$$

$$\frac{2\,b\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,a\,d}-\frac{2\,\mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d}$$

Result (type 4, 4207 leaves):

$$\frac{\left(-\frac{2\,b}{3\,a}-\frac{2}{3}\mathrm{Cot}[c+d\,x]\right)\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}-$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\text{Csc}[c+d\,x]\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$i\,(a+i\,b)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(i\,a+b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left(-\left(\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\left(-i\,a\,\text{EllipticF}\left[i\right.\right.\right.\right.\right.$$

$$\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(i\,a+b)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\Bigg)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(i\,a+b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 3\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,\left(a+\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(\mathrm{i}\,a+b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,\left(a+\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(\mathrm{i}\,a+b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\text{i}\,\left(a+\text{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\text{i}\,a+b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\text{i}\,\left(a+\text{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}\left[c+d\,x\right]}\ \mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}}\ 2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}\left[c+d\,x\right]}$$

$$\left(-\mathrm{i}\,a\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(a+\mathrm{i}\,b\right)\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}\left[c+d\,x\right]^{3/2}\ \mathrm{Sin}\left[c+d\,x\right]\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}}\ 4\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}\left[c+d\,x\right]}$$

$$\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)+\left((a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-\left(\mathrm{i}\,(\mathrm{i}\,a+b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

Problem 842: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}\,dx$$

Optimal (type 3, 179 leaves, 9 steps):

$$-\frac{\sqrt{\mathrm{i}\,a-b}\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{d}+\frac{\sqrt{\mathrm{i}\,a+b}\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{d}-\frac{2\sqrt{\text{Cot}[c+d x]}\sqrt{a+b\,\text{Tan}[c+d x]}}{d}$$

Result (type 4, 4387 leaves):

$$-\frac{2\sqrt{\text{Cot}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}{d}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\text{i}\,b\right)\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.\left(a-\text{i}\,b\right)\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{b\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\right.$$

$$\left.\left.\frac{a\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(\mathrm{i}\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)\,\mathrm{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(a-\mathrm{i}\,b)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\right)-\left(a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\;\left(\mathrm{i}\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\mathrm{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\Bigg(\mathrm{i}\,b\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)\,\mathrm{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)$$

$$\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]+\left(a-\mathrm{i}\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Csc}[c+d\,x]^2$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]+\left(a-\mathrm{i}\,b\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \Bigg(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-\left(\mathrm{i}\,(a-\mathrm{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\operatorname{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+dx)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+dx)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+dx)\right]^{3/2}\right)\operatorname{Tan}\left[\frac{1}{2}(c+dx)\right]^{3/2}\right)\right)$$

Problem 843: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\operatorname{Cot}[c+dx]}\sqrt{a+b\operatorname{Tan}[c+dx]}\,dx$$

Optimal (type 3, 155 leaves, 8 steps):

$$-\frac{i\sqrt{i a-b}\operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\sqrt{\operatorname{Tan}[c+dx]}}{\sqrt{a+b\operatorname{Tan}[c+dx]}}\right]\sqrt{\operatorname{Cot}[c+dx]}\sqrt{\operatorname{Tan}[c+dx]}}{d}-\frac{i\sqrt{i a+b}\operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\sqrt{\operatorname{Tan}[c+dx]}}{\sqrt{a+b\operatorname{Tan}[c+dx]}}\right]\sqrt{\operatorname{Cot}[c+dx]}\sqrt{\operatorname{Tan}[c+dx]}}{d}$$

Result (type 4, 4157 leaves):

$$-\left(\left(\left(4\operatorname{Cos}\left[\frac{1}{2}(c+dx)\right]^2\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+dx)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+dx)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Csc}[c+dx]\right.\right.\right.$$

$$\left(-i a\operatorname{EllipticF}\left[i\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i(a+i b)\right.$$

$$\operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\, a+b\right) \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2} \sqrt{a+b\, \text{Tan}[c+d\, x]}\Bigg) \Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d \sqrt{\text{Sec}[c+d\, x]} \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]}\right)$$

$$\Bigg(\Bigg(a \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d\, x]} \Bigg(-\mathrm{i}\, a\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(a+\mathrm{i}\, b\right) \text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\, a+b\right) \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg) \sqrt{\text{Sec}[c+d\, x]}\Bigg) \Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}\right)+\Bigg(a \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d\, x]}$$

$$\left(-i\, a\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(i\,a+b)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 3\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-i\, a\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\, a+b\right) \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\, \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\, +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}} 2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}$$

$$\left(-\mathrm{i}\, a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,\left(a+\mathrm{i}\, b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\, a+b\right) \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\,\left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}} 2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(i\,a+b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\, a+b\right) \mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\mathrm{Sec}[c+d\, x]}\ \mathrm{Sin}\left[\frac{1}{2}\left(c+d\, x\right)\right] \mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\, x]+b\,\mathrm{Sin}[c+d\, x]}} 2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\, x\right)\right]^2$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\, x]}$$

$$\left(-\mathrm{i}\, a\, \mathrm{EllipticF}\left[\mathrm{i}\, \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(a+\mathrm{i}\, b\right)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\, a+b\right) \mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \mathrm{Sec}[c+d\, x]^{3/2}\, \mathrm{Sin}[c+d\, x]\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\, x]+b\,\mathrm{Sin}[c+d\, x]}} 4\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\, x\right)\right]^2$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\Bigg(-\Bigg(\Bigg(a\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg((a+\mathrm{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)\Bigg/\Bigg(4\,\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)-$$

$$\Bigg(\mathrm{i}\,(\mathrm{i}\,a+b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\,\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\Bigg)$$

Problem 844: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 211 leaves, 12 steps) :

$$\frac{\sqrt{\mathrm{i}\,a-b}\;\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{d}+$$

$$\frac{2\,\sqrt{b}\;\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{d}-$$

$$\frac{\sqrt{\mathrm{i}\,a+b}\;\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 6287 leaves):

$$\left(4\,a\left(\left(\left(b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathrm{i}\,a+b\right)\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(i\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(i\, a+b+\sqrt{a^2+b^2}\right) - \frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right) \Big/$$

$$\left(\sqrt{a^2+b^2}\ d\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(\left(a^2\sqrt{\text{Cot}[c+d\,x]}\left(\left(b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-a+b+\sqrt{a^2+b^2}\right) + \left((-\mathrm{i}\, a+b)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) + \left(\mathrm{i}\, b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(a+b+\sqrt{a^2+b^2}\right)\left.\left.\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\right)\right/$$

$$\left(\sqrt{a^2+b^2}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+\left(2\,a\,\sqrt{\operatorname{Cot}[c+d\,x]}\right.$$

$$\left(\left(\left.b\operatorname{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathrm{i}\,a+b\right)\operatorname{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\left.a\operatorname{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/$$

$$\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)+\left(\mathbb{i}\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\bigg/\left(\sqrt{a^2+b^2}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}}\,2\,a\,\text{Csc}[c+d\,x]^2$$

$$\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left((-\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathrm{i}\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\ 2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\Bigg(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\Bigg(\left(-\mathbb{i}\,a+b\right)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\Bigg(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(i\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}[c+d\,x]^{3/2}$$

$$\text{Sin}[c+d\,x]\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}-$$

$$\frac{1}{\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}2\,a\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(\left(-\mathrm{i}\,a+b\right)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\mathrm{i}\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\right.$$

$$\left.\frac{1}{a^2+b^2}a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\;\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}4\,a\,\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\;\sqrt{a^2+b^2}\;\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)\right)-$$

$$\left(a\,(-i\,a+b)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\;\sqrt{a^2+b^2}\;\left(a+i\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-i\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(i\,a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{i\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(i\,a\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(i\,a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{i\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\Bigg)\Bigg)$$

Problem 845: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\mathrm{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 244 leaves, 14 steps):

$$\frac{i\sqrt{i\,a-b}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}+$$

$$\frac{a\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{b}\,d}+$$

$$\frac{i\sqrt{i\,a+b}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}+\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 8071 leaves):

$$\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Cot}[c+d\,x]}}+$$

$$\left(2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-i\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\left(-\frac{a\,\text{Cos}\left[2\left(c+d\,x\right)\right]\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\frac{b\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\bigg/$$

$$\left(\sqrt{a^2+b^2}\;d\;\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(\left(a^2\,\sqrt{\mathrm{Cot}[c+d\,x]}\;\left(-\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\;\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\mathbb{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Big/$$

$$\left(2\sqrt{a^2+b^2}\;\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\left(a\sqrt{\mathrm{Cot}[c+d\,x]}\;\left(-\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\;\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\mathrm{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\;\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$a\,\text{Csc}[c+d\,x]^2\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\mathrm{i}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$a\sqrt{\text{Cot}[c+d\,x]}\ \left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\ +\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\ +$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(2\,i\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\mathrm{Sec}[c+d\,x]^{3/2}$$

$$\mathrm{Sin}[c+d\,x]\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\left(\frac{a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}$$

$$a\sqrt{\mathrm{Cot}[c+d\,x]}\left(-\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\dot{\imath}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)\right)+\left(2\,\dot{\imath}\,a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\dot{\imath}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\dot{\imath}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\dot{\imath}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\dot{\imath}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)-$$

$$\left(a^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-i\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-i\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a^2 \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Big/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{-\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(\mathrm{i} a^2 \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Big/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(a b \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Big/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) +$$

$$\left(a^2 \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Big/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 846: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{9/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 306 leaves, 12 steps):

$$-\frac{(\mathrm{i}\,a-b)^{3/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}-\frac{(\mathrm{i}\,a+b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}+\frac{4\,b\,(70\,a^2+3\,b^2)\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a^2\,d}+\frac{2\,(35\,a^2-3\,b^2)\,\mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a\,d}-\frac{16\,b\,\mathrm{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{35\,d}-\frac{2\,a\,\mathrm{Cot}[c+d\,x]^{7/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{7\,d}$$

Result (type 4, 4666 leaves):

$$\Bigg(\mathrm{Cos}[c+d\,x]\,\sqrt{\mathrm{Cot}[c+d\,x]}\left(\frac{4\,b\,(82\,a^2+3\,b^2)}{105\,a^2}+\frac{2\,(50\,a^2\,\mathrm{Cos}[c+d\,x]-3\,b^2\,\mathrm{Cos}[c+d\,x])\,\mathrm{Csc}[c+d\,x]}{105\,a}-\frac{16}{35}\,b\,\mathrm{Csc}[c+d\,x]^2-\frac{2}{7}\,a\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2\right)(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\Bigg)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\right)+$$

$$\Bigg(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Cos}[c+d\,x]\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\left(\left(a^2-b^2\right)\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{a^2\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\frac{b^2\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.$$

$$\left.\left.\frac{2\,a\,b\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(a+b\,\text{Tan}[c+d x]\right)^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^2\right.$$

$$\left(-\left(\left(\text{i}\,a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}\right.\right.\right.$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(i\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\left(a^2-b^2\right)\,\text{EllipticF}\left[\right.\right.\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^2\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}3\,i\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}}2\,i\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\;(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x])\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Csc}[c+d\,x]^2$$

$$\left((a^2-b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a - i b)^2 \,\text{EllipticPi}\Big[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big],$$

$$\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c + d x]} \,\text{Tan}\Big[\frac{1}{2}(c + d x)\Big]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} 4 i \,\text{Cos}\Big[\frac{1}{2}(c + d x)\Big]$$

$$\sqrt{\frac{b - \sqrt{a^2 + b^2} + a \,\text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{\text{Cot}[c + d x]}$$

$$\Bigg((a^2 - b^2) \,\text{EllipticF}\Big[i \,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big] - (a + i b)^2$$

$$\text{EllipticPi}\Big[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big] -$$

$$(a - i b)^2 \,\text{EllipticPi}\Big[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big],$$

$$\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c + d x]} \,\text{Sin}\Big[\frac{1}{2}(c + d x)\Big] \,\text{Tan}\Big[\frac{1}{2}(c + d x)\Big]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} 2 i \,\text{Cos}\Big[\frac{1}{2}(c + d x)\Big]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(\mathrm{i}\left(a^2-b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\left(\text{i}\,(a-\text{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg)\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 847: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{7/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 264 leaves, 11 steps):

$$-\frac{1}{d}\text{i}\,(\text{i}\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{\text{i}\,a-b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+$$

$$\frac{1}{d}\text{i}\,(\text{i}\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{\text{i}\,a+b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+$$

$$\frac{2\,(5\,a^2-b^2)\,\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}}{5\,a\,d}-$$

$$\frac{4\,b\,\text{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{5\,d}-\frac{2\,a\,\text{Cot}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{5\,d}$$

Result (type 4, 4558 leaves):

$$\left(\text{Cos}[c+d\,x]\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\frac{2\,(6\,a^2-b^2)}{5\,a}-\frac{4}{5}\,b\,\text{Cot}[c+d\,x]-\frac{2}{5}\,a\,\text{Csc}[c+d\,x]^2\right)\right.$$

$$\left.(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)-$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Cos}[c+d\,x]\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{2\,a\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$
$$\left.\frac{a^2\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{b^2\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\right.$$

$$(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\;\left(\left(a\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-i\,b\right)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\left(2\,i\,a\,b\,\text{EllipticF}\left[\right.\right.\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^2 \text{EllipticPi}\left[\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\Bigg(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{a\,b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}}+\right.$$

$$\left(i\left(a+i\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-\left(i\left(a-i\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

Problem 848: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c+d x]^{5/2}\,(a+b\operatorname{Tan}[c+d x])^{3/2}\,dx$$

Optimal (type 3, 213 leaves, 10 steps):

$$\frac{(\mathrm{i}\,a-b)^{3/2}\operatorname{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}+\frac{(\mathrm{i}\,a+b)^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}-\frac{8\,b\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{a+b\operatorname{Tan}[c+d x]}}{3\,d}-\frac{2\,a\operatorname{Cot}[c+d x]^{3/2}\sqrt{a+b\operatorname{Tan}[c+d x]}}{3\,d}$$

Result (type 4, 4595 leaves):

$$\left(\operatorname{Cos}[c+d x]\sqrt{\operatorname{Cot}[c+d x]}\left(-\frac{8\,b}{3}-\frac{2}{3}a\operatorname{Cot}[c+d x]\right)(a+b\operatorname{Tan}[c+d x])^{3/2}\right)\Big/\left(d\,(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x])\right)-$$

$$\left(4\,\mathrm{i}\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Cos}[c+d x]\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\operatorname{Cot}[c+d x]}\left((a^2-b^2)\operatorname{EllipticF}\left[\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{a^2\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{b^2\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\left.\frac{2\,a\,b\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$

$$\left(\left(\mathrm{i}\,a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\operatorname{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\left(\mathbb{i}\,a\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\operatorname{Cot}[c+d\,x]}\left(\left(a^2-b^2\right)\operatorname{EllipticF}\Big[\right.\right.$$

$$\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+\mathbb{i}\,b\right)^2\operatorname{EllipticPi}\Big[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a-\mathbb{i}\,b\right)^2$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\operatorname{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}3\,\mathbb{i}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\;+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a - i b)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg) \sqrt{\text{Sec}[c+d x]} \left(b \text{Cos}[c+d x] - a \text{Sin}[c+d x]\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]} \sqrt{a \text{Cos}[c+d x] + b \text{Sin}[c+d x]}} 2 i \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \text{Csc}[c+d x]^2$$

$$\Bigg(\left(a^2-b^2\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a - i b)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg) \sqrt{\text{Sec}[c+d x]} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x] + b \text{Sin}[c+d x]}} 4 i \text{Cos}\left[\frac{1}{2}(c+d x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\;\sqrt{\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathbb{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a - i b)^2 \text{EllipticPi}\left[\frac{i\left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \text{Sec}[c + d x]^{3/2} \text{Sin}[c + d x] \text{Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}} 4 i \text{Cos}\left[\frac{1}{2}(c + d x)\right]^2$$

$$\sqrt{\frac{b - \sqrt{a^2 + b^2} + a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{\text{Cot}[c + d x]}$$

$$\sqrt{\text{Sec}[c + d x]} \left(-\left(\left(i (a^2 - b^2) \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \text{Sec}\left[\frac{1}{2}(c + d x)\right]^2\right) \Big/\right.\right.$$

$$\left.\left(4 \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \text{Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2}\right)\right) +$$

$$\left(i (a + i b)^2 \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \text{Sec}\left[\frac{1}{2}(c + d x)\right]^2\right) \Big/ \left(4 \left(1 - i \text{Cot}\left[\frac{1}{2}(c + d x)\right]\right)\right.$$

$$\left.\sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \text{Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2}\right) +$$

$$\left(i (a - i b)^2 \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \text{Sec}\left[\frac{1}{2}(c + d x)\right]^2\right) \Big/$$

$$\left(4 \left(1 + i \text{Cot}\left[\frac{1}{2}(c + d x)\right]\right) \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 849: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,dx$$

Optimal (type 3, 185 leaves, 9 steps):

$$\frac{i\,(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}-\frac{1}{d}$$
$$i\,(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-$$
$$\frac{2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 4519 leaves):

$$-\frac{2\,a\,\text{Cos}[c+d\,x]\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}+$$
$$\Bigg(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Cos}[c+d\,x]\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$
$$\sqrt{\text{Cot}[c+d\,x]}\,\Bigg(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$
$$(a+i\,b)^2\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\, b\right)^2 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(\frac{2 a b \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\ \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} - \frac{a^2 \sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} + \frac{b^2 \sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\left(a+b \text{Tan}[c+d x]\right)^{3/2}\Bigg) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2\right.$$

$$\left(-\left(\left(a \sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \left(2\, \mathrm{i}\, a b\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+\mathrm{i}\, b\right)^2 \text{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg] + \left(a-\mathrm{i}\, b\right)^2$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left.\left.\sqrt{\text{Sec}[c+d\,x]}\right)\right/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\left(2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+i\,b\right)^2\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^2\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\Bigg(2\,\mathbb{i}\,a\,b\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathbb{i}\,b)^2$$

$$\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(a-\mathbb{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^2\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(2\,\mathrm{i}\,a\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\,b\right)^2 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\frac{a\,b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\right)\right) \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\right)\Bigg)$$

Problem 850: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\operatorname{Cot}[c+d x]}\,\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}\,dx$$

Optimal (type 3, 212 leaves, 13 steps):

$$-\frac{\left(i a-b\right)^{3/2}\operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}+\frac{2 b^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}-\frac{\left(i a+b\right)^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}$$

Result (type 4, 41 893 leaves): Display of huge result suppressed!

Problem 851: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}}{\sqrt{\operatorname{Cot}[c+d x]}}\,dx$$

Optimal (type 3, 246 leaves, 14 steps):

$$-\frac{1}{d} i\left(i a-b\right)^{3/2}\operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}+\frac{3 a\sqrt{b}\operatorname{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{d}+\frac{1}{d} i\left(i a+b\right)^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}+\frac{b\sqrt{a+b\operatorname{Tan}[c+d x]}}{d\sqrt{\operatorname{Cot}[c+d x]}}$$

Result (type 4, 10 413 leaves):

$$\frac{b\sqrt{\text{Cot}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{d\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}+$$

$$\left(2\,a\,\text{Cos}[c+d\,x]\ \sqrt{\text{Cot}[c+d\,x]}\ \left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left(\frac{a\,b\,\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{a\,b\,\text{Cos}\left[2\left(c+d\,x\right)\right]\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{a^2\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{b^2\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\;d\;\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right.$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}$$

$$\left(\left(a^2\sqrt{\text{Cot}[c+d\,x]}\;\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\Bigg(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(2\sqrt{a^2+b^2}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)+$$

$$\left(a\sqrt{\text{Cot}[c+d\,x]}\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\text{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\text{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\Bigg)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$a\,\text{Csc}[c+d\,x]^2\,\Bigg(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+$$

$$\Bigg(3\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-a+b+\sqrt{a^2+b^2}\right) - \left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) + \left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-b\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(3\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathrm{i}\,a\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b^2\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(3\,a\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ -$$

$$\frac{1}{\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}$$

$$a\sqrt{\text{Cot}[c+d\,x]}\,\Bigg(-b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\ +$$

$$\Bigg(3\,a\,b\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\ -\ \Bigg(2\,a^2\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)\ +$$

$$\left(2\,b^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(2\,a^2\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(4\,\mathbb{i}\,a\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2 b^2 \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(3 a b \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\ \sqrt{\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (b \text{Cos}[c+d x]-a \text{Sin}[c+d x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left. a \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x]) \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right) +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}{a^2+b^2}}} 2 a \sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}$$

$$\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\ \sqrt{\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a b \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4\sqrt{2}\ \sqrt{a^2+b^2}\ \sqrt{\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{2\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right) -$$

$$\left(3\,a^2\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a^3\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a^2\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a^3\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(\mathrm{i}\,a^2\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,b^2\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(3\,a^2\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)$$

Problem 852: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{3/2}}{\text{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 286 leaves, 15 steps):

$$\frac{(i\,a-b)^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}+$$

$$\frac{(3\,a^2-8\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{4\,\sqrt{b}\,d}+$$

$$\frac{(i\,a+b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}+$$

$$\frac{3\,a\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,d\,\sqrt{\text{Cot}[c+d\,x]}}+\frac{(a+b\,\text{Tan}[c+d\,x])^{3/2}}{2\,d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 51 040 leaves): Display of huge result suppressed!

Problem 853: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\text{Cot}[c+d\,x]^{11/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 358 leaves, 13 steps):

$$\frac{(\mathrm{i}\, a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{d}-$$

$$\frac{(\mathrm{i}\, a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{d}-$$

$$\frac{2\left(315 a^4-483 a^2 b^2-10 b^4\right)\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{315 a^2 d}+$$

$$\frac{2 b\left(231 a^2-5 b^2\right)\text{Cot}[c+d x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{315 a d}+$$

$$\frac{2\left(21 a^2-25 b^2\right)\text{Cot}[c+d x]^{5/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{105 d}-$$

$$\frac{38 a b\,\text{Cot}[c+d x]^{7/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{63 d}-\frac{2 a^2\,\text{Cot}[c+d x]^{9/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{9 d}$$

Result (type 4, 4747 leaves):

$$\Bigg(\text{Cos}[c+d x]^2\sqrt{\text{Cot}[c+d x]}$$

$$\left(-\frac{2\left(413 a^4-558 a^2 b^2-10 b^4\right)}{315 a^2}+\frac{2\left(326 a^2 b\,\text{Cos}[c+d x]-5 b^3\,\text{Cos}[c+d x]\right)\text{Csc}[c+d x]}{315 a}+\right.$$

$$\left.\frac{2}{315}\left(133 a^2-75 b^2\right)\text{Csc}[c+d x]^2-\frac{38}{63} a b\,\text{Cot}[c+d x]\,\text{Csc}[c+d x]^2-\frac{2}{9} a^2\,\text{Csc}[c+d x]^4\right)$$

$$\left.(a+b\,\text{Tan}[c+d x])^{5/2}\Bigg)\Big/\left(d\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^2\right)+\right.$$

$$\Bigg(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Cos}[c+d x]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\left(-\mathrm{i}\, b\left(-3 a^2+b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\, b)^3\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a-\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{3\,a^2\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{b^3\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{a^3\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{3\,a\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}$$

$$\left.(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\left(\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\mathbb{i}\,b\,\left(-3\,a^2+b^2\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(a-\mathbb{i}\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\Bigg)\Bigg)-$$

$$\Bigg(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\;\Bigg(-\mathrm{i}\,b\,\left(-3\,a^2+b^2\right)$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,\text{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+(a-\mathrm{i}\,b)^3$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\Bigg)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\text{i}\,b\,\left(-3\,a^2+b^2\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\text{i}\,b)^3\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\text{i}\,b\,\left(-3\,a^2+b^2\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a - i b)^3 \,\text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \sqrt{\text{Sec}[c + d x]} \,(b \,\text{Cos}[c + d x] - a \,\text{Sin}[c + d x]) \,\text{Tan}\left[\frac{1}{2} (c + d x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c + d x]} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} \,2 \,\text{Cos}\left[\frac{1}{2} (c + d x)\right]^2$$

$$\sqrt{\frac{b + \sqrt{a^2 + b^2} + a \,\text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \,\text{Csc}[c + d x]^2$$

$$\left(-i b \left(-3 a^2 + b^2\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a + i b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] +$$

$$(a - i b)^3 \,\text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \sqrt{\text{Sec}[c + d x]} \,\text{Tan}\left[\frac{1}{2} (c + d x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} \,4 \,\text{Cos}\left[\frac{1}{2} (c + d x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,b\,\left(-3\,a^2+b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,b\,\left(-3\,a^2+b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^3\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\Bigg(-\Bigg(\Bigg(b\left(-3\,a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Bigg/$$

$$\Bigg(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\mathrm{i}\,(a+\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Bigg/\Bigg(4\left(1-\mathrm{i}\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\Bigg)-$$

$$\Bigg(\mathrm{i}\,(a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Bigg/$$

$$\Bigg(4\left(1+\mathrm{i}\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 854: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{9/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 310 leaves, 12 steps):

$$\frac{i\,(i\,a-b)^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}+\frac{1}{d}$$
$$i\,(i\,a+b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+$$
$$\frac{2\,b\,(49\,a^2-3\,b^2)\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{21\,a\,d}+$$
$$\frac{2\,(7\,a^2-9\,b^2)\,\mathrm{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{21\,d}-$$
$$\frac{6\,a\,b\,\mathrm{Cot}[c+d\,x]^{5/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{7\,d}-\frac{2\,a^2\,\mathrm{Cot}[c+d\,x]^{7/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{7\,d}$$

Result (type 4, 4744 leaves):

$$\Bigg(\mathrm{Cos}[c+d\,x]^2\,\sqrt{\mathrm{Cot}[c+d\,x]}$$
$$\left(\frac{2\,b\,(58\,a^2-3\,b^2)}{21\,a}+\frac{2}{21}\,(10\,a^2\,\mathrm{Cos}[c+d\,x]-9\,b^2\,\mathrm{Cos}[c+d\,x])\,\mathrm{Csc}[c+d\,x]-\right.$$
$$\left.\frac{6}{7}\,a\,b\,\mathrm{Csc}[c+d\,x]^2-\frac{2}{7}\,a^2\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2\right)$$
$$(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\Bigg)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right)+$$

$$\Bigg(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\left(i\, a\left(a^2-3 b^2\right) \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(i\, a-b)^3 \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left. i\,(a-i\, b)^3 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{a^3 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\right.$$

$$\frac{3 a b^2 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+$$

$$\frac{3 a^2 b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$

$$\left.\left.\frac{b^3 \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}(a+b \text{Tan}[c+d x])^{5/2}\right) \Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d\,(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right.$$

$$\left(-\left(\left(a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.\right.\right.$$

$$\left(\mathbb{i}\, a \left(a^2-3\, b^2\right) \text{EllipticF}\left[\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + \left(\mathbb{i}\, a-b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$\mathbb{i}\left(a-\mathbb{i}\, b\right)^3 \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d\, x]}\Bigg) \Bigg/ \left(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]} \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}\right) -$$

$$\left(a \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d\, x]} \left(\mathbb{i}\, a \left(a^2-3\, b^2\right) \text{EllipticF}\left[\right.\right.\right.$$

$$\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + \left(\mathbb{i}\, a-b\right)^3 \text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \mathbb{i}\left(a-\mathbb{i}\, b\right)^3$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,a\left(a^2-3\,b^2\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathbb{i}\,a-b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathbb{i}\left(a-\mathbb{i}\,b\right)^3\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a-b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$i\,\left(a-i\,b\right)^3\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\left(i\,a\,\left(a^2-3\,b^2\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a-b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$i\,(a-i\,b)^3\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(i\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(i\,a-b)^3$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$i\,(a-i\,b)^3\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,a\,(a^2-3\,b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a-b)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\mathrm{i}\,(a-\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(\frac{a\,(a^2-3\,b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{4\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}}-\right.$$

$$\left(\mathrm{i}\,(\mathrm{i}\,a-b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-\left((a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

Problem 855: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{7/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 259 leaves, 11 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}+$$
$$\frac{(\mathrm{i}\,a+b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{d}+$$
$$\frac{2\,(15\,a^2-23\,b^2)\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d}-$$
$$\frac{22\,a\,b\,\mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d}-\frac{2\,a^2\,\mathrm{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,d}$$

Result (type 4, 4666 leaves):

$$\left(\mathrm{Cos}[c+d\,x]^2\sqrt{\mathrm{Cot}[c+d\,x]}\left(\frac{2}{15}(18\,a^2-23\,b^2)-\frac{22}{15}a\,b\,\mathrm{Cot}[c+d\,x]-\frac{2}{5}a^2\,\mathrm{Csc}[c+d\,x]^2\right)\right.$$

$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right)+$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Cos}[c+d\,x]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\,\left(\mathrm{i}\,b\,(-3\,a^2+b^2)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a-\mathrm{i}\,b)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{3\,a^2\,b\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+\right.$$
$$\frac{b^3\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$
$$\frac{a^3\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$
$$\left.\frac{3\,a\,b^2\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\left(\mathbb{i}\,b\left(-3\,a^2+b^2\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-(a-\mathbb{i}\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\left(\mathbb{i}\,b\left(-3\,a^2+b^2\right)\text{EllipticF}\left[\right.\right.\right.$$

$$\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]+(a+\mathbb{i}\,b)^3\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^3$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\,b\left(-3\,a^2+b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^3\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,b\,\left(-3\,a^2+b^2\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^3\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\left(\mathrm{i}\, b\,\left(-3\,a^2+b^2\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\, b\,\left(-3\,a^2+b^2\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^3\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,b\,\left(-3\,a^2+b^2\right)\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^3\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^3\,\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d x]}\left(\frac{b\left(-3 a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}}-\right.$$

$$\left(i\,(a+i\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+\left(i\,(a-i\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right|\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

Problem 856: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{5/2}\,(a+b\,\text{Tan}[c+d x])^{5/2}\,dx$$

Optimal (type 3, 222 leaves, 10 steps):

$$-\frac{1}{d}i\,(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\ -$$

$$\frac{1}{d}i\,(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\ -$$

$$\frac{14\,a\,b\,\sqrt{\text{Cot}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}}{3\,d}-\frac{2\,a^2\,\text{Cot}[c+d x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{3\,d}$$

Result (type 4, 4666 leaves):

$$\left(\text{Cos}[c+d x]^2 \sqrt{\text{Cot}[c+d x]} \left(-\frac{14 a b}{3}-\frac{2}{3} a^2 \text{Cot}[c+d x]\right) (a+b \text{Tan}[c+d x])^{5/2}\right) \Big/ \left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)+$$

$$\left(4 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \text{Cos}[c+d x]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]} \left(-\mathbb{i} a \left(a^2-3 b^2\right) \text{EllipticF}\left[\mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$\mathbb{i} (a+\mathbb{i} b)^3 \text{EllipticPi}\left[-\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(\mathbb{i} a+b)^3 \text{EllipticPi}\left[\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{a^3 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+\frac{3 a b^2 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-\frac{3 a^2 b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+\right.$$

$$\left.\left.\frac{b^3 \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2} (a+b \text{Tan}[c+d x])^{5/2}\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}\;\left(-\mathrm{i}\,a\left(a^2-3\,b^2\right)\mathrm{EllipticF}\left[\mathrm{i}\right.\right.\right.\right.\right.$$

$$\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\mathrm{i}\left(a+\mathrm{i}\,b\right)^3\mathrm{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]-\left(\mathrm{i}\,a+b\right)^3$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}\;\left(-\mathrm{i}\,a\left(a^2-3\,b^2\right)\mathrm{EllipticF}\Bigg[\right.\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\mathrm{i}\left(a+\mathrm{i}\,b\right)^3\mathrm{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(i\,a+b)^3$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-i\,a\left(a^2-3\,b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)^3$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(i\,a+b)^3\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}$$

$$\left(-\,\mathbb{i}\,a\left(a^2-3 b^2\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\left(a+\mathbb{i}\,b\right)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(\mathbb{i}\,a+b\right)^3\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\ \left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d x]^2$$

$$\left(-\mathrm{i}\, a\, \left(a^2-3\, b^2\right)\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\, (a+\mathrm{i}\, b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\, \left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(\mathrm{i}\, a+b)^3\, \text{EllipticPi}\left[\frac{\mathrm{i}\, \left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\, \sqrt{\text{Sec}[c+d\, x]}\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \sqrt{a\, \text{Cos}[c+d\, x]+b\, \text{Sin}[c+d\, x]}}\, 4\, \text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\, \text{Cot}\left[\frac{1}{2}\, (c+d\, x)\right]}{b+\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\, (c+d\, x)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{\text{Cot}[c+d\, x]}$$

$$\left(-\mathrm{i}\, a\, \left(a^2-3\, b^2\right)\, \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\, (a+\mathrm{i}\, b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\, \left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(\mathrm{i}\, a+b)^3\, \text{EllipticPi}\left[\frac{\mathrm{i}\, \left(b+\sqrt{a^2+b^2}\right)}{a},\, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,(a^2-3\,b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)^3\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(\mathrm{i}\,a+b)^3\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(a\,(a^2-3\,b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)+$$

$$\left((a+\text{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\text{i}\,(\text{i}\,a+b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/$$

$$\Bigg(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 857: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 243 leaves, 14 steps):

$$\frac{(\text{i}\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{\text{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}+$$

$$\frac{2\,b^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}-$$

$$\frac{(\text{i}\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{\text{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}-$$

$$\frac{2\,a^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 51 370 leaves): Display of huge result suppressed!

Problem 858: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Cot}[c+d x]}\ (a+b\,\text{Tan}[c+d x])^{5/2}\, dx$$

Optimal (type 3, 248 leaves, 14 steps):

$$\frac{i\,(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{d}+\frac{5\,a\,b^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{d}+\frac{1}{d}\,i\,(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}+\frac{b^2\sqrt{a+b\,\text{Tan}[c+d x]}}{d\sqrt{\text{Cot}[c+d x]}}$$

Result (type 4, 56 089 leaves): Display of huge result suppressed!

Problem 859: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\text{Tan}[c+d x])^{5/2}}{\sqrt{\text{Cot}[c+d x]}}\, dx$$

Optimal (type 3, 291 leaves, 15 steps):

$$-\frac{(i\,a-b)^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{d}+\frac{1}{4\,d}\sqrt{b}\,\left(15\,a^2-8\,b^2\right)\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}+\frac{(i\,a+b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{d}+\frac{b^2\sqrt{a+b\,\text{Tan}[c+d x]}}{2\,d\,\text{Cot}[c+d x]^{3/2}}+\frac{9\,a\,b\sqrt{a+b\,\text{Tan}[c+d x]}}{4\,d\sqrt{\text{Cot}[c+d x]}}$$

Result (type 4, 60 072 leaves): Display of huge result suppressed!

Problem 860: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}{\mathrm{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 337 leaves, 16 steps):

$$-\frac{1}{d}i\,(i\,a-b)^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\frac{5\,a\,(a^2-8\,b^2)\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{8\,\sqrt{b}\,d}-\frac{1}{d}i\,(i\,a+b)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\frac{b^2\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\mathrm{Cot}[c+d\,x]^{5/2}}+\frac{13\,a\,b\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{12\,d\,\mathrm{Cot}[c+d\,x]^{3/2}}+\frac{(11\,a^2-8\,b^2)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{8\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}}$$

Result (type 4, 64 812 leaves): Display of huge result suppressed!

Problem 861: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c+d\,x]^{5/2}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 220 leaves, 11 steps):

$$-\frac{\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{i\,a-b}\,d}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{i\,a+b}\,d}+\frac{4\,b\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,a^2\,d}-\frac{2\,\mathrm{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,a\,d}$$

Result (type 4, 490 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\left(\frac{4 b}{3 a^2}-\frac{2 \text{Cot}[c+d x]}{3 a}\right) \text{Sec}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])\right) \Big/ \left(d \sqrt{a+b \text{Tan}[c+d x]}\right)-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d \sqrt{a+b \text{Tan}[c+d x]}}$$

$$4 i \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left(\text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.\right.$$

$$i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \text{Sec}[c+d x] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

Problem 862: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^{3/2}}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Optimal (type 3, 187 leaves, 10 steps):

$$-\frac{i \text{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\sqrt{i a-b}\, d}+\frac{i \text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\sqrt{i a+b}\, d}-\frac{2 \sqrt{\text{Cot}[c+d x]} \sqrt{a+b \text{Tan}[c+d x]}}{a d}$$

Result (type 4, 2695 leaves):

$$-\frac{2 \sqrt{\text{Cot}[c+d x]} \text{Sec}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}{a d \sqrt{a+b \text{Tan}[c+d x]}}+$$

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(d\,\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left(-\left(\left(a\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.\right.\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\right)\Bigg/$$

$$\left(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\right)+\left(\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]\;\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\sqrt{1+\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\;\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\right)-$$

$$\Bigg(2\sqrt{\mathrm{Cot}[c+d\,x]}\;\Bigg(\mathrm{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\;i\,\mathrm{ArcSinh}\Big[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\mathrm{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$i\,\mathrm{ArcSinh}\Big[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{1+\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\;\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+$$

$$\Bigg(\mathrm{Csc}[c+d\,x]\;\Bigg(\mathrm{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\;i\,\mathrm{ArcSinh}\Big[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\mathrm{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\;i\,\mathrm{ArcSinh}\Big[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{1+\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\;\sqrt{\mathrm{Cot}[c+d\,x]}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-$$

$$\Bigg(a\left(b+\sqrt{a^2+b^2}\right)\sqrt{\mathrm{Cot}[c+d\,x]}\;\mathrm{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\Bigg(\mathrm{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\;i\,\mathrm{ArcSinh}\Big[\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Big],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(2\left(\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)^{3/2}\left(a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\Bigg(\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]^2\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\Bigg(2\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(i\,a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-i\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(\mathrm{i}\, a\, \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4\left(b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{i}\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right) \Big/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}}\ \sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}\right)$$

$$\left.\sqrt{a+b\,\mathrm{Tan}[c+d x]}\right)$$

Problem 863: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\mathrm{Cot}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 149 leaves, 8 steps):

$$\frac{\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\ \sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\ \sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{\mathrm{i}\, a-b}\ d}+$$

$$\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\ \sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\ \sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{\mathrm{i}\, a+b}\ d}$$

Result (type 4, 430 leaves):

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

$$4\,\text{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\left(\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

Problem 864: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 155 leaves, 8 steps):

$$\frac{\text{i}\,\text{ArcTan}\left[\frac{\sqrt{\text{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\text{i}\,a-b}\;d}-$$

$$\frac{\text{i}\,\text{ArcTanh}\left[\frac{\sqrt{\text{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\text{i}\,a+b}\;d}$$

Result (type 4, 2640 leaves):

$$\left(2\,\left(\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\;\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(d\,\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\Bigg(\Bigg(a\,\sqrt{\text{Cot}[c+d\,x]}\;\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\;\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\Bigg(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)-\Bigg(\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\;\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\right)+$$

$$\left(2\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(\text{Csc}[c+d\,x]\,\left(\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(a\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\text{Cot}[c+d\,x]}\,\text{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.$$

$$\left(\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x] \sqrt{1+\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(2 \left(\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right) \text{Cot}\left[\frac{1}{2} (c+d x)\right]}\right)^{3/2} \left(a-\left(b+\sqrt{a^2+b^2}\right) \text{Cot}\left[\frac{1}{2} (c+d x)\right]\right)^2\right.$$

$$\left.\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)+\left(\sqrt{\text{Cot}[c+d x]}\right.$$

$$\left(\text{EllipticPi}\left[-\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \text{ArcSinh}\left[\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x]^2 \sqrt{1+\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right) \text{Cot}\left[\frac{1}{2} (c+d x)\right]}}\ \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)+$$

$$\left(2 \sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x] \sqrt{1+\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(\mathbb{i}\, a \text{Sec}\left[\frac{1}{2} (c+d x)\right]^2\right)\Bigg/\left(4 \left(b+\sqrt{a^2+b^2}\right) \left(1-\mathbb{i} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right.\right.$$

$$\left.\sqrt{-\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right)-$$

$$\left(\mathbb{i}\, a \text{Sec}\left[\frac{1}{2} (c+d x)\right]^2\right)\Bigg/\left(4 \left(b+\sqrt{a^2+b^2}\right) \left(1+\mathbb{i} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right)\right.$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)$$

Problem 865: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 212 leaves, 13 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{i\,a-b}\,d}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{b}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{i\,a+b}\,d}$$

Result (type 4, 5276 leaves):

$$-\left(\left(4\,a\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i} a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\text{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\text{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i} a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\text{i} a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}[c+d x]\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)$$

$$\left(\frac{\sqrt{\text{Cot}[c+d x]}\;\text{Sec}[c+d x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\frac{\text{Cos}\left[2\left(c+d x\right)\right]\sqrt{\text{Cot}[c+d x]}\;\text{Sec}[c+d x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\ d\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\right.$$

$$\left(-\left(\left(a^2\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.\right.\right.$$

$$\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\Bigg)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathrm{i}\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)-$$

$$\left(2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathbb{i}\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) + \text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big] \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right) \Big/$$

$$\left(\sqrt{a^2+b^2}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right) +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}}\ 2\,a\,\text{Csc}[c+d\,x]^2$$

$$\left(-\left(\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big] \Big/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right) - \text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathrm{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ -$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right) - \text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big] \Big/ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(\mathrm{i}\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) + \text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big] \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\frac{1}{\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathbb{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,4\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(\mathbb{i}\,a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg/ \left(4\sqrt{2}\sqrt{a^2+b^2}\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\sqrt{a+b\operatorname{Tan}[c+d x]}\right)\right)$$

Problem 866: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\operatorname{Cot}[c+d x]^{5/2}\sqrt{a+b\operatorname{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 248 leaves, 14 steps):

$$-\frac{i \operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{i a-b}\,d}-$$

$$\frac{a \operatorname{ArcTanh}\left[\frac{\sqrt{b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\sqrt{\operatorname{Tan}[c+d x]}}{b^{3/2}\,d}+$$

$$\frac{i \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{i a+b}\,d}+\frac{\sqrt{a+b\operatorname{Tan}[c+d x]}}{b\,d\sqrt{\operatorname{Cot}[c+d x]}}$$

Result (type 4, 6016 leaves):

$$\frac{\operatorname{Sec}[c+d x]\left(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]\right)}{b\,d\sqrt{\operatorname{Cot}[c+d x]}\sqrt{a+b\operatorname{Tan}[c+d x]}}+$$

$$\left(2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\,\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)$$

$$\left(-\frac{a\,\sqrt{\text{Cot}[c+d\,x]}\,\,\text{Sec}[c+d\,x]^{3/2}}{2\,b\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{\sqrt{\text{Cot}[c+d\,x]}\,\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(b\,\sqrt{a^2+b^2}\,\,d\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(\left(a^2\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Big/$$

$$\left(2\,b\sqrt{a^2+b^2}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\left(a\sqrt{\text{Cot}[c+d\,x]}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\Bigg(b\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\Bigg)-$$

$$\frac{1}{b\sqrt{a^2+b^2}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$a\,\text{Csc}[c+d\,x]^2\Bigg(-\text{EllipticF}\Bigg[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]-$$

$$\Bigg(a\,\text{EllipticPi}\Bigg[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,+$$

$$\frac{1}{b\,\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$a\sqrt{\text{Cot}[c+d\,x]}\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ -$$

$$\frac{1}{b\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}$$

$$a\sqrt{\text{Cot}[c+d\,x]}\,\left(-\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\ -\right.$$

$$\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)\ +$$

$$\left(2\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(a\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{b\sqrt{a^2+b^2}\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\left(a^2 \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Bigg/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(a b \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Bigg/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(-\mathrm{i} a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{-\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(a b \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Bigg/ \left(2 \sqrt{2} \sqrt{a^2+b^2} \left(\mathrm{i} a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\mathrm{i} a+b+\sqrt{a^2+b^2}}\right)\right) -$$

$$\left(a^2 \operatorname{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right) \Bigg/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Problem 867: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d\,x]^{5/2}}{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 281 leaves, 11 steps):

$$-\frac{i\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}-\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}+\frac{2\,b^2\,(5\,a^2+8\,b^2)}{3\,a^3\,(a^2+b^2)\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}+\frac{8\,b\,\sqrt{\mathrm{Cot}[c+d\,x]}}{3\,a^2\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}-\frac{2\,\mathrm{Cot}[c+d\,x]^{3/2}}{3\,a\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4623 leaves):

$$\left(\sqrt{\mathrm{Cot}[c+d\,x]}\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right.$$
$$\left.\left(\frac{10\,b}{3\,a^3}-\frac{2\,\mathrm{Cot}[c+d\,x]}{3\,a^2}+\frac{2\,b^4\,\mathrm{Sin}[c+d\,x]}{a^3\,(a-i\,b)\,(a+i\,b)\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\right)\Big/$$
$$\left(d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\right)+$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(\text{i}\,a+b)\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.\text{i}\,(a+\text{i}\,b)\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])$$

$$\left(-\left(\left(a\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left((a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+\right.$$

$$\left.\left.\frac{b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(-\left(\left(a\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.\right.$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\text{i}\,a+b)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathrm{i}\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\text{i}\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\text{i}\left(a+\text{i}\,b\right)\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\text{i}\,a+b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathbb{i}\left(a+\mathbb{i}\,b\right)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(-\mathbb{i}\,a\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(\mathbb{i}\,a+b\right)\right.$$

$$\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$\mathbb{i}\left(a+\mathbb{i}\,b\right)\ \text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}$$

$$\left(-\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,(a+\mathbb{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}(c+d x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}$$

$$\left(-\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,(a+\mathbb{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)-\right.$$

$$\left(\text{i}\,(\text{i}\,a+b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+$$

$$\left((a+\text{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\left(a+b\,\text{Tan}[c+d x]\right)^{3/2}\right)$$

Problem 868: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d x]^{3/2}}{(a+b\,\text{Tan}[c+d x])^{3/2}}\,dx$$

Optimal (type 3, 233 leaves, 10 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{\text{i} a-b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{(\text{i} a-b)^{3/2} d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{\text{i} a+b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{(\text{i} a+b)^{3/2} d}-\frac{2 b\left(a^2+2 b^2\right)}{a^2\left(a^2+b^2\right) d\sqrt{\text{Cot}[c+d x]}\sqrt{a+b\,\text{Tan}[c+d x]}}-\frac{2\sqrt{\text{Cot}[c+d x]}}{a d\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 4592 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\,\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\left(-\frac{2}{a^2}-\frac{2 b^3\,\text{Sin}[c+d x]}{a^2(a-\text{i} b)(a+\text{i} b)(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d x])^{3/2}\right)-$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(\text{i}\, b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a-\text{i} b)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+\text{i} b)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])$$

$$\left(-\left(\left(b\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-\text{i} b)(a+\text{i} b)\sqrt{\text{Sec}[c+d x]}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)-\right.$$

$$\left.\left.\frac{a\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{(a-\mathbb{i}\,b)\ (a+\mathbb{i}\,b)\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \left(\left(a\ \sqrt{\frac{b-\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(\mathbb{i}\,b\ \text{EllipticF}\left[\mathbb{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\ \text{EllipticPi}\right[$$

$$-\frac{\mathbb{i}\ \left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-(a+\mathbb{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\ \left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left((a^2+b^2)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}\right)+\left(a\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\ (c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \left(\mathbb{i}\,b\ \text{EllipticF}\left[\mathbb{i}\ \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a-\mathrm{i}\,b\right)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}\right)-$$

$$\frac{1}{\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}}$$

$$3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}\left[c+d\,x\right]}$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,\text{EllipticPi}\Big[$$

$$-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\text{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\,\Bigg(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]-(a+i\,b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}}-\right.$$

$$\left(\text{i}\,(a-\text{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\Bigg)$$

Problem 869: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Cot}[c+d\,x]}}{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 199 leaves, 9 steps):

$$\frac{i\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}+$$

$$\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}+$$

$$\frac{2\,b^2}{a\,(a^2+b^2)\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4569 leaves):

$$\frac{2\,b^2\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a\,(a-i\,b)\,(a+i\,b)\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}-$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(-i\, a\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(i\, a+b)\, \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.i\,(a+i\, b)\, \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^2\,(a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x])$$

$$\left(\left(a \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left((a-i\, b)\,(a+i\, b) \sqrt{\text{Sec}[c+d x]} \sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}\right)-\right.$$

$$\left.\frac{b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]}\, \text{Sin}[c+d x]}{(a-i\, b)\,(a+i\, b) \sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}}\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg) \Big/$$

$$\left((a^2+b^2) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d \left(\left(a \sqrt{\frac{b-\sqrt{a^2+b^2}+a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.\right.\right.$$

$$\left(-i\, a\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(i\, a+b)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\, b)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(i\,a+b)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(a+i\,b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a+b)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathbb{i}\,(a+\mathbb{i}\,b)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,a\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$i\left(a+i\,b\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{(a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}$$

$$4\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\left(-\left(\left(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)-$$

$$\left(\mathrm{i}\,(\mathrm{i}\,a+b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left((a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 870: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\mathrm{Cot}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 189 leaves, 9 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{(i a-b)^{3/2}\,d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{(i a+b)^{3/2}\,d}-\frac{2 b}{\left(a^2+b^2\right) d\,\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 4551 leaves):

$$-\frac{2 b\,\text{Sec}[c+d x]\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}{(a-i b)\,(a+i b)\,d\,\sqrt{\text{Cot}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{3/2}}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(i b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a-i b)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+i b)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])$$

$$\left(\left(b\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)\,(a+i b)\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)+\right.$$

$$\left.\left.\frac{a\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{(a-i b)\,(a+i b)\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\left(-\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.\right.$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]-(a+i\,b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a-i\,b)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\, b)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg)+$$

$$\frac{1}{(a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\mathrm{i}\,b\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+\mathrm{i}\,b)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ -$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\, b\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a-i\,b)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+i\,b)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\, \text{Sin}[c+d\,x]\, \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2} +$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\, 4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{b\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}} -\right.$$

$$\left(i\,(a-i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right) +$$

$$\left(i\,(a+i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 871: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 194 leaves, 9 steps):

$$-\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}+\frac{2\,a}{\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4566 leaves):

$$\frac{2\,a\,\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{(a-i\,b)\,(a+i\,b)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(\text{i}\,a+b)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.\text{i}\,(a+\text{i}\,b)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])$$

$$\left(-\left(\left(a\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left((a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+\right.$$

$$\left.\frac{b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\text{i}\,b)\,(a+\text{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(-\left(\left(a\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.\right.$$

$$\left(-\text{i}\,a\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\text{i}\,a+b)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.\left.\mathrm{i}\,(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\bigg/\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\bigg/$$

$$\left((a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\mathrm{i}\left(a+\mathrm{i}\,b\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(\mathrm{i}\,a+b\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\left(a+i\,b\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(-i\,a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,a+b\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$i\left(a+i\,b\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\,(a+\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,a+b)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\,(a+\mathrm{i}\,b)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}$$

$$4\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\Bigg(-\Bigg(\Bigg(a\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Big/$$

$$\Bigg(4\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg)-$$

$$\Bigg(i\left(i\,a+b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Big/\Bigg(4\left(1-i\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)+$$

$$\Bigg(\left(a+i\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Big/\Bigg(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\Bigg)$$

Problem 872: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Cot}[c+d\,x]^{5/2}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 255 leaves, 14 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}+\frac{2\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{b^{3/2}\,d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}-\frac{2\,a^2}{b\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 42 289 leaves): Display of huge result suppressed!

Problem 873: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{7/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 310 leaves, 15 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}-\frac{3\,a\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{b^{5/2}\,d}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}-\frac{2\,a^2}{b\,(a^2+b^2)\,d\,\text{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+\frac{(3\,a^2+b^2)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{b^2\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 47 128 leaves): Display of huge result suppressed!

Problem 874: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^{5/2}}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 338 leaves, 12 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{(i a-b)^{5/2} d}+\frac{\text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{(i a+b)^{5/2} d}+\frac{2 b^2 \left(7 a^2+8 b^2\right)}{3 a^3 \left(a^2+b^2\right) d \sqrt{\text{Cot}[c+d x]} (a+b \text{Tan}[c+d x])^{3/2}}+\frac{4 b \sqrt{\text{Cot}[c+d x]}}{a^2 d (a+b \text{Tan}[c+d x])^{3/2}}-\frac{2 \text{Cot}[c+d x]^{3/2}}{3 a d (a+b \text{Tan}[c+d x])^{3/2}}+\frac{4 b^2 \left(4 a^4+15 a^2 b^2+8 b^4\right)}{3 a^4 \left(a^2+b^2\right)^2 d \sqrt{\text{Cot}[c+d x]} \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 4884 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]} \text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \left(\frac{2 b \left(8 a^4+16 a^2 b^2+9 b^4\right)}{3 a^4 \left(a^2+b^2\right)^2}-\frac{2 \text{Cot}[c+d x]}{3 a^3}-\frac{2 b^5}{3 a^2 (a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{2 \left(15 a^2 b^4 \text{Sin}[c+d x]+7 b^6 \text{Sin}[c+d x]\right)}{3 a^4 (a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}\right)\right) \Big/ \left(d (a+b \text{Tan}[c+d x])^{5/2}\right)-$$

$$\left(4 i \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]} \left((a^2-b^2) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 \text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\Bigg(-\Big(\Big(a^2\,\sqrt{\text{Cot}[c+d\,x]}\Big)\Big/$$
$$\Big((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Big)\Big)+$$
$$\Big(b^2\,\sqrt{\text{Cot}[c+d\,x]}\Big)\Big/\Big((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Big)+$$
$$\frac{2\,a\,b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\Bigg)\Bigg(\Bigg(\mathrm{i}\,a\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg((a^2-b^2)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\big(b+\sqrt{a^2+b^2}\big)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\Bigg)+$$

$$\Bigg(\text{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a^2-b^2\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\text{i}\,b)^2$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\left(a^2+b^2\right)^2\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\Bigg)-$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\,i\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{(a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(1\bigg/\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\,\left(\left(a^2-b^2\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathrm{i}\,\left(a^2-b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/\left((a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 875: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^{3/2}}{(a+b\,\text{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 305 leaves, 11 steps):

$$\frac{i\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{(i a-b)^{5/2}\,d}-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{(i a+b)^{5/2}\,d}-\frac{2 b\,(3 a^2+4 b^2)}{3 a^2\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d x]}\,(a+b\,\text{Tan}[c+d x])^{3/2}}-\frac{2\sqrt{\text{Cot}[c+d x]}}{a\,d\,(a+b\,\text{Tan}[c+d x])^{3/2}}-\frac{2 b\,(3 a^4+17 a^2 b^2+8 b^4)}{3 a^3\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 4817 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\,\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(-\frac{2\,(3 a^4+6 a^2 b^2+4 b^4)}{3 a^3\,(a-i b)^2\,(a+i b)^2}+\frac{2 b^4}{3 a\,(a-i b)^2\,(a+i b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}-\frac{8\,(3 a^2 b^3\,\text{Sin}[c+d x]+b^5\,\text{Sin}[c+d x])}{3 a^3\,(a-i b)^2\,(a+i b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d x])^{5/2}\right)+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(-2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathrm{i}\,b\right)^2 \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^3 \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2 \Bigg(-\Bigg(\left(2\,a\,b\sqrt{\text{Cot}[c+d\,x]}\right)\Big/$$

$$\left(\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2\sqrt{\text{Sec}[c+d\,x]}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Bigg)-$$

$$\frac{a^2\sqrt{\text{Cot}[c+d\,x]}\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\sqrt{\text{Cot}[c+d\,x]}\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Big/$$

$$\Bigg(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\;\Bigg(-\Bigg(\Bigg(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\Bigg(-2\,\mathrm{i}\,a\,b$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\Bigg[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\left(a+\mathrm{i}\,b\right)^2$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/\Bigg(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)\right)-\left(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\left(-2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{(a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-2\,i\,a\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(a+i b)^2\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\;-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}$$

$$\left(-2\,i\,a\,b\,\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-i b)^2\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(a+i b)^2\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d x]}\,(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x])\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d x]^2\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}4\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}$$

$$\left(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a + i b)^2 \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \sqrt{\text{Sec}[c + d x]} \text{ Sin}\left[\frac{1}{2}(c + d x)\right] \text{Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2} +$$

$$\frac{1}{\left(a^2 + b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}} 2 \text{Cos}\left[\frac{1}{2}(c + d x)\right]^2$$

$$\sqrt{\frac{b - \sqrt{a^2 + b^2} + a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b - \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{\text{Cot}[c + d x]}$$

$$\left(-2 i a b \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a - i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] +$$

$$(a + i b)^2 \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \text{Sec}[c + d x]^{3/2} \text{Sin}[c + d x] \text{ Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2} +$$

$$\frac{1}{\left(a^2 + b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]}} 4 \text{Cos}\left[\frac{1}{2}(c + d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}\;\left(-\left(\left(a\,b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/\right.$$

$$\left.\left(2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 876: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Cot}[c+d\,x]}}{(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 252 leaves, 10 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{\text{i} a-b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{(\text{i} a-b)^{5/2} d}-\frac{\text{ArcTanh}\left[\frac{\sqrt{\text{i} a+b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{(\text{i} a+b)^{5/2} d}+\frac{2 b^2}{3 a (a^2+b^2) d \sqrt{\text{Cot}[c+d x]} (a+b \text{Tan}[c+d x])^{3/2}}+\frac{4 b^2 (4 a^2+b^2)}{3 a^2 (a^2+b^2)^2 d \sqrt{\text{Cot}[c+d x]} \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 4859 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\ \text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right.$$
$$\left.\left(\frac{2 b^3}{3 a^2 (a-\text{i} b)^2 (a+\text{i} b)^2}-\frac{2 b^3}{3 (a-\text{i} b)^2 (a+\text{i} b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{2 (9 a^2 b^2 \text{Sin}[c+d x]+b^4 \text{Sin}[c+d x])}{3 a^2 (a-\text{i} b)^2 (a+\text{i} b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}\right)\right)\Big/\left(d (a+b \text{Tan}[c+d x])^{5/2}\right)+$$

$$\left(4 \text{i} \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left((a^2-b^2) \text{EllipticF}\left[\text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i} b)^2 \text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(a+\text{i} b)^2 \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2$$

$$\left(\left(a^2 \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left((a-i b)^2 (a+i b)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right) - \left(b^2 \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left((a-i b)^2 (a+i b)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right) - \frac{2 a b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{(a-i b)^2 (a+i b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d\right) - \left(\left(\left(i a \sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.\right.\right.$$

$$\left((a^2-b^2) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a+i b)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\Bigg) \Big/ \left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right) -$$

$$\left(\mathbb{i}\, a \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\operatorname{Cot}[c+d\,x]}\right.$$

$$\left((a^2-b^2)\operatorname{EllipticF}\left[\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\operatorname{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\ \sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}$$

$$3\,\mathbb{i}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\operatorname{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\operatorname{EllipticF}\left[\mathbb{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]\right)^{3/2}}\,2\,i\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}\left[c+d\,x\right]}$$

$$\Bigg(\left(a^2-b^2\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)^2$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+i\,b\right)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\,\left(b\,\text{Cos}\left[c+d\,x\right]-a\,\text{Sin}\left[c+d\,x\right]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\left(a^2-b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-i\,b\right)^2\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^2\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\left(-\left(\left(\mathrm{i}\,(a^2-b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\left.(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)$$

Problem 877: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\mathrm{Cot}[c+d\,x]}\;(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 251 leaves, 10 steps):

$$-\frac{\mathrm{i}\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{5/2}\,d}+\frac{\mathrm{i}\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{5/2}\,d}-\frac{2\,b}{3\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}-\frac{2\,b\,(5\,a^2-b^2)}{3\,a\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4796 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\left(-\frac{2\,b^2}{3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{2\,a\,b^2}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}-\frac{4\,(3\,a^2\,b\,\text{Sin}[c+d\,x]-b^3\,\text{Sin}[c+d\,x])}{3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)-$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2$$

$$\left(\left(2\,a\,b\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\right.$$

$$\frac{a^2\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b^2\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\right)\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\;\left(-2\,\text{i}\,a\right.\right.\right.$$

$$b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\text{i}\,b\right)^2\text{EllipticPi}\Big[$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a+\text{i}\,b\right)^2$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(-2 i a b \,\text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 \,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\right)\Big/$$

$$\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)-$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\left(-2 i a b \,\text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathrm{i}\,b\right)^2 \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right) \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]}\ +$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}} 2\,\text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a-\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$\left(a+\mathrm{i}\,b\right)^2 \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right) \sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(-2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathbb{i}\,b\right)^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-2\,\mathbb{i}\,a\,b\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathbb{i}\,b\right)^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}\;\Bigg(-\Bigg(\Bigg(a\,b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Big/$$

$$\Bigg(2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\mathrm{i}\,(a-\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Big/\Bigg(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)-$$

$$\Bigg(\mathrm{i}\,(a+\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Big/\Bigg(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\;\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Bigg)$$

Problem 878: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cot}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 239 leaves, 10 steps):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{5/2}\,d}+$$

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{5/2}\,d}+$$

$$\frac{2\,a}{3\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}+\frac{4\,(a^2-2\,b^2)}{3\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4850 leaves) :

$$\Bigg(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3$$

$$\Bigg(\frac{2\,b}{3\,(a-i\,b)^2\,(a+i\,b)^2}-\frac{2\,a^2\,b}{3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+$$

$$\frac{2\,(3\,a^2\,\text{Sin}[c+d\,x]-5\,b^2\,\text{Sin}[c+d\,x])}{3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\Bigg)\Bigg)\Bigg/\left(d\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)-$$

$$\Bigg(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\Bigg((a^2-b^2)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^2\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\Bigg(-\left(\left(a^2\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\right.$$

$$\left.\left((a-i\,b)^2\,(a+i\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+$$

$$\left(b^2 \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left(\left(a-\mathbb{i}\, b\right)^2 \left(a+\mathbb{i}\, b\right)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)+$$

$$\left.\frac{2\, a\, b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{\left(a-\mathbb{i}\, b\right)^2 \left(a+\mathbb{i}\, b\right)^2 \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\Bigg) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d \left(\left(\mathbb{i}\, a \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.\right.\right.$$

$$\left(\left(a^2-b^2\right) \text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\, b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathbb{i}\, b\right)^2 \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\Bigg) \Big/ \left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}\right)+$$

$$\left(\mathbb{i}\, a \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)-$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\,\mathrm{i}\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2-b^2)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ +$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a^2-b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2-b^2\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\left(-\left(\left(\mathrm{i}\,\left(a^2-b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+\right.$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/\left((a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)$$

Problem 879: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Cot}[c+d\,x]^{5/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 254 leaves, 10 steps) :

$$\frac{\mathrm{i}\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{5/2}\,d}-\frac{\mathrm{i}\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{5/2}\,d}-\frac{2\,a^2}{3\,b\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}+\frac{2\,a\,(a^2+7\,b^2)}{3\,b\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4773 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\left(-\frac{2\,a}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{2\,a^3}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\frac{16\,a\,b\,\text{Sin}[c+d\,x]}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\right)\Big/\left(d\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\left(-\left(\left(2\,a\,b\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\right.\right.$$

$$\left(\left(a-\mathbb{i}\,b\right)^2\left(a+\mathbb{i}\,b\right)^2\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Bigg)-\frac{a^2\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)^2\left(a+\mathbb{i}\,b\right)^2\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\left.\frac{b^2\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)^2\left(a+\mathbb{i}\,b\right)^2\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(-\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\left(-2\,\mathbb{i}\,a\,b\right.\right.\right.\right.\right.$$

$$\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2\mathrm{EllipticPi}\Bigg[$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\left(a+\mathbb{i}\,b\right)^2$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-\left(a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d x]}\left(-2 i a b \,\text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 \,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\Bigg)\Big/$$

$$\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{b-\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}$$

$$3\sqrt{\frac{b-\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\left(-2 i a b \,\text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]}\,-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-2\,\mathrm{i}\,a\,b\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2\right.$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(a+\mathrm{i}\,b)^2\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(-2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i}\,b)^2\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)^2\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-2\,\text{i}\,a\,b\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\text{i}\,b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+i b)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]} \text{Sin}\left[\frac{1}{2}(c+d x)\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} 2 \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left(-2 i a b \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+i b)^2 \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} 4 \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}\;\left(-\left(\left(a\,b\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left.\left(2\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(i\,(a+i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\left.(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 880: Result more than twice size of optimal antiderivative.

$$\int (d\,\text{Cot}[e+f\,x])^n\,(a+b\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 5, 206 leaves, 8 steps):

$$\frac{a^2 b d^2 (1-2n) (d \operatorname{Cot}[e+fx])^{-2+n}}{f (1-n) (2-n)} + \frac{a^2 d^2 (d \operatorname{Cot}[e+fx])^{-2+n} (b+a \operatorname{Cot}[e+fx])}{f (1-n)} - \frac{1}{f (2-n)} b (3a^2-b^2) d^2 (d \operatorname{Cot}[e+fx])^{-2+n} \text{Hypergeometric2F1}\left[1, \frac{1}{2}(-2+n), \frac{n}{2}, -\operatorname{Cot}[e+fx]^2\right] - \frac{1}{f (1-n)} a (a^2-3b^2) d (d \operatorname{Cot}[e+fx])^{-1+n} \text{Hypergeometric2F1}\left[1, \frac{1}{2}(-1+n), \frac{1+n}{2}, -\operatorname{Cot}[e+fx]^2\right]$$

Result (type 5, 449 leaves):

$$-\left(\left(3 a^2 b \operatorname{Cos}[e+fx]^3 (d \operatorname{Cot}[e+fx])^n \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{n}{2}, \frac{2+n}{2}, \operatorname{Cos}[e+fx]^2\right] (\operatorname{Sin}[e+fx]^2)^{1+\frac{1}{2}(-2+n)} (a+b \operatorname{Tan}[e+fx])^3\right) \Big/ \left(f n (a \operatorname{Cos}[e+fx] + b \operatorname{Sin}[e+fx])^3\right)\right) - \left(b^3 \operatorname{Cos}[e+fx] (d \operatorname{Cot}[e+fx])^n \text{Hypergeometric2F1}\left[\frac{1}{2}(-2+n), \frac{1}{2}(-2+n), \frac{n}{2}, \operatorname{Cos}[e+fx]^2\right] \operatorname{Sin}[e+fx]^4 (\operatorname{Sin}[e+fx]^2)^{\frac{1}{2}(-4+n)} (a+b \operatorname{Tan}[e+fx])^3\right) \Big/ \left(f (-2+n) (a \operatorname{Cos}[e+fx] + b \operatorname{Sin}[e+fx])^3\right) - \left(3 a b^2 \operatorname{Cos}[e+fx]^2 (d \operatorname{Cot}[e+fx])^n \text{Hypergeometric2F1}\left[\frac{1}{2}(-1+n), \frac{1}{2}(-1+n), \frac{1+n}{2}, \operatorname{Cos}[e+fx]^2\right] \operatorname{Sin}[e+fx]^3 (\operatorname{Sin}[e+fx]^2)^{\frac{1}{2}(-3+n)} (a+b \operatorname{Tan}[e+fx])^3\right) \Big/ \left(f (-1+n) (a \operatorname{Cos}[e+fx] + b \operatorname{Sin}[e+fx])^3\right) - \left(a^3 \operatorname{Cos}[e+fx]^4 (d \operatorname{Cot}[e+fx])^n \text{Hypergeometric2F1}\left[\frac{1+n}{2}, \frac{1+n}{2}, \frac{3+n}{2}, \operatorname{Cos}[e+fx]^2\right] \operatorname{Sin}[e+fx] (\operatorname{Sin}[e+fx]^2)^{\frac{1}{2}(-1+n)} (a+b \operatorname{Tan}[e+fx])^3\right) \Big/ \left(f (1+n) (a \operatorname{Cos}[e+fx] + b \operatorname{Sin}[e+fx])^3\right)$$

Problem 884: Unable to integrate problem.

$$\int \frac{(d \operatorname{Cot}[e+fx])^n}{(a+b \operatorname{Tan}[e+fx])^2} \, dx$$

Optimal (type 5, 250 leaves, 10 steps):

$$-\frac{a^2\,(d\,\mathrm{Cot}[e+f\,x])^{3+n}}{b\,(a^2+b^2)\,d^3\,f\,(b+a\,\mathrm{Cot}[e+f\,x])}+$$
$$\left((a^2-b^2)\,(d\,\mathrm{Cot}[e+f\,x])^{3+n}\,\mathrm{Hypergeometric2F1}\left[1,\frac{3+n}{2},\frac{5+n}{2},-\mathrm{Cot}[e+f\,x]^2\right]\right)\Big/$$
$$\left((a^2+b^2)^2\,d^3\,f\,(3+n)\right)+$$
$$\left(a^2\,(b^2\,n+a^2\,(2+n))\,(d\,\mathrm{Cot}[e+f\,x])^{3+n}\,\mathrm{Hypergeometric2F1}\left[1,3+n,4+n,-\frac{a\,\mathrm{Cot}[e+f\,x]}{b}\right]\right)\Big/$$
$$\left(b^2\,(a^2+b^2)^2\,d^3\,f\,(3+n)\right)+$$
$$\left(2\,a\,b\,(d\,\mathrm{Cot}[e+f\,x])^{4+n}\,\mathrm{Hypergeometric2F1}\left[1,\frac{4+n}{2},\frac{6+n}{2},-\mathrm{Cot}[e+f\,x]^2\right]\right)\Big/$$
$$\left((a^2+b^2)^2\,d^4\,f\,(4+n)\right)$$

Result (type 8, 25 leaves):

$$\int\frac{(d\,\mathrm{Cot}[e+f\,x])^n}{(a+b\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Problem 885: Unable to integrate problem.

$$\int(d\,\mathrm{Cot}[e+f\,x])^n\,(a+b\,\mathrm{Tan}[e+f\,x])^m\,dx$$

Optimal (type 6, 193 leaves, 8 steps):

$$\frac{1}{2\,f\,(1-n)}\mathrm{AppellF1}\left[1-n,-m,1,2-n,-\frac{b\,\mathrm{Tan}[e+f\,x]}{a},-i\,\mathrm{Tan}[e+f\,x]\right]$$
$$(d\,\mathrm{Cot}[e+f\,x])^n\,\mathrm{Tan}[e+f\,x]\,(a+b\,\mathrm{Tan}[e+f\,x])^m\left(1+\frac{b\,\mathrm{Tan}[e+f\,x]}{a}\right)^{-m}+$$
$$\frac{1}{2\,f\,(1-n)}\mathrm{AppellF1}\left[1-n,-m,1,2-n,-\frac{b\,\mathrm{Tan}[e+f\,x]}{a},i\,\mathrm{Tan}[e+f\,x]\right]$$
$$(d\,\mathrm{Cot}[e+f\,x])^n\,\mathrm{Tan}[e+f\,x]\,(a+b\,\mathrm{Tan}[e+f\,x])^m\left(1+\frac{b\,\mathrm{Tan}[e+f\,x]}{a}\right)^{-m}$$

Result (type 8, 25 leaves):

$$\int(d\,\mathrm{Cot}[e+f\,x])^n\,(a+b\,\mathrm{Tan}[e+f\,x])^m\,dx$$

Problem 886: Unable to integrate problem.

$$\int\mathrm{Cot}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^n\,dx$$

Optimal (type 6, 155 leaves, 10 steps):

$$-\frac{1}{d}\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}-\frac{1}{d}\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves) :

$$\int \text{Cot}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Problem 887: Unable to integrate problem.

$$\int \sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Optimal (type 6, 153 leaves, 10 steps) :

$$\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 25 leaves) :

$$\int \sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,dx$$

Problem 888: Unable to integrate problem.

$$\int \frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 6, 159 leaves, 10 steps) :

$$\left(\text{AppellF1}\left[\frac{3}{2},1,-n,\frac{5}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}\right)\Big/\left(3\,d\,\text{Cot}[c+d\,x]^{3/2}\right)+\left(\text{AppellF1}\left[\frac{3}{2},1,-n,\frac{5}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\left(a+b\,\text{Tan}[c+d\,x]\right)^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}\right)\Big/\left(3\,d\,\text{Cot}[c+d\,x]^{3/2}\right)$$

Result (type 8, 25 leaves) :

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^n}{\sqrt{\mathrm{Cot}[c+d\,x]}}\,dx$$

Problem 889: Unable to integrate problem.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^n}{\mathrm{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 6, 159 leaves, 10 steps):

$$\left(\mathrm{AppellF1}\left[\frac{5}{2},1,-n,\frac{7}{2},-i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right](a+b\,\mathrm{Tan}[c+d\,x])^n\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}\right)\Big/\left(5\,d\,\mathrm{Cot}[c+d\,x]^{5/2}\right)+\left(\mathrm{AppellF1}\left[\frac{5}{2},1,-n,\frac{7}{2},i\,\mathrm{Tan}[c+d\,x],-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right](a+b\,\mathrm{Tan}[c+d\,x])^n\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}\right)\Big/\left(5\,d\,\mathrm{Cot}[c+d\,x]^{5/2}\right)$$

Result (type 8, 25 leaves):

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^n}{\mathrm{Cot}[c+d\,x]^{3/2}}\,dx$$

Problem 890: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\mathrm{Tan}[e+f\,x])^3\,(c-i\,c\,\mathrm{Tan}[e+f\,x])\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{i\,c\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3}{3\,f}$$

Result (type 3, 62 leaves):

$$\frac{i\,a^3\,c\,\mathrm{Sec}[e+f\,x]^2}{f}+\frac{4\,a^3\,c\,\mathrm{Tan}[e+f\,x]}{3\,f}-\frac{a^3\,c\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{3\,f}$$

Problem 895: Result more than twice size of optimal antiderivative.

$$\int \frac{c-i\,c\,\mathrm{Tan}[e+f\,x]}{(a+i\,a\,\mathrm{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$\frac{i\,c}{3\,f\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3}$$

Result (type 3, 56 leaves):

$$\frac{1}{24\,a^3\,f}c\,\left(3+4\,\text{Cos}\left[2\,\left(e+f\,x\right)\right]+2\,\mathrm{i}\,\text{Sin}\left[2\,\left(e+f\,x\right)\right]\right)\,\left(\mathrm{i}\,\text{Cos}\left[4\,\left(e+f\,x\right)\right]+\text{Sin}\left[4\,\left(e+f\,x\right)\right]\right)$$

Problem 908: Result more than twice size of optimal antiderivative.

$$\int\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)\,\left(c-\mathrm{i}\,c\,\text{Tan}[e+f\,x]\right)^3\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$\frac{\mathrm{i}\,a\,\left(c-\mathrm{i}\,c\,\text{Tan}[e+f\,x]\right)^3}{3\,f}$$

Result (type 3, 62 leaves):

$$-\frac{\mathrm{i}\,a\,c^3\,\text{Sec}[e+f\,x]^2}{f}+\frac{4\,a\,c^3\,\text{Tan}[e+f\,x]}{3\,f}-\frac{a\,c^3\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]}{3\,f}$$

Problem 909: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(c-\mathrm{i}\,c\,\text{Tan}[e+f\,x]\right)^3}{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 71 leaves, 4 steps):

$$-\frac{4\,c^3\,x}{a}-\frac{4\,\mathrm{i}\,c^3\,\text{Log}[\text{Cos}[e+f\,x]]}{a\,f}+\frac{c^3\,\text{Tan}[e+f\,x]}{a\,f}+\frac{4\,\mathrm{i}\,c^3}{f\,\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)}$$

Result (type 3, 234 leaves):

$$\frac{1}{2\,a\,f\,\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\,\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\,\left(-\mathrm{i}+\text{Tan}[e+f\,x]\right)}$$
$$\mathrm{i}\,c^3\,\text{Sec}[e+f\,x]^2\,\left(-\mathrm{i}\,\text{Cos}[3\,e+2\,f\,x]+\mathrm{i}\,\text{Cos}[e+2\,f\,x]\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]+\right.$$
$$\mathrm{i}\,\text{Cos}[3\,e+2\,f\,x]\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]+\mathrm{i}\,\text{Cos}[e]\,\left(-3+2\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\right)+\text{Sin}[e]+$$
$$8\,\text{ArcTan}[\text{Tan}[f\,x]]\,\text{Cos}[e]\,\text{Cos}[e+f\,x]\,\left(\text{Cos}[e+f\,x]+\mathrm{i}\,\text{Sin}[e+f\,x]\right)-2\,\text{Sin}[e+2\,f\,x]-$$
$$\left.\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[e+2\,f\,x]-\text{Sin}[3\,e+2\,f\,x]-\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[3\,e+2\,f\,x]\right)$$

Problem 918: Result more than twice size of optimal antiderivative.

$$\int\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)\,\left(c-\mathrm{i}\,c\,\text{Tan}[e+f\,x]\right)^4\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$\frac{\mathrm{i}\,a\,\left(c-\mathrm{i}\,c\,\text{Tan}[e+f\,x]\right)^4}{4\,f}$$

Result (type 3, 85 leaves):

$$\frac{1}{4\,f}a\,c^4\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^4\,\left(-3\,\mathrm{i}\,\text{Cos}[e]-2\,\mathrm{i}\,\text{Cos}[e+2\,f\,x]-\right.$$
$$\left.2\,\mathrm{i}\,\text{Cos}[3\,e+2\,f\,x]-3\,\text{Sin}[e]+2\,\text{Sin}[e+2\,f\,x]-2\,\text{Sin}[3\,e+2\,f\,x]+\text{Sin}[3\,e+4\,f\,x]\right)$$

Problem 919: Result more than twice size of optimal antiderivative.

$$\int \frac{(c - i\, c \,\text{Tan}[e + f\, x])^4}{a + i\, a\, \text{Tan}[e + f\, x]}\, dx$$

Optimal (type 3, 95 leaves, 4 steps):

$$-\frac{12\, c^4\, x}{a} - \frac{12\, i\, c^4\, \text{Log}[\text{Cos}[e + f\, x]]}{a\, f} + \frac{5\, c^4\, \text{Tan}[e + f\, x]}{a\, f} - \frac{i\, c^4\, \text{Tan}[e + f\, x]^2}{2\, a\, f} + \frac{8\, i\, c^4}{f\, (a + i\, a\, \text{Tan}[e + f\, x])}$$

Result (type 3, 194 leaves):

$$\frac{1}{2\, f\, (a + i\, a\, \text{Tan}[e + f\, x])} c^4\, \text{Cos}[e]\, \text{Sec}[e + f\, x]\, (\text{Cos}[f\, x] + i\, \text{Sin}[f\, x])\, \Big(-24\, f\, x - 12\, i\, \text{Log}\big[\text{Cos}[e + f\, x]^2\big] + 24\, f\, x\, \text{Sec}[e]^2 - i\, \text{Sec}[e + f\, x]^2 + 10\, \text{Sec}[e]\, \text{Sec}[e + f\, x]\, \text{Sin}[f\, x] + 8\, \text{Sin}[2\, f\, x] + 12\, \text{Log}\big[\text{Cos}[e + f\, x]^2\big]\, \text{Tan}[e] + \text{Sec}[e + f\, x]^2\, \text{Tan}[e] + 10\, i\, \text{Sec}[e]\, \text{Sec}[e + f\, x]\, \text{Sin}[f\, x]\, \text{Tan}[e] - 8\, i\, \text{Sin}[2\, f\, x]\, \text{Tan}[e] - 24\, f\, x\, \text{Tan}[e]^2 - 24\, i\, \text{ArcTan}[\text{Tan}[f\, x]]\, (-i + \text{Tan}[e]) + 8\, \text{Cos}[2\, f\, x]\, (i + \text{Tan}[e])\Big)$$

Problem 920: Result more than twice size of optimal antiderivative.

$$\int \frac{(c - i\, c\, \text{Tan}[e + f\, x])^4}{(a + i\, a\, \text{Tan}[e + f\, x])^2}\, dx$$

Optimal (type 3, 101 leaves, 4 steps):

$$\frac{6\, c^4\, x}{a^2} + \frac{6\, i\, c^4\, \text{Log}[\text{Cos}[e + f\, x]]}{a^2\, f} - \frac{c^4\, \text{Tan}[e + f\, x]}{a^2\, f} + \frac{4\, i\, c^4}{f\, (a + i\, a\, \text{Tan}[e + f\, x])^2} - \frac{12\, i\, c^4}{f\, (a^2 + i\, a^2\, \text{Tan}[e + f\, x])}$$

Result (type 3, 279 leaves):

$$\frac{1}{2\, a^2\, f\, (-i + \text{Tan}[e + f\, x])^2} c^4\, \text{Sec}[e + f\, x]^2\, (\text{Cos}[f\, x] + i\, \text{Sin}[f\, x])^2 \Big(12\, f\, x + 8\, i\, \text{Cos}[2\, f\, x] + i\, \text{Cos}[2\, e - f\, x]\, \text{Sec}[e]\, \text{Sec}[e + f\, x] - i\, \text{Cos}[2\, e + f\, x]\, \text{Sec}[e]\, \text{Sec}[e + f\, x] - 24\, f\, x\, \text{Sin}[e]^2 - 12\, \text{ArcTan}[\text{Tan}[f\, x]]\, (\text{Cos}[2\, e] + i\, \text{Sin}[2\, e]) - 12\, i\, f\, x\, \text{Sin}[2\, e] - 2\, \text{Cos}[4\, f\, x]\, \text{Sin}[2\, e] + 6\, \text{Log}\big[\text{Cos}[e + f\, x]^2\big]\, \text{Sin}[2\, e] + 8\, \text{Sin}[2\, f\, x] + 2\, i\, \text{Sin}[2\, e]\, \text{Sin}[4\, f\, x] - \text{Sec}[e]\, \text{Sec}[e + f\, x]\, \text{Sin}[2\, e - f\, x] + \text{Sec}[e]\, \text{Sec}[e + f\, x]\, \text{Sin}[2\, e + f\, x] + 12\, i\, f\, x\, \text{Tan}[e] + 2\, i\, \text{Cos}[2\, e]\, \big(6\, i\, f\, x - \text{Cos}[4\, f\, x] - 3\, \text{Log}\big[\text{Cos}[e + f\, x]^2\big] + i\, \text{Sin}[4\, f\, x] + 6\, f\, x\, \text{Tan}[e]\big)\Big)$$

Problem 924: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a\, \text{Tan}[e + f\, x])^4}{c - i\, c\, \text{Tan}[e + f\, x]}\, dx$$

Optimal (type 3, 95 leaves, 4 steps):

$$-\frac{12 a^4 x}{c}+\frac{12 i a^4 \text{Log}[\text{Cos}[e+f x]]}{c f}+\frac{5 a^4 \text{Tan}[e+f x]}{c f}+\frac{i a^4 \text{Tan}[e+f x]^2}{2 c f}-\frac{8 i a^4}{f (c-i c \text{Tan}[e+f x])}$$

Result (type 3, 376 leaves):

$$-\frac{1}{4 c f (\text{Cos}[f x]+i \text{Sin}[f x])^4} a^4 \text{Sec}[e] \text{Sec}[e+f x]^2 \big(-3 i \text{Cos}[2 e+3 f x]+6 f x \text{Cos}[2 e+3 f x]+2 i \text{Cos}[4 e+3 f x]+6 f x \text{Cos}[4 e+3 f x]+\text{Cos}[f x] \left(5 i+18 f x-9 i \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)+\text{Cos}[2 e+f x] \left(10 i+18 f x-9 i \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)-3 i \text{Cos}[2 e+3 f x] \text{Log}\left[\text{Cos}[e+f x]^2\right]-3 i \text{Cos}[4 e+3 f x] \text{Log}\left[\text{Cos}[e+f x]^2\right]-13 \text{Sin}[f x]-6 i f x \text{Sin}[f x]-3 \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[f x]+2 \text{Sin}[2 e+f x]-6 i f x \text{Sin}[2 e+f x]-3 \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[2 e+f x]-7 \text{Sin}[2 e+3 f x]-6 i f x \text{Sin}[2 e+3 f x]-3 \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[2 e+3 f x]-2 \text{Sin}[4 e+3 f x]-6 i f x \text{Sin}[4 e+3 f x]-3 \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[4 e+3 f x]\big) (\text{Cos}[e+5 f x]+i \text{Sin}[e+5 f x])$$

Problem 925: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \text{Tan}[e+f x])^3}{c-i c \text{Tan}[e+f x]} \, dx$$

Optimal (type 3, 71 leaves, 4 steps):

$$-\frac{4 a^3 x}{c}+\frac{4 i a^3 \text{Log}[\text{Cos}[e+f x]]}{c f}+\frac{a^3 \text{Tan}[e+f x]}{c f}-\frac{4 i a^3}{f (c-i c \text{Tan}[e+f x])}$$

Result (type 3, 214 leaves):

$$\frac{1}{2 c f} a^3 \text{Sec}[e] \big(\text{Cos}[3 e+2 f x]-2 i f x \text{Cos}[3 e+2 f x]+\text{Cos}[e] \left(3-4 i f x-2 \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)+\text{Cos}[e+2 f x] \left(-2 i f x-\text{Log}\left[\text{Cos}[e+f x]^2\right]\right)-\text{Cos}[3 e+2 f x] \text{Log}\left[\text{Cos}[e+f x]^2\right]-i \text{Sin}[e]+2 i \text{Sin}[e+2 f x]-2 f x \text{Sin}[e+2 f x]+i \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[e+2 f x]+i \text{Sin}[3 e+2 f x]-2 f x \text{Sin}[3 e+2 f x]+i \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}[3 e+2 f x]\big) (-i+\text{Tan}[e+f x])$$

Problem 926: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \text{Tan}[e+f x])^2}{c-i c \text{Tan}[e+f x]} \, dx$$

Optimal (type 3, 55 leaves, 4 steps):

$$-\frac{a^2 x}{c}+\frac{i a^2 \text{Log}[\text{Cos}[e+f x]]}{c f}-\frac{2 i a^2}{f (c-i c \text{Tan}[e+f x])}$$

Result (type 3, 130 leaves):

$$-\left(\left(a^2 \left(\text{Cos}[e+f x] \left(2 i+4 f x-i \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)-2 \text{ArcTan}[\text{Tan}[3 e+f x]] (\text{Cos}[e+f x]-i \text{Sin}[e+f x])+\left(-2-4 i f x-\text{Log}\left[\text{Cos}[e+f x]^2\right]\right) \text{Sin}[e+f x]\right) (\text{Cos}[e+3 f x]+i \text{Sin}[e+3 f x])\right) \Big/ \left(2 c f (\text{Cos}[f x]+i \text{Sin}[f x])^2\right)\right)$$

Problem 931: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a\, \text{Tan}[e + f\, x])^4}{(c - i\, c\, \text{Tan}[e + f\, x])^2}\, dx$$

Optimal (type 3, 101 leaves, 4 steps):

$$\frac{6\, a^4\, x}{c^2} - \frac{6\, i\, a^4\, \text{Log}[\text{Cos}[e + f\, x]]}{c^2\, f} - \frac{a^4\, \text{Tan}[e + f\, x]}{c^2\, f} - \frac{4\, i\, a^4}{f\, (c - i\, c\, \text{Tan}[e + f\, x])^2} + \frac{12\, i\, a^4}{f\, (c^2 - i\, c^2\, \text{Tan}[e + f\, x])}$$

Result (type 3, 374 leaves):

$$\frac{1}{4\, c^2\, f\, (\text{Cos}[f\, x] + i\, \text{Sin}[f\, x])^4}\, a^4\, \text{Sec}[e]\, \text{Sec}[e + f\, x] \\ (\text{Cos}[2\, (e + 3\, f\, x)] + i\, \text{Sin}[2\, (e + 3\, f\, x)])\, (-3\, i\, \text{Cos}[2\, e + 3\, f\, x] + 6\, f\, x\, \text{Cos}[2\, e + 3\, f\, x] - \\ i\, \text{Cos}[4\, e + 3\, f\, x] + 6\, f\, x\, \text{Cos}[4\, e + 3\, f\, x] + \text{Cos}[f\, x]\, \left(7\, i + 6\, f\, x - 3\, i\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\right) + \\ \text{Cos}[2\, e + f\, x]\, \left(9\, i + 6\, f\, x - 3\, i\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\right) - 3\, i\, \text{Cos}[2\, e + 3\, f\, x]\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right] - \\ 3\, i\, \text{Cos}[4\, e + 3\, f\, x]\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right] + \text{Sin}[f\, x] - 6\, i\, f\, x\, \text{Sin}[f\, x] - \\ 3\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\, \text{Sin}[f\, x] + 3\, \text{Sin}[2\, e + f\, x] - 6\, i\, f\, x\, \text{Sin}[2\, e + f\, x] - \\ 3\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\, \text{Sin}[2\, e + f\, x] - \text{Sin}[2\, e + 3\, f\, x] - 6\, i\, f\, x\, \text{Sin}[2\, e + 3\, f\, x] - \\ 3\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\, \text{Sin}[2\, e + 3\, f\, x] + \text{Sin}[4\, e + 3\, f\, x] - \\ 6\, i\, f\, x\, \text{Sin}[4\, e + 3\, f\, x] - 3\, \text{Log}\left[\text{Cos}[e + f\, x]^2\right]\, \text{Sin}[4\, e + 3\, f\, x])$$

Problem 934: Result more than twice size of optimal antiderivative.

$$\int \frac{a + i\, a\, \text{Tan}[e + f\, x]}{(c - i\, c\, \text{Tan}[e + f\, x])^2}\, dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{i\, a}{2\, f\, (c - i\, c\, \text{Tan}[e + f\, x])^2}$$

Result (type 3, 51 leaves):

$$\frac{1}{8\, c^2\, f} a\, (3\, \text{Cos}[e + f\, x] - i\, \text{Sin}[e + f\, x])\, (-i\, \text{Cos}[3\, (e + f\, x)] + \text{Sin}[3\, (e + f\, x)])$$

Problem 938: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a\, \text{Tan}[e + f\, x])^6}{(c - i\, c\, \text{Tan}[e + f\, x])^3}\, dx$$

Optimal (type 3, 154 leaves, 4 steps):

$$-\frac{40\,a^6\,x}{c^3}+\frac{40\,i\,a^6\,\text{Log}[\text{Cos}[e+f\,x]]}{c^3\,f}+\frac{9\,a^6\,\text{Tan}[e+f\,x]}{c^3\,f}+\frac{i\,a^6\,\text{Tan}[e+f\,x]^2}{2\,c^3\,f}-\frac{32\,i\,a^6}{3\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^3}+\frac{40\,i\,a^6}{c\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^2}-\frac{80\,i\,a^6}{f\,(c^3-i\,c^3\,\text{Tan}[e+f\,x])}$$

Result (type 3, 971 leaves) :

$$-\frac{40\,x\,\mathrm{Cos}[6\,e]\,\mathrm{Cos}[e+f\,x]^6\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{c^3\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}-$$
$$\frac{4\,i\,\mathrm{Cos}[6\,f\,x]\,\mathrm{Cos}[e+f\,x]^6\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{3\,c^3\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{20\,i\,\mathrm{Cos}[6\,e]\,\mathrm{Cos}[e+f\,x]^6\,\mathrm{Log}\left[\mathrm{Cos}[e+f\,x]^2\right]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{c^3\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{\mathrm{Cos}[4\,f\,x]\,\mathrm{Cos}[e+f\,x]^6\,\left(\frac{6\,i\,\mathrm{Cos}[2\,e]}{c^3}+\frac{6\,\mathrm{Sin}[2\,e]}{c^3}\right)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\left(\mathrm{Cos}[2\,f\,x]\,\mathrm{Cos}[e+f\,x]^6\,\left(-\frac{24\,i\,\mathrm{Cos}[4\,e]}{c^3}-\frac{24\,\mathrm{Sin}[4\,e]}{c^3}\right)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6\right)\Big/$$
$$\left(f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6\right)+\frac{40\,i\,x\,\mathrm{Cos}[e+f\,x]^6\,\mathrm{Sin}[6\,e]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{c^3\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{20\,\mathrm{Cos}[e+f\,x]^6\,\mathrm{Log}\left[\mathrm{Cos}[e+f\,x]^2\right]\,\mathrm{Sin}[6\,e]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{c^3\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{\mathrm{Cos}[e+f\,x]^4\,\left(\frac{i\,\mathrm{Cos}[6\,e]}{2\,c^3}+\frac{\mathrm{Sin}[6\,e]}{2\,c^3}\right)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\left(\mathrm{Cos}[e+f\,x]^5\,\mathrm{Sec}[e]\,\left(\frac{9\,\mathrm{Cos}[6\,e]}{c^3}-\frac{9\,i\,\mathrm{Sin}[6\,e]}{c^3}\right)\,\mathrm{Sin}[f\,x]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6\right)\Big/$$
$$\left(f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6\right)+$$
$$\left(\mathrm{Cos}[e+f\,x]^6\,\left(\frac{24\,\mathrm{Cos}[4\,e]}{c^3}-\frac{24\,i\,\mathrm{Sin}[4\,e]}{c^3}\right)\,\mathrm{Sin}[2\,f\,x]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6\right)\Big/$$
$$\left(f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6\right)+$$
$$\frac{\mathrm{Cos}[e+f\,x]^6\,\left(-\frac{6\,\mathrm{Cos}[2\,e]}{c^3}+\frac{6\,i\,\mathrm{Sin}[2\,e]}{c^3}\right)\,\mathrm{Sin}[4\,f\,x]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{4\,\mathrm{Cos}[e+f\,x]^6\,\mathrm{Sin}[6\,f\,x]\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6}{3\,c^3\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}+$$
$$\frac{1}{(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^6}\,x\,\mathrm{Cos}[e+f\,x]^6\,\left(\frac{20\,\mathrm{Cos}[e]^4}{c^3}-\frac{20\,\mathrm{Cos}[e]^6}{c^3}-\right.$$
$$\frac{100\,i\,\mathrm{Cos}[e]^3\,\mathrm{Sin}[e]}{c^3}+\frac{140\,i\,\mathrm{Cos}[e]^5\,\mathrm{Sin}[e]}{c^3}-\frac{200\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]^2}{c^3}+$$
$$\frac{420\,\mathrm{Cos}[e]^4\,\mathrm{Sin}[e]^2}{c^3}+\frac{200\,i\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^3}{c^3}-\frac{700\,i\,\mathrm{Cos}[e]^3\,\mathrm{Sin}[e]^3}{c^3}+\frac{100\,\mathrm{Sin}[e]^4}{c^3}-$$
$$\frac{700\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]^4}{c^3}+\frac{420\,i\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^5}{c^3}+\frac{140\,\mathrm{Sin}[e]^6}{c^3}-\frac{20\,i\,\mathrm{Sin}[e]^4\,\mathrm{Tan}[e]}{c^3}-$$
$$\left.\frac{20\,i\,\mathrm{Sin}[e]^6\,\mathrm{Tan}[e]}{c^3}-i\,\left(\frac{40\,\mathrm{Cos}[6\,e]}{c^3}-\frac{40\,i\,\mathrm{Sin}[6\,e]}{c^3}\right)\,\mathrm{Tan}[e]\right)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^6$$

Problem 939: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\, a \,\mathrm{Tan}[e+f\, x])^5}{(c-i\, c\, \mathrm{Tan}[e+f\, x])^3}\, dx$$

Optimal (type 3, 134 leaves, 4 steps):

$$-\frac{8\, a^5\, x}{c^3}+\frac{8\, i\, a^5\, \mathrm{Log}[\mathrm{Cos}[e+f\, x]]}{c^3\, f}+\frac{a^5\, \mathrm{Tan}[e+f\, x]}{c^3\, f}-\frac{16\, i\, a^5}{3\, f\, (c-i\, c\, \mathrm{Tan}[e+f\, x])^3}-\frac{24\, i\, a^5}{f\, (c^3-i\, c^3\, \mathrm{Tan}[e+f\, x])}+\frac{16\, i\, a^5\, c^5}{f\, (c^4-i\, c^4\, \mathrm{Tan}[e+f\, x])^2}$$

Result (type 3, 923 leaves):

$$-\frac{8\,x\,\text{Cos}[5\,e]\,\text{Cos}[e+f\,x]^5\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{c^3\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{4\,i\,\text{Cos}[5\,e]\,\text{Cos}[e+f\,x]^5\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{c^3\,f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[6\,f\,x]\,\text{Cos}[e+f\,x]^5\left(-\frac{2\,i\,\text{Cos}[e]}{3\,c^3}+\frac{2\,\text{Sin}[e]}{3\,c^3}\right)(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[4\,f\,x]\,\text{Cos}[e+f\,x]^5\left(\frac{2\,i\,\text{Cos}[e]}{c^3}+\frac{2\,\text{Sin}[e]}{c^3}\right)(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[2\,f\,x]\,\text{Cos}[e+f\,x]^5\left(-\frac{6\,i\,\text{Cos}[3\,e]}{c^3}-\frac{6\,\text{Sin}[3\,e]}{c^3}\right)(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{8\,i\,x\,\text{Cos}[e+f\,x]^5\,\text{Sin}[5\,e]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{c^3\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{4\,\text{Cos}[e+f\,x]^5\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[5\,e]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{c^3\,f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[e+f\,x]^4\left(\frac{\text{Cos}[5\,e]}{c^3}-\frac{i\,\text{Sin}[5\,e]}{c^3}\right)\text{Sin}[f\,x]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[e+f\,x]^5\left(\frac{6\,\text{Cos}[3\,e]}{c^3}-\frac{6\,i\,\text{Sin}[3\,e]}{c^3}\right)\text{Sin}[2\,f\,x]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[e+f\,x]^5\left(-\frac{2\,\text{Cos}[e]}{c^3}+\frac{2\,i\,\text{Sin}[e]}{c^3}\right)\text{Sin}[4\,f\,x]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\frac{\text{Cos}[e+f\,x]^5\left(\frac{2\,\text{Cos}[e]}{3\,c^3}+\frac{2\,i\,\text{Sin}[e]}{3\,c^3}\right)\text{Sin}[6\,f\,x]\,(a+i\,a\,\text{Tan}[e+f\,x])^5}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5}+$$

$$\Bigg(x\,\text{Cos}[e+f\,x]^5\Bigg(\frac{4\,\text{Cos}[e]^3}{c^3}-\frac{4\,\text{Cos}[e]^5}{c^3}-\frac{16\,i\,\text{Cos}[e]^2\,\text{Sin}[e]}{c^3}+\frac{24\,i\,\text{Cos}[e]^4\,\text{Sin}[e]}{c^3}-$$
$$\frac{24\,\text{Cos}[e]\,\text{Sin}[e]^2}{c^3}+\frac{60\,\text{Cos}[e]^3\,\text{Sin}[e]^2}{c^3}+\frac{16\,i\,\text{Sin}[e]^3}{c^3}-\frac{80\,i\,\text{Cos}[e]^2\,\text{Sin}[e]^3}{c^3}-$$
$$\frac{60\,\text{Cos}[e]\,\text{Sin}[e]^4}{c^3}+\frac{24\,i\,\text{Sin}[e]^5}{c^3}+\frac{4\,\text{Sin}[e]^3\,\text{Tan}[e]}{c^3}+\frac{4\,\text{Sin}[e]^5\,\text{Tan}[e]}{c^3}-$$
$$i\left(\frac{8\,\text{Cos}[5\,e]}{c^3}-\frac{8\,i\,\text{Sin}[5\,e]}{c^3}\right)\text{Tan}[e]\Bigg)\,(a+i\,a\,\text{Tan}[e+f\,x])^5\Bigg)\Bigg/\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^5$$

Problem 943: Result more than twice size of optimal antiderivative.

$$\int\frac{a+i\,a\,\text{Tan}[e+f\,x]}{(c-i\,c\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{i a}{3 f (c - i c \operatorname{Tan}[e + f x])^3}$$

Result (type 3, 56 leaves):

$$\frac{1}{24 c^3 f} a (3 + 4 \operatorname{Cos}[2 (e + f x)] - 2 i \operatorname{Sin}[2 (e + f x)]) (-i \operatorname{Cos}[4 (e + f x)] + \operatorname{Sin}[4 (e + f x)])$$

Problem 947: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^6}{(c - i c \operatorname{Tan}[e + f x])^4} \, dx$$

Optimal (type 3, 160 leaves, 4 steps):

$$\frac{10 a^6 x}{c^4} - \frac{10 i a^6 \operatorname{Log}[\operatorname{Cos}[e + f x]]}{c^4 f} - \frac{a^6 \operatorname{Tan}[e + f x]}{c^4 f} - \frac{8 i a^6}{f (c - i c \operatorname{Tan}[e + f x])^4} + \frac{80 i a^6}{3 c f (c - i c \operatorname{Tan}[e + f x])^3} - \frac{40 i a^6}{f (c^2 - i c^2 \operatorname{Tan}[e + f x])^2} + \frac{40 i a^6}{f (c^4 - i c^4 \operatorname{Tan}[e + f x])}$$

Result (type 3, 1048 leaves):

$$\frac{10 x \operatorname{Cos}[6 e] \operatorname{Cos}[e + f x]^6 (a + i a \operatorname{Tan}[e + f x])^6}{c^4 (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} + \frac{4 i \operatorname{Cos}[6 f x] \operatorname{Cos}[e + f x]^6 (a + i a \operatorname{Tan}[e + f x])^6}{3 c^4 f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} - \frac{5 i \operatorname{Cos}[6 e] \operatorname{Cos}[e + f x]^6 \operatorname{Log}\left[\operatorname{Cos}[e + f x]^2\right] (a + i a \operatorname{Tan}[e + f x])^6}{c^4 f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} + \frac{\operatorname{Cos}[4 f x] \operatorname{Cos}[e + f x]^6 \left(-\frac{3 i \operatorname{Cos}[2 e]}{c^4} - \frac{3 \operatorname{Sin}[2 e]}{c^4}\right) (a + i a \operatorname{Tan}[e + f x])^6}{f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} + \frac{\operatorname{Cos}[8 f x] \operatorname{Cos}[e + f x]^6 \left(-\frac{i \operatorname{Cos}[2 e]}{2 c^4} + \frac{\operatorname{Sin}[2 e]}{2 c^4}\right) (a + i a \operatorname{Tan}[e + f x])^6}{f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} + \frac{\operatorname{Cos}[2 f x] \operatorname{Cos}[e + f x]^6 \left(\frac{8 i \operatorname{Cos}[4 e]}{c^4} + \frac{8 \operatorname{Sin}[4 e]}{c^4}\right) (a + i a \operatorname{Tan}[e + f x])^6}{f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} - \frac{10 i x \operatorname{Cos}[e + f x]^6 \operatorname{Sin}[6 e] (a + i a \operatorname{Tan}[e + f x])^6}{c^4 (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} - \frac{5 \operatorname{Cos}[e + f x]^6 \operatorname{Log}\left[\operatorname{Cos}[e + f x]^2\right] \operatorname{Sin}[6 e] (a + i a \operatorname{Tan}[e + f x])^6}{c^4 f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^6} - \left(\operatorname{Cos}[e + f x]^5 \operatorname{Sec}[e] \left(\frac{\operatorname{Cos}[6 e]}{c^4} - \frac{i \operatorname{Sin}[6 e]}{c^4}\right) \operatorname{Sin}[f x] (a + i a \operatorname{Tan}[e + f x])^6\right) \Big/$$

$$\left(f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6\right)+$$

$$\frac{\text{Cos}[e+f x]^6\left(-\frac{8 \text{Cos}[4 e]}{c^4}+\frac{8 i \text{Sin}[4 e]}{c^4}\right) \text{Sin}[2 f x]\left(a+i a \text{Tan}[e+f x]\right)^6}{f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6}+$$

$$\frac{\text{Cos}[e+f x]^6\left(\frac{3 \text{Cos}[2 e]}{c^4}-\frac{3 i \text{Sin}[2 e]}{c^4}\right) \text{Sin}[4 f x]\left(a+i a \text{Tan}[e+f x]\right)^6}{f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6}-$$

$$\frac{4 \text{Cos}[e+f x]^6 \text{Sin}[6 f x]\left(a+i a \text{Tan}[e+f x]\right)^6}{3 c^4 f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6}+$$

$$\frac{\text{Cos}[e+f x]^6\left(\frac{\text{Cos}[2 e]}{2 c^4}+\frac{i \text{Sin}[2 e]}{2 c^4}\right) \text{Sin}[8 f x]\left(a+i a \text{Tan}[e+f x]\right)^6}{f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6}+$$

$$\Bigg(x \text{Cos}[e+f x]^6\Bigg(-\frac{5 \text{Cos}[e]^4}{c^4}+\frac{5 \text{Cos}[e]^6}{c^4}+\frac{25 i \text{Cos}[e]^3 \text{Sin}[e]}{c^4}-\frac{35 i \text{Cos}[e]^5 \text{Sin}[e]}{c^4}+$$

$$\frac{50 \text{Cos}[e]^2 \text{Sin}[e]^2}{c^4}-\frac{105 \text{Cos}[e]^4 \text{Sin}[e]^2}{c^4}-\frac{50 i \text{Cos}[e] \text{Sin}[e]^3}{c^4}+\frac{175 i \text{Cos}[e]^3 \text{Sin}[e]^3}{c^4}-$$

$$\frac{25 \text{Sin}[e]^4}{c^4}+\frac{175 \text{Cos}[e]^2 \text{Sin}[e]^4}{c^4}-\frac{105 i \text{Cos}[e] \text{Sin}[e]^5}{c^4}-\frac{35 \text{Sin}[e]^6}{c^4}+$$

$$\frac{5 i \text{Sin}[e]^4 \text{Tan}[e]}{c^4}+\frac{5 i \text{Sin}[e]^6 \text{Tan}[e]}{c^4}+i\left(\frac{10 \text{Cos}[6 e]}{c^4}-\frac{10 i \text{Sin}[6 e]}{c^4}\right) \text{Tan}[e]\Bigg)$$

$$\left(a+i a \text{Tan}[e+f x]\right)^6\Bigg) \Big/ \left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^6$$

Problem 952: Result more than twice size of optimal antiderivative.

$$\int \frac{a+i a \text{Tan}[e+f x]}{\left(c-i c \text{Tan}[e+f x]\right)^4} \, dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{i a}{4 f\left(c-i c \text{Tan}[e+f x]\right)^4}$$

Result (type 3, 74 leaves):

$$\frac{1}{64 c^4 f} a\left(10 \text{Cos}[e+f x]+5 \text{Cos}\left[3\left(e+f x\right)\right]-i\left(2 \text{Sin}[e+f x]+3 \text{Sin}\left[3\left(e+f x\right)\right]\right)\right)$$
$$\left(-i \text{Cos}\left[5\left(e+f x\right)\right]+\text{Sin}\left[5\left(e+f x\right)\right]\right)$$

Problem 970: Result more than twice size of optimal antiderivative.

$$\int \left(a+i a \text{Tan}[e+f x]\right)\left(c-i c \text{Tan}[e+f x]\right)^{5/2} dx$$

Optimal (type 3, 27 leaves, 3 steps):

$$\frac{2\,i\,a\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{5/2}}{5\,f}$$

Result (type 3, 70 leaves):

$$\frac{1}{5\,f}2\,a\,c^2\,\mathrm{Sec}[e+f\,x]^2\,(\mathrm{Cos}[f\,x]-i\,\mathrm{Sin}[f\,x])\,(i\,\mathrm{Cos}[2\,e+f\,x]+\mathrm{Sin}[2\,e+f\,x])\,\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}$$

Problem 971: Attempted integration timed out after 120 seconds.

$$\int\frac{(c-i\,c\,\mathrm{Tan}[e+f\,x])^{5/2}}{a+i\,a\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 125 leaves, 6 steps):

$$-\frac{3\,i\,\sqrt{2}\,c^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}}{\sqrt{2}\,\sqrt{c}}\right]}{a\,f}+\frac{3\,i\,c^2\,\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}}{a\,f}+\frac{i\,c^2\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}{a\,f\,(c+i\,c\,\mathrm{Tan}[e+f\,x])}$$

Result (type 1, 1 leaves):

???

Problem 976: Result more than twice size of optimal antiderivative.

$$\int\frac{a+i\,a\,\mathrm{Tan}[e+f\,x]}{\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{2\,i\,a}{f\,\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 64 leaves):

$$\frac{1}{c\,f}2\,a\,\mathrm{Cos}[e+f\,x]\,(\mathrm{Cos}[f\,x]-i\,\mathrm{Sin}[f\,x])\,(-i\,\mathrm{Cos}[e+2\,f\,x]+\mathrm{Sin}[e+2\,f\,x])\,\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}$$

Problem 982: Result more than twice size of optimal antiderivative.

$$\int\frac{a+i\,a\,\mathrm{Tan}[e+f\,x]}{(c-i\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 27 leaves, 3 steps):

$$-\frac{2\,i\,a}{3\,f\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}$$

Result (type 3, 72 leaves):

$$\frac{1}{3\,c^2\,f}2\,a\,\mathrm{Cos}[e+f\,x]^2\,(\mathrm{Cos}[f\,x]-i\,\mathrm{Sin}[f\,x])$$
$$(-i\,\mathrm{Cos}[2\,e+3\,f\,x]+\mathrm{Sin}[2\,e+3\,f\,x])\,\sqrt{c-i\,c\,\mathrm{Tan}[e+f\,x]}$$

Problem 988: Result more than twice size of optimal antiderivative.

$$\int \frac{a+i\, a \operatorname{Tan}[e+f x]}{(c-i\, c \operatorname{Tan}[e+f x])^{5/2}} \, dx$$

Optimal (type 3, 27 leaves, 3 steps):

$$-\frac{2\, i\, a}{5\, f\, (c-i\, c \operatorname{Tan}[e+f x])^{5/2}}$$

Result (type 3, 72 leaves):

$$\frac{1}{5\, c^3\, f} 2\, a \operatorname{Cos}[e+f x]^3 \left(\operatorname{Cos}[f x]-i \operatorname{Sin}[f x]\right) \left(-i \operatorname{Cos}[3 e+4 f x]+\operatorname{Sin}[3 e+4 f x]\right) \sqrt{c-i\, c \operatorname{Tan}[e+f x]}$$

Problem 1007: Result more than twice size of optimal antiderivative.

$$\int (a+i\, a \operatorname{Tan}[e+f x])^{5/2} (c-i\, c \operatorname{Tan}[e+f x])^{5/2} \, dx$$

Optimal (type 3, 168 leaves, 6 steps):

$$-\frac{3\, i\, a^{5/2}\, c^{5/2} \operatorname{ArcTan}\left[\frac{\sqrt{c}\, \sqrt{a+i\, a \operatorname{Tan}[e+f x]}}{\sqrt{a}\, \sqrt{c-i\, c \operatorname{Tan}[e+f x]}}\right]}{4\, f}+\frac{3\, a^2\, c^2 \operatorname{Tan}[e+f x] \sqrt{a+i\, a \operatorname{Tan}[e+f x]}\, \sqrt{c-i\, c \operatorname{Tan}[e+f x]}}{8\, f}+\frac{a\, c \operatorname{Tan}[e+f x] (a+i\, a \operatorname{Tan}[e+f x])^{3/2} (c-i\, c \operatorname{Tan}[e+f x])^{3/2}}{4\, f}$$

Result (type 3, 358 leaves):

$$-\left(\left(3\,\mathrm{i}\,c^3\,e^{-\mathrm{i}\,(3\,e+f\,x)}\,\sqrt{e^{\mathrm{i}\,f\,x}}\,\sqrt{\frac{e^{\mathrm{i}\,(e+f\,x)}}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,\mathrm{ArcTan}\left[e^{\mathrm{i}\,(e+f\,x)}\right]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\right)\Big/\left(4\,\sqrt{\frac{c}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,f\,\mathrm{Sec}[e+f\,x]^{5/2}\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^{5/2}\right)\right)+$$

$$\frac{1}{f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2}\mathrm{Cos}[e+f\,x]^2\,\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]-\mathrm{i}\,c\,\mathrm{Sin}[e+f\,x])}$$
$$\left(c^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]^3\left(\frac{1}{4}\mathrm{Cos}[2\,e]-\frac{1}{4}\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\mathrm{Sin}[f\,x]+\right.$$
$$c^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]\left(\frac{3}{8}\mathrm{Cos}[2\,e]-\frac{3}{8}\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\mathrm{Sin}[f\,x]+$$
$$\mathrm{Sec}[e+f\,x]^2\left(\frac{1}{4}c^2\,\mathrm{Cos}[2\,e]-\frac{1}{4}\mathrm{i}\,c^2\,\mathrm{Sin}[2\,e]\right)\mathrm{Tan}[e]+$$
$$\left.\left(\frac{3}{8}c^2\,\mathrm{Cos}[2\,e]-\frac{3}{8}\mathrm{i}\,c^2\,\mathrm{Sin}[2\,e]\right)\mathrm{Tan}[e]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}$$

Problem 1012: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{5/2}}{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 43 leaves, 2 steps):

$$\frac{\mathrm{i}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{5/2}}{5\,f\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}}$$

Result (type 3, 90 leaves):

$$-\left(\left(\mathrm{i}\,c^2\,\mathrm{Sec}[e+f\,x]^2\,(\mathrm{Cos}[2\,(e+f\,x)]-\mathrm{i}\,\mathrm{Sin}[2\,(e+f\,x)])\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}\right)\Big/\left(5\,a^2\,f\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])^2\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\right)\right)$$

Problem 1027: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{3/2}}{(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 43 leaves, 2 steps):

$$-\frac{\mathrm{i}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{3/2}}{3\,f\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}$$

Result (type 3, 87 leaves):

$$\frac{1}{3\,c^2\,f}a\,\mathrm{Cos}[e+f\,x]\,(\mathrm{Cos}[f\,x]-\mathrm{i}\,\mathrm{Sin}[f\,x])$$
$$(-\mathrm{i}\,\mathrm{Cos}[3\,e+4\,f\,x]+\mathrm{Sin}[3\,e+4\,f\,x])\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}$$

Problem 1036: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a \operatorname{Tan}[e + f x])^{5/2}}{(c - i\, c \operatorname{Tan}[e + f x])^{5/2}}\, dx$$

Optimal (type 3, 43 leaves, 2 steps):

$$-\frac{i\, (a + i\, a \operatorname{Tan}[e + f x])^{5/2}}{5 f\, (c - i\, c \operatorname{Tan}[e + f x])^{5/2}}$$

Result (type 3, 91 leaves):

$$\left(a^2 \operatorname{Cos}[e + f x]\, (-i \operatorname{Cos}[5 e + 7 f x] + \operatorname{Sin}[5 e + 7 f x])\, \sqrt{a + i\, a \operatorname{Tan}[e + f x]}\, \sqrt{c - i\, c \operatorname{Tan}[e + f x]}\right) \Big/ \left(5 c^3 f\, (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^2\right)$$

Problem 1047: Unable to integrate problem.

$$\int \frac{(c - i\, c \operatorname{Tan}[e + f x])^n}{a + i\, a \operatorname{Tan}[e + f x]}\, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$\frac{1}{4 a f n}\, i \operatorname{Hypergeometric2F1}\left[2, n, 1 + n, \frac{1}{2}\, (1 - i \operatorname{Tan}[e + f x])\right]\, (c - i\, c \operatorname{Tan}[e + f x])^n$$

Result (type 8, 33 leaves):

$$\int \frac{(c - i\, c \operatorname{Tan}[e + f x])^n}{a + i\, a \operatorname{Tan}[e + f x]}\, dx$$

Problem 1048: Attempted integration timed out after 120 seconds.

$$\int \frac{(c - i\, c \operatorname{Tan}[e + f x])^n}{(a + i\, a \operatorname{Tan}[e + f x])^2}\, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$\frac{1}{8 a^2 f n}\, i \operatorname{Hypergeometric2F1}\left[3, n, 1 + n, \frac{1}{2}\, (1 - i \operatorname{Tan}[e + f x])\right]\, (c - i\, c \operatorname{Tan}[e + f x])^n$$

Result (type 1, 1 leaves):

???

Problem 1049: Attempted integration timed out after 120 seconds.

$$\int \frac{(c - i\, c \operatorname{Tan}[e + f x])^n}{(a + i\, a \operatorname{Tan}[e + f x])^3}\, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$\frac{1}{16 a^3 f n} i \text{Hypergeometric2F1}\left[4, n, 1+n, \frac{1}{2} (1 - i \text{Tan}[e+f x])\right] (c - i c \text{Tan}[e+f x])^n$$

Result (type 1, 1 leaves):

???

Problem 1050: Result more than twice size of optimal antiderivative.

$$\int (a + i a \text{Tan}[e+f x])^m (c - i c \text{Tan}[e+f x])^n \, dx$$

Optimal (type 5, 66 leaves, 3 steps):

$$\frac{1}{2 f n} i \text{Hypergeometric2F1}\left[1, m+n, 1+n, \frac{1}{2} (1 - i \text{Tan}[e+f x])\right] (a + i a \text{Tan}[e+f x])^m (c - i c \text{Tan}[e+f x])^n$$

Result (type 5, 154 leaves):

$$-\frac{1}{f m} i\, 2^{-1+m+n} \left(e^{i f x}\right)^m \left(\frac{c}{1+e^{2 i (e+f x)}}\right)^n \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^m \left(1+e^{2 i (e+f x)}\right)^{m+n} \text{Hypergeometric2F1}\left[m, m+n, 1+m, -e^{2 i (e+f x)}\right] \text{Sec}[e+f x]^{-m} (\text{Cos}[f x] + i \text{Sin}[f x])^{-m} (a + i a \text{Tan}[e+f x])^m$$

Problem 1051: Attempted integration timed out after 120 seconds.

$$\int (a + i a \text{Tan}[e+f x])^m (c - i c \text{Tan}[e+f x])^4 \, dx$$

Optimal (type 3, 134 leaves, 4 steps):

$$-\frac{8 i c^4 (a + i a \text{Tan}[e+f x])^m}{f m} + \frac{12 i c^4 (a + i a \text{Tan}[e+f x])^{1+m}}{a f (1+m)} - \frac{6 i c^4 (a + i a \text{Tan}[e+f x])^{2+m}}{a^2 f (2+m)} + \frac{i c^4 (a + i a \text{Tan}[e+f x])^{3+m}}{a^3 f (3+m)}$$

Result (type 1, 1 leaves):

???

Problem 1052: Attempted integration timed out after 120 seconds.

$$\int (a + i a \text{Tan}[e+f x])^m (c - i c \text{Tan}[e+f x])^3 \, dx$$

Optimal (type 3, 99 leaves, 4 steps):

$$-\frac{4 i c^3 (a + i a \text{Tan}[e+f x])^m}{f m} + \frac{4 i c^3 (a + i a \text{Tan}[e+f x])^{1+m}}{a f (1+m)} - \frac{i c^3 (a + i a \text{Tan}[e+f x])^{2+m}}{a^2 f (2+m)}$$

Result (type 1, 1 leaves):

???

Problem 1053: Attempted integration timed out after 120 seconds.

$$\int (a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x])^2 \, dx$$

Optimal (type 3, 64 leaves, 4 steps):

$$-\frac{2 i c^2 (a + i a \operatorname{Tan}[e + f x])^m}{f m} + \frac{i c^2 (a + i a \operatorname{Tan}[e + f x])^{1+m}}{a f (1 + m)}$$

Result (type 1, 1 leaves):

???

Problem 1054: Result more than twice size of optimal antiderivative.

$$\int (a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x]) \, dx$$

Optimal (type 3, 26 leaves, 3 steps):

$$-\frac{i c (a + i a \operatorname{Tan}[e + f x])^m}{f m}$$

Result (type 3, 95 leaves):

$$-\frac{1}{f m} i 2^m c \left(e^{i f x}\right)^m \left(\frac{e^{i (e+f x)}}{1 + e^{2 i (e+f x)}}\right)^m \operatorname{Sec}[e + f x]^{-m} (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^{-m} (a + i a \operatorname{Tan}[e + f x])^m$$

Problem 1055: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{c - i c \operatorname{Tan}[e + f x]} \, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$-\frac{1}{4 c f m} i \operatorname{Hypergeometric2F1}\left[2, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m$$

Result (type 5, 177 leaves):

$$-\frac{1}{c f m (1 + m)} i 2^{-2+m} \left(e^{i f x}\right)^m \left(\frac{e^{i (e+f x)}}{1 + e^{2 i (e+f x)}}\right)^m \left(1 + e^{2 i (e+f x)}\right)^m \left((1 + m) \operatorname{Hypergeometric2F1}\left[m, m, 1 + m, -e^{2 i (e+f x)}\right] + e^{2 i (e+f x)} m \operatorname{Hypergeometric2F1}\left[m, 1 + m, 2 + m, -e^{2 i (e+f x)}\right]\right) \operatorname{Sec}[e + f x]^{-m} (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^{-m} (a + i a \operatorname{Tan}[e + f x])^m$$

Problem 1056: Attempted integration timed out after 120 seconds.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c - i c \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$-\frac{1}{8 c^2 f m} i \text{Hypergeometric2F1}\left[3, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m$$

Result (type 1, 1 leaves):

???

Problem 1057: Attempted integration timed out after 120 seconds.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c - i c \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$-\frac{1}{16 c^3 f m} i \text{Hypergeometric2F1}\left[4, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m$$

Result (type 1, 1 leaves):

???

Problem 1058: Attempted integration timed out after 120 seconds.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c - i c \operatorname{Tan}[e + f x])^4} \, dx$$

Optimal (type 5, 52 leaves, 3 steps):

$$-\frac{1}{32 c^4 f m} i \text{Hypergeometric2F1}\left[5, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m$$

Result (type 1, 1 leaves):

???

Problem 1059: Attempted integration timed out after 120 seconds.

$$\int (a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x])^{5/2} \, dx$$

Optimal (type 5, 67 leaves, 3 steps):

$$\frac{1}{5 f} i \text{Hypergeometric2F1}\left[1, \frac{5}{2} + m, \frac{7}{2}, \frac{1}{2} (1 - i \operatorname{Tan}[e + f x])\right]$$
$$(a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x])^{5/2}$$

Result (type 1, 1 leaves):

???

Problem 1060: Result more than twice size of optimal antiderivative.

$$\int (a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x])^{3/2} \, dx$$

Optimal (type 5, 67 leaves, 3 steps):

$$\frac{1}{3 f} i \operatorname{Hypergeometric2F1}\left[1, \frac{3}{2} + m, \frac{5}{2}, \frac{1}{2} (1 - i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m (c - i c \operatorname{Tan}[e + f x])^{3/2}$$

Result (type 5, 161 leaves):

$$-\frac{1}{f m} i 2^{\frac{1}{2}+m} \left(e^{i f x}\right)^m \left(\frac{c}{1 + e^{2 i (e+f x)}}\right)^{3/2} \left(\frac{e^{i (e+f x)}}{1 + e^{2 i (e+f x)}}\right)^m \left(1 + e^{2 i (e+f x)}\right)^{\frac{3}{2}+m} \operatorname{Hypergeometric2F1}\left[m, \frac{3}{2} + m, 1 + m, -e^{2 i (e+f x)}\right] \operatorname{Sec}[e + f x]^{-m} (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^{-m} (a + i a \operatorname{Tan}[e + f x])^m$$

Problem 1061: Result more than twice size of optimal antiderivative.

$$\int (a + i a \operatorname{Tan}[e + f x])^m \sqrt{c - i c \operatorname{Tan}[e + f x]} \, dx$$

Optimal (type 5, 65 leaves, 3 steps):

$$\frac{1}{f} i \operatorname{Hypergeometric2F1}\left[1, \frac{1}{2} + m, \frac{3}{2}, \frac{1}{2} (1 - i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m \sqrt{c - i c \operatorname{Tan}[e + f x]}$$

Result (type 5, 161 leaves):

$$-\frac{1}{f m} i 2^{-\frac{1}{2}+m} \left(e^{i f x}\right)^m \sqrt{\frac{c}{1 + e^{2 i (e+f x)}}} \left(\frac{e^{i (e+f x)}}{1 + e^{2 i (e+f x)}}\right)^m \left(1 + e^{2 i (e+f x)}\right)^{\frac{1}{2}+m} \operatorname{Hypergeometric2F1}\left[m, \frac{1}{2} + m, 1 + m, -e^{2 i (e+f x)}\right] \operatorname{Sec}[e + f x]^{-m} (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^{-m} (a + i a \operatorname{Tan}[e + f x])^m$$

Problem 1062: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{\sqrt{c - i c \operatorname{Tan}[e + f x]}} \, dx$$

Optimal (type 5, 65 leaves, 3 steps):

$$-\left(\left(i\,\text{Hypergeometric2F1}\left[1,-\frac{1}{2}+m,\frac{1}{2},\frac{1}{2}\left(1-i\,\text{Tan}[e+f\,x]\right)\right]\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m\right)\Big/\left(f\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}\right)\right)$$

Result (type 5, 161 leaves):

$$-\frac{1}{\sqrt{\frac{c}{1+e^{2\,i\,(e+f\,x)}}}\;f\,m}\,i\,2^{-\frac{3}{2}+m}\left(e^{i\,f\,x}\right)^m\left(\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}\right)^m\left(1+e^{2\,i\,(e+f\,x)}\right)^{-\frac{1}{2}+m}\text{Hypergeometric2F1}\left[-\frac{1}{2}+m,m,1+m,-e^{2\,i\,(e+f\,x)}\right]\text{Sec}[e+f\,x]^{-m}\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^{-m}\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m$$

Problem 1063: Attempted integration timed out after 120 seconds.

$$\int\frac{\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m}{\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^{3/2}}\,dx$$

Optimal (type 5, 67 leaves, 3 steps):

$$-\left(\left(i\,\text{Hypergeometric2F1}\left[1,-\frac{3}{2}+m,-\frac{1}{2},\frac{1}{2}\left(1-i\,\text{Tan}[e+f\,x]\right)\right]\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m\right)\Big/\left(3\,f\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^{3/2}\right)\right)$$

Result (type 1, 1 leaves):

???

Problem 1064: Attempted integration timed out after 120 seconds.

$$\int\frac{\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m}{\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 5, 67 leaves, 3 steps):

$$-\left(\left(i\,\text{Hypergeometric2F1}\left[1,-\frac{5}{2}+m,-\frac{3}{2},\frac{1}{2}\left(1-i\,\text{Tan}[e+f\,x]\right)\right]\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^m\right)\Big/\left(5\,f\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^{5/2}\right)\right)$$

Result (type 1, 1 leaves):

???

Problem 1065: Result more than twice size of optimal antiderivative.

$$\int\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)dx$$

Optimal (type 3, 110 leaves, 4 steps):

$$4 a^3 (c - i d) x - \frac{4 a^3 (i c + d) \operatorname{Log}[\operatorname{Cos}[e + f x]]}{f} - \frac{2 a^3 (c - i d) \operatorname{Tan}[e + f x]}{f} + \frac{a (i c + d) (a + i a \operatorname{Tan}[e + f x])^2}{2 f} + \frac{d (a + i a \operatorname{Tan}[e + f x])^3}{3 f}$$

Result (type 3, 883 leaves):

$$\left(\operatorname{Cos}[e + f x]^4 \left(c \operatorname{Cos}\left[\frac{3 e}{2}\right] - i d \operatorname{Cos}\left[\frac{3 e}{2}\right] - i c \operatorname{Sin}\left[\frac{3 e}{2}\right] - d \operatorname{Sin}\left[\frac{3 e}{2}\right]\right) \left(-2 i \operatorname{Cos}\left[\frac{3 e}{2}\right] \operatorname{Log}\left[\operatorname{Cos}[e + f x]^2\right] - 2 \operatorname{Log}\left[\operatorname{Cos}[e + f x]^2\right] \operatorname{Sin}\left[\frac{3 e}{2}\right]\right) (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])\right) \Big/ \left(f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right) +$$
$$\left(\operatorname{Cos}[e + f x]^2 (3 c \operatorname{Cos}[e] - 9 i d \operatorname{Cos}[e] + 2 d \operatorname{Sin}[e]) \left(-\frac{1}{6} i \operatorname{Cos}[3 e] - \frac{1}{6} \operatorname{Sin}[3 e]\right) (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right] - \operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right] + \operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right) +$$
$$\left((c - i d) \operatorname{Cos}[e + f x]^4 (4 f x \operatorname{Cos}[3 e] - 4 i f x \operatorname{Sin}[3 e]) (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])\right) \Big/ \left(f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right) -$$
$$\left(i d \operatorname{Cos}[e + f x] \left(\frac{1}{3} \operatorname{Cos}[3 e] - \frac{1}{3} i \operatorname{Sin}[3 e]\right) \operatorname{Sin}[f x] (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right] - \operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right] + \operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right) +$$
$$\left(\operatorname{Cos}[e + f x]^3 \left(\frac{1}{3} \operatorname{Cos}[3 e] - \frac{1}{3} i \operatorname{Sin}[3 e]\right) (-9 c \operatorname{Sin}[f x] + 13 i d \operatorname{Sin}[f x]) (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right] - \operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right] + \operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right) +$$
$$\frac{1}{(\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])} x \operatorname{Cos}[e + f x]^4 \left(-2 c \operatorname{Cos}[e] + 2 i d \operatorname{Cos}[e] + 2 c \operatorname{Cos}[e]^3 - 2 i d \operatorname{Cos}[e]^3 + 4 i c \operatorname{Sin}[e] + 4 d \operatorname{Sin}[e] - 8 i c \operatorname{Cos}[e]^2 \operatorname{Sin}[e] - 8 d \operatorname{Cos}[e]^2 \operatorname{Sin}[e] - 12 c \operatorname{Cos}[e] \operatorname{Sin}[e]^2 + 12 i d \operatorname{Cos}[e] \operatorname{Sin}[e]^2 + 8 i c \operatorname{Sin}[e]^3 + 8 d \operatorname{Sin}[e]^3 + 2 c \operatorname{Sin}[e] \operatorname{Tan}[e] - 2 i d \operatorname{Sin}[e] \operatorname{Tan}[e] + 2 c \operatorname{Sin}[e]^3 \operatorname{Tan}[e] - 2 i d \operatorname{Sin}[e]^3 \operatorname{Tan}[e] + i (c - i d) (4 \operatorname{Cos}[3 e] - 4 i \operatorname{Sin}[3 e]) \operatorname{Tan}[e]\right) (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])$$

Problem 1066: Result more than twice size of optimal antiderivative.

$$\int (a + i a \operatorname{Tan}[e + f x])^2 (c + d \operatorname{Tan}[e + f x]) \, dx$$

Optimal (type 3, 80 leaves, 3 steps):

$$2 a^2 (c - i d) x - \frac{2 a^2 (i c + d) \text{Log}[\text{Cos}[e + f x]]}{f} - \frac{a^2 (c - i d) \text{Tan}[e + f x]}{f} + \frac{d (a + i a \text{Tan}[e + f x])^2}{2 f}$$

Result (type 3, 263 leaves):

$$\frac{1}{4 f (\text{Cos}[f x] + i \text{Sin}[f x])^2} a^2 \text{Sec}[e] \text{Sec}[e + f x]^2 (\text{Cos}[2 f x] + i \text{Sin}[2 f x]) \left(-8 (c - i d) \text{ArcTan}[\text{Tan}[3 e + f x]] \text{Cos}[e] \text{Cos}[e + f x]^2 - i \left(4 i c f x \text{Cos}[3 e + 2 f x] + 4 d f x \text{Cos}[3 e + 2 f x] + (i c + d) \text{Cos}[e + 2 f x] \left(4 f x - i \text{Log}\left[\text{Cos}[e + f x]^2\right]\right) + c \text{Cos}[3 e + 2 f x] \text{Log}\left[\text{Cos}[e + f x]^2\right] - i d \text{Cos}[3 e + 2 f x] \text{Log}\left[\text{Cos}[e + f x]^2\right] + 2 \text{Cos}[e] \left(-i d + 4 i c f x + 4 d f x + (c - i d) \text{Log}\left[\text{Cos}[e + f x]^2\right]\right) + 2 i c \text{Sin}[e] + 4 d \text{Sin}[e] - 2 i c \text{Sin}[e + 2 f x] - 4 d \text{Sin}[e + 2 f x]\right)\right)$$

Problem 1068: Result more than twice size of optimal antiderivative.

$$\int \frac{c + d \text{Tan}[e + f x]}{a + i a \text{Tan}[e + f x]} \, dx$$

Optimal (type 3, 47 leaves, 2 steps):

$$\frac{(c - i d) x}{2 a} + \frac{i c - d}{2 f (a + i a \text{Tan}[e + f x])}$$

Result (type 3, 102 leaves):

$$\left(\text{Cos}[e + f x] (c + d \text{Tan}[e + f x]) \left(c - 2 i c f x + d (i - 2 f x) + (d - 2 i d f x + c (-i + 2 f x)) \text{Tan}[e + f x]\right)\right) \Big/ \left(4 a f (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) (-i + \text{Tan}[e + f x])\right)$$

Problem 1071: Result more than twice size of optimal antiderivative.

$$\int (a + i a \text{Tan}[e + f x])^3 (c + d \text{Tan}[e + f x])^2 \, dx$$

Optimal (type 3, 153 leaves, 5 steps):

$$4 a^3 (c - i d)^2 x - \frac{4 i a^3 (c - i d)^2 \text{Log}[\text{Cos}[e + f x]]}{f} - \frac{2 a^3 (c - i d)^2 \text{Tan}[e + f x]}{f} + \frac{i a (c - i d)^2 (a + i a \text{Tan}[e + f x])^2}{2 f} + \frac{2 c d (a + i a \text{Tan}[e + f x])^3}{3 f} - \frac{i d^2 (a + i a \text{Tan}[e + f x])^4}{4 a f}$$

Result (type 3, 948 leaves):

$$\Big(\text{Cos}[e+f x]^3 \left(c^2 \text{Cos}\left[\frac{3 e}{2}\right]-2 i c d \text{Cos}\left[\frac{3 e}{2}\right]-d^2 \text{Cos}\left[\frac{3 e}{2}\right]-i c^2 \text{Sin}\left[\frac{3 e}{2}\right]-2 c d \text{Sin}\left[\frac{3 e}{2}\right]+i d^2 \text{Sin}\left[\frac{3 e}{2}\right]\right) \left(-2 i \text{Cos}\left[\frac{3 e}{2}\right] \text{Log}\left[\text{Cos}[e+f x]^2\right]-2 \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}\left[\frac{3 e}{2}\right]\right) (a+i a \text{Tan}[e+f x])^3\Big) \Big/ \left(f (\text{Cos}[f x]+i \text{Sin}[f x])^3\right)+$$

$$\Big(\text{Cos}[e+f x] \left(3 c^2 \text{Cos}[e]-18 i c d \text{Cos}[e]-15 d^2 \text{Cos}[e]+4 c d \text{Sin}[e]-6 i d^2 \text{Sin}[e]\right) \left(-\frac{1}{6} i \text{Cos}[3 e]-\frac{1}{6} \text{Sin}[3 e]\right) (a+i a \text{Tan}[e+f x])^3\Big) \Big/ \left(f \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3\right)+$$

$$\frac{\text{Sec}[e+f x] \left(-\frac{1}{4} i d^2 \text{Cos}[3 e]-\frac{1}{4} d^2 \text{Sin}[3 e]\right) (a+i a \text{Tan}[e+f x])^3}{f (\text{Cos}[f x]+i \text{Sin}[f x])^3}+$$

$$\left((c-i d)^2 \text{Cos}[e+f x]^3 (4 f x \text{Cos}[3 e]-4 i f x \text{Sin}[3 e]) (a+i a \text{Tan}[e+f x])^3\right) \Big/ \left(f (\text{Cos}[f x]+i \text{Sin}[f x])^3\right)+$$

$$\left(\left(\frac{1}{3} \text{Cos}[3 e]-\frac{1}{3} i \text{Sin}[3 e]\right) \left(-2 i c d \text{Sin}[f x]-3 d^2 \text{Sin}[f x]\right) (a+i a \text{Tan}[e+f x])^3\right) \Big/ \left(f \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3\right)+$$

$$\Big(\text{Cos}[e+f x]^2 \left(\frac{1}{3} \text{Cos}[3 e]-\frac{1}{3} i \text{Sin}[3 e]\right) \left(-9 c^2 \text{Sin}[f x]+26 i c d \text{Sin}[f x]+15 d^2 \text{Sin}[f x]\right) (a+i a \text{Tan}[e+f x])^3\Big) \Big/ \left(f \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3\right)+\frac{1}{(\text{Cos}[f x]+i \text{Sin}[f x])^3}$$

$$x \text{Cos}[e+f x]^3 \Big(-2 c^2 \text{Cos}[e]+4 i c d \text{Cos}[e]+2 d^2 \text{Cos}[e]+2 c^2 \text{Cos}[e]^3-4 i c d \text{Cos}[e]^3- 2 d^2 \text{Cos}[e]^3+4 i c^2 \text{Sin}[e]+8 c d \text{Sin}[e]-4 i d^2 \text{Sin}[e]-8 i c^2 \text{Cos}[e]^2 \text{Sin}[e]- 16 c d \text{Cos}[e]^2 \text{Sin}[e]+8 i d^2 \text{Cos}[e]^2 \text{Sin}[e]-12 c^2 \text{Cos}[e] \text{Sin}[e]^2+24 i c d \text{Cos}[e] \text{Sin}[e]^2+ 12 d^2 \text{Cos}[e] \text{Sin}[e]^2+8 i c^2 \text{Sin}[e]^3+16 c d \text{Sin}[e]^3-8 i d^2 \text{Sin}[e]^3+2 c^2 \text{Sin}[e] \text{Tan}[e]- 4 i c d \text{Sin}[e] \text{Tan}[e]-2 d^2 \text{Sin}[e] \text{Tan}[e]+2 c^2 \text{Sin}[e]^3 \text{Tan}[e]-4 i c d \text{Sin}[e]^3 \text{Tan}[e]- 2 d^2 \text{Sin}[e]^3 \text{Tan}[e]+i (c-i d)^2 (4 \text{Cos}[3 e]-4 i \text{Sin}[3 e]) \text{Tan}[e]\Big) (a+i a \text{Tan}[e+f x])^3$$

Problem 1072: Result more than twice size of optimal antiderivative.

$$\int (a+i a \text{Tan}[e+f x])^2 (c+d \text{Tan}[e+f x])^2 \, dx$$

Optimal (type 3, 116 leaves, 4 steps):

$$2 a^2 (c-i d)^2 x-\frac{2 i a^2 (c-i d)^2 \text{Log}[\text{Cos}[e+f x]]}{f}-\frac{a^2 (c-i d)^2 \text{Tan}[e+f x]}{f}+\frac{c d (a+i a \text{Tan}[e+f x])^2}{f}-\frac{i d^2 (a+i a \text{Tan}[e+f x])^3}{3 a f}$$

Result (type 3, 261 leaves):

$$\frac{1}{f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^2}\Big((c-i\,d)^2\,\mathrm{Cos}[e+f\,x]^2\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\,(-i\,\mathrm{Cos}[2\,e]-\mathrm{Sin}[2\,e])+4\,(c-i\,d)^2\,f\,x\,\mathrm{Cos}[e+f\,x]^2\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])-2\,(c-i\,d)^2\,\mathrm{ArcTan}[\mathrm{Tan}[3\,e+f\,x]]\,\mathrm{Cos}[e+f\,x]^2\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])-\frac{1}{3}\,(3\,c^2-12\,i\,c\,d-7\,d^2)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sec}[e]\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])\,\mathrm{Sin}[f\,x]-\frac{1}{3}\,d^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])\,\mathrm{Sin}[f\,x]-\frac{1}{3}\,d\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])\,(3\,c-3\,i\,d+d\,\mathrm{Tan}[e])\Big)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^2$$

Problem 1073: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\,dx$$

Optimal (type 3, 78 leaves, 3 steps):

$$a\,(c-i\,d)^2\,x-\frac{i\,a\,(c-i\,d)^2\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{f}+\frac{a\,d\,(i\,c+d)\,\mathrm{Tan}[e+f\,x]}{f}+\frac{i\,a\,(c+d\,\mathrm{Tan}[e+f\,x])^2}{2\,f}$$

Result (type 3, 175 leaves):

$$\frac{1}{2\,f}\,(\mathrm{Cos}[f\,x]-i\,\mathrm{Sin}[f\,x])\Big(4\,(c-i\,d)^2\,f\,x\,\mathrm{Cos}[e+f\,x]\,(\mathrm{Cos}[e]-i\,\mathrm{Sin}[e])-2\,(c-i\,d)^2\,\mathrm{ArcTan}[\mathrm{Tan}[2\,e+f\,x]]\,\mathrm{Cos}[e+f\,x]\,(\mathrm{Cos}[e]-i\,\mathrm{Sin}[e])-i\,(c-i\,d)^2\,\mathrm{Cos}[e+f\,x]\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\,(\mathrm{Cos}[e]-i\,\mathrm{Sin}[e])+d^2\,\mathrm{Sec}[e+f\,x]\,(i\,\mathrm{Cos}[e]+\mathrm{Sin}[e])+2\,(2\,c-i\,d)\,d\,\mathrm{Sin}[f\,x]\,(i+\mathrm{Tan}[e])\Big)\,(a+i\,a\,\mathrm{Tan}[e+f\,x])$$

Problem 1074: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Tan}[e+f\,x])^2}{a+i\,a\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 75 leaves, 3 steps):

$$\frac{(c^2-2\,i\,c\,d+d^2)\,x}{2\,a}+\frac{i\,d^2\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{a\,f}+\frac{i\,(c+i\,d)^2}{2\,f\,(a+i\,a\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 155 leaves):

$$\Big(c^2+2\,i\,c\,d-d^2-2\,i\,c^2\,f\,x-4\,c\,d\,f\,x+2\,i\,d^2\,f\,x+2\,d^2\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]+\big(d^2\,(i-2\,f\,x)+c^2\,(-i+2\,f\,x)+2\,c\,(d-2\,i\,d\,f\,x)+2\,i\,d^2\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\big)\,\mathrm{Tan}[e+f\,x]+4\,d^2\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,(-i+\mathrm{Tan}[e+f\,x])\Big)\Big/\big(4\,a\,f\,(-i+\mathrm{Tan}[e+f\,x])\big)$$

Problem 1077: Result more than twice size of optimal antiderivative.

$$\int (a + i\, a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])^3 \, dx$$

Optimal (type 3, 190 leaves, 6 steps):

$$4 a^3 (c - i\, d)^3 x + \frac{4 a^3 (i\, c + d)^3 \operatorname{Log}[\operatorname{Cos}[e + f x]]}{f} + \frac{4 i\, a^3 (c - i\, d)^2 d \operatorname{Tan}[e + f x]}{f} + \frac{2 a^3 (i\, c + d) (c + d \operatorname{Tan}[e + f x])^2}{f} + \frac{4 i\, a^3 (c + d \operatorname{Tan}[e + f x])^3}{3 f} + \frac{a^3 (i\, c - 11 d) (c + d \operatorname{Tan}[e + f x])^4}{20 d^2 f} - \frac{(a^3 + i\, a^3 \operatorname{Tan}[e + f x]) (c + d \operatorname{Tan}[e + f x])^4}{5 d f}$$

Result (type 3, 1564 leaves):

$$\left(\text{Cos}[e+f x]^3 \left(-\mathrm{i}\, c^3 \text{Cos}\left[\frac{3 e}{2}\right]-3 c^2 d \text{Cos}\left[\frac{3 e}{2}\right]+3 \mathrm{i}\, c d^2 \text{Cos}\left[\frac{3 e}{2}\right]+ d^3 \text{Cos}\left[\frac{3 e}{2}\right]-c^3 \text{Sin}\left[\frac{3 e}{2}\right]+3 \mathrm{i}\, c^2 d \text{Sin}\left[\frac{3 e}{2}\right]+3 c d^2 \text{Sin}\left[\frac{3 e}{2}\right]-\mathrm{i}\, d^3 \text{Sin}\left[\frac{3 e}{2}\right]\right) \left(2 \text{Cos}\left[\frac{3 e}{2}\right] \text{Log}\left[\text{Cos}[e+f x]^2\right]-2 \mathrm{i}\, \text{Log}\left[\text{Cos}[e+f x]^2\right] \text{Sin}\left[\frac{3 e}{2}\right]\right) (a+\mathrm{i}\, a \text{Tan}[e+f x])^3\right) \Big/ \left(f (\text{Cos}[f x]+\mathrm{i}\, \text{Sin}[f x])^3\right)+\frac{1}{f (\text{Cos}[f x]+\mathrm{i}\, \text{Sin}[f x])^3}$$

$$\text{Sec}[e] \text{Sec}[e+f x]^2 \left(\frac{1}{240} \text{Cos}[3 e]-\frac{1}{240} \mathrm{i}\, \text{Sin}[3 e]\right)$$

$$\left(-45 \mathrm{i}\, c^3 \text{Cos}[f x]-405 c^2 d \text{Cos}[f x]+585 \mathrm{i}\, c d^2 \text{Cos}[f x]+225 d^3 \text{Cos}[f x]+ 300 c^3 f x \text{Cos}[f x]-900 \mathrm{i}\, c^2 d f x \text{Cos}[f x]-900 c d^2 f x \text{Cos}[f x]+300 \mathrm{i}\, d^3 f x \text{Cos}[f x]- 45 \mathrm{i}\, c^3 \text{Cos}[2 e+f x]-405 c^2 d \text{Cos}[2 e+f x]+585 \mathrm{i}\, c d^2 \text{Cos}[2 e+f x]+ 225 d^3 \text{Cos}[2 e+f x]+300 c^3 f x \text{Cos}[2 e+f x]-900 \mathrm{i}\, c^2 d f x \text{Cos}[2 e+f x]- 900 c d^2 f x \text{Cos}[2 e+f x]+300 \mathrm{i}\, d^3 f x \text{Cos}[2 e+f x]-15 \mathrm{i}\, c^3 \text{Cos}[2 e+3 f x]- 135 c^2 d \text{Cos}[2 e+3 f x]+225 \mathrm{i}\, c d^2 \text{Cos}[2 e+3 f x]+105 d^3 \text{Cos}[2 e+3 f x]+ 150 c^3 f x \text{Cos}[2 e+3 f x]-450 \mathrm{i}\, c^2 d f x \text{Cos}[2 e+3 f x]-450 c d^2 f x \text{Cos}[2 e+3 f x]+ 150 \mathrm{i}\, d^3 f x \text{Cos}[2 e+3 f x]-15 \mathrm{i}\, c^3 \text{Cos}[4 e+3 f x]-135 c^2 d \text{Cos}[4 e+3 f x]+ 225 \mathrm{i}\, c d^2 \text{Cos}[4 e+3 f x]+105 d^3 \text{Cos}[4 e+3 f x]+150 c^3 f x \text{Cos}[4 e+3 f x]- 450 \mathrm{i}\, c^2 d f x \text{Cos}[4 e+3 f x]-450 c d^2 f x \text{Cos}[4 e+3 f x]+150 \mathrm{i}\, d^3 f x \text{Cos}[4 e+3 f x]+ 30 c^3 f x \text{Cos}[4 e+5 f x]-90 \mathrm{i}\, c^2 d f x \text{Cos}[4 e+5 f x]-90 c d^2 f x \text{Cos}[4 e+5 f x]+ 30 \mathrm{i}\, d^3 f x \text{Cos}[4 e+5 f x]+30 c^3 f x \text{Cos}[6 e+5 f x]-90 \mathrm{i}\, c^2 d f x \text{Cos}[6 e+5 f x]- 90 c d^2 f x \text{Cos}[6 e+5 f x]+30 \mathrm{i}\, d^3 f x \text{Cos}[6 e+5 f x]-270 c^3 \text{Sin}[f x]+ 1140 \mathrm{i}\, c^2 d \text{Sin}[f x]+1260 c d^2 \text{Sin}[f x]-470 \mathrm{i}\, d^3 \text{Sin}[f x]+180 c^3 \text{Sin}[2 e+f x]- 810 \mathrm{i}\, c^2 d \text{Sin}[2 e+f x]-990 c d^2 \text{Sin}[2 e+f x]+360 \mathrm{i}\, d^3 \text{Sin}[2 e+f x]- 180 c^3 \text{Sin}[2 e+3 f x]+750 \mathrm{i}\, c^2 d \text{Sin}[2 e+3 f x]+810 c d^2 \text{Sin}[2 e+3 f x]- 280 \mathrm{i}\, d^3 \text{Sin}[2 e+3 f x]+45 c^3 \text{Sin}[4 e+3 f x]-225 \mathrm{i}\, c^2 d \text{Sin}[4 e+3 f x]- 315 c d^2 \text{Sin}[4 e+3 f x]+135 \mathrm{i}\, d^3 \text{Sin}[4 e+3 f x]-45 c^3 \text{Sin}[4 e+5 f x]+ 195 \mathrm{i}\, c^2 d \text{Sin}[4 e+5 f x]+225 c d^2 \text{Sin}[4 e+5 f x]-83 \mathrm{i}\, d^3 \text{Sin}[4 e+5 f x]\right)$$

$$(a+\mathrm{i}\, a \text{Tan}[e+f x])^3+\frac{1}{(\text{Cos}[f x]+\mathrm{i}\, \text{Sin}[f x])^3} x \text{Cos}[e+f x]^3$$

$$\left(-2 c^3 \text{Cos}[e]+6 \mathrm{i}\, c^2 d \text{Cos}[e]+6 c d^2 \text{Cos}[e]-2 \mathrm{i}\, d^3 \text{Cos}[e]+2 c^3 \text{Cos}[e]^3-6 \mathrm{i}\, c^2 d \text{Cos}[e]^3- 6 c d^2 \text{Cos}[e]^3+2 \mathrm{i}\, d^3 \text{Cos}[e]^3+4 \mathrm{i}\, c^3 \text{Sin}[e]+12 c^2 d \text{Sin}[e]-12 \mathrm{i}\, c d^2 \text{Sin}[e]- 4 d^3 \text{Sin}[e]-8 \mathrm{i}\, c^3 \text{Cos}[e]^2 \text{Sin}[e]-24 c^2 d \text{Cos}[e]^2 \text{Sin}[e]+24 \mathrm{i}\, c d^2 \text{Cos}[e]^2 \text{Sin}[e]+ 8 d^3 \text{Cos}[e]^2 \text{Sin}[e]-12 c^3 \text{Cos}[e] \text{Sin}[e]^2+36 \mathrm{i}\, c^2 d \text{Cos}[e] \text{Sin}[e]^2+36 c d^2 \text{Cos}[e] \text{Sin}[e]^2- 12 \mathrm{i}\, d^3 \text{Cos}[e] \text{Sin}[e]^2+8 \mathrm{i}\, c^3 \text{Sin}[e]^3+24 c^2 d \text{Sin}[e]^3-24 \mathrm{i}\, c d^2 \text{Sin}[e]^3- 8 d^3 \text{Sin}[e]^3+2 c^3 \text{Sin}[e] \text{Tan}[e]-6 \mathrm{i}\, c^2 d \text{Sin}[e] \text{Tan}[e]-6 c d^2 \text{Sin}[e] \text{Tan}[e]+ 2 \mathrm{i}\, d^3 \text{Sin}[e] \text{Tan}[e]+2 c^3 \text{Sin}[e]^3 \text{Tan}[e]-6 \mathrm{i}\, c^2 d \text{Sin}[e]^3 \text{Tan}[e]-6 c d^2 \text{Sin}[e]^3 \text{Tan}[e]+ 2 \mathrm{i}\, d^3 \text{Sin}[e]^3 \text{Tan}[e]+(-\mathrm{i}\, c-d)^3 (4 \text{Cos}[3 e]-4 \mathrm{i}\, \text{Sin}[3 e]) \text{Tan}[e]\right) (a+\mathrm{i}\, a \text{Tan}[e+f x])^3$$

Problem 1078: Result more than twice size of optimal antiderivative.

$$\int (a+\mathrm{i}\, a \text{Tan}[e+f x])^2 (c+d \text{Tan}[e+f x])^3 \, dx$$

Optimal (type 3, 141 leaves, 5 steps):

$$2 a^2 (c - i d)^3 x + \frac{2 a^2 (i c + d)^3 \text{Log}[\text{Cos}[e + f x]]}{f} + \frac{2 i a^2 (c - i d)^2 d \,\text{Tan}[e + f x]}{f} + \frac{a^2 (i c + d) (c + d \,\text{Tan}[e + f x])^2}{f} + \frac{2 i a^2 (c + d \,\text{Tan}[e + f x])^3}{3 f} - \frac{a^2 (c + d \,\text{Tan}[e + f x])^4}{4 d f}$$

Result (type 3, 1225 leaves):

$$\Big(\text{Cos}[e + f x]^2 \big(-i c^3 \text{Cos}[e] - 3 c^2 d \,\text{Cos}[e] + 3 i c d^2 \text{Cos}[e] + d^3 \text{Cos}[e] - c^3 \text{Sin}[e] + 3 i c^2 d \,\text{Sin}[e] + 3 c d^2 \text{Sin}[e] - i d^3 \text{Sin}[e]\big) \big(-2 i \,\text{ArcTan}[\text{Tan}[3 e + f x]] \,\text{Cos}[e] - 2 \,\text{ArcTan}[\text{Tan}[3 e + f x]] \,\text{Sin}[e]\big) (a + i a \,\text{Tan}[e + f x])^2\Big) \Big/ \Big(f (\text{Cos}[f x] + i \,\text{Sin}[f x])^2\Big) + \Big(\text{Cos}[e + f x]^2 \big(-i c^3 \text{Cos}[e] - 3 c^2 d \,\text{Cos}[e] + 3 i c d^2 \text{Cos}[e] + d^3 \text{Cos}[e] - c^3 \text{Sin}[e] + 3 i c^2 d \,\text{Sin}[e] + 3 c d^2 \text{Sin}[e] - i d^3 \text{Sin}[e]\big) \big(\text{Cos}[e] \,\text{Log}\big[\text{Cos}[e + f x]^2\big] - i \,\text{Log}\big[\text{Cos}[e + f x]^2\big] \,\text{Sin}[e]\big) (a + i a \,\text{Tan}[e + f x])^2\Big) \Big/ \Big(f (\text{Cos}[f x] + i \,\text{Sin}[f x])^2\Big) + \frac{1}{f (\text{Cos}[f x] + i \,\text{Sin}[f x])^2} \text{Sec}[e] \,\text{Sec}[e + f x]^2 \left(\frac{1}{24} \text{Cos}[2 e] - \frac{1}{24} i \,\text{Sin}[2 e]\right) \big(-18 c^2 d \,\text{Cos}[e] + 36 i c d^2 \text{Cos}[e] + 12 d^3 \text{Cos}[e] + 18 c^3 f x \,\text{Cos}[e] - 54 i c^2 d f x \,\text{Cos}[e] - 54 c d^2 f x \,\text{Cos}[e] + 18 i d^3 f x \,\text{Cos}[e] - 9 c^2 d \,\text{Cos}[e + 2 f x] + 18 i c d^2 \text{Cos}[e + 2 f x] + 9 d^3 \text{Cos}[e + 2 f x] + 12 c^3 f x \,\text{Cos}[e + 2 f x] - 36 i c^2 d f x \,\text{Cos}[e + 2 f x] - 36 c d^2 f x \,\text{Cos}[e + 2 f x] + 12 i d^3 f x \,\text{Cos}[e + 2 f x] - 9 c^2 d \,\text{Cos}[3 e + 2 f x] + 18 i c d^2 \text{Cos}[3 e + 2 f x] + 9 d^3 \text{Cos}[3 e + 2 f x] + 12 c^3 f x \,\text{Cos}[3 e + 2 f x] - 36 i c^2 d f x \,\text{Cos}[3 e + 2 f x] - 36 c d^2 f x \,\text{Cos}[3 e + 2 f x] + 12 i d^3 f x \,\text{Cos}[3 e + 2 f x] + 3 c^3 f x \,\text{Cos}[3 e + 4 f x] - 9 i c^2 d f x \,\text{Cos}[3 e + 4 f x] - 9 c d^2 f x \,\text{Cos}[3 e + 4 f x] + 3 i d^3 f x \,\text{Cos}[3 e + 4 f x] + 3 c^3 f x \,\text{Cos}[5 e + 4 f x] - 9 i c^2 d f x \,\text{Cos}[5 e + 4 f x] - 9 c d^2 f x \,\text{Cos}[5 e + 4 f x] + 3 i d^3 f x \,\text{Cos}[5 e + 4 f x] + 9 c^3 \text{Sin}[e] - 54 i c^2 d \,\text{Sin}[e] - 63 c d^2 \text{Sin}[e] + 24 i d^3 \text{Sin}[e] - 9 c^3 \text{Sin}[e + 2 f x] + 54 i c^2 d \,\text{Sin}[e + 2 f x] + 57 c d^2 \text{Sin}[e + 2 f x] - 20 i d^3 \text{Sin}[e + 2 f x] + 3 c^3 \text{Sin}[3 e + 2 f x] - 18 i c^2 d \,\text{Sin}[3 e + 2 f x] - 27 c d^2 \text{Sin}[3 e + 2 f x] + 12 i d^3 \text{Sin}[3 e + 2 f x] - 3 c^3 \text{Sin}[3 e + 4 f x] + 18 i c^2 d \,\text{Sin}[3 e + 4 f x] + 21 c d^2 \text{Sin}[3 e + 4 f x] - 8 i d^3 \text{Sin}[3 e + 4 f x]\big) (a + i a \,\text{Tan}[e + f x])^2 + \frac{1}{(\text{Cos}[f x] + i \,\text{Sin}[f x])^2} x \,\text{Cos}[e + f x]^2 \big(2 c^3 \text{Cos}[e]^2 - 6 i c^2 d \,\text{Cos}[e]^2 - 6 c d^2 \text{Cos}[e]^2 + 2 i d^3 \text{Cos}[e]^2 - 6 i c^3 \text{Cos}[e] \,\text{Sin}[e] - 18 c^2 d \,\text{Cos}[e] \,\text{Sin}[e] + 18 i c d^2 \text{Cos}[e] \,\text{Sin}[e] + 6 d^3 \text{Cos}[e] \,\text{Sin}[e] - 6 c^3 \text{Sin}[e]^2 + 18 i c^2 d \,\text{Sin}[e]^2 + 18 c d^2 \text{Sin}[e]^2 - 6 i d^3 \text{Sin}[e]^2 + 2 i c^3 \text{Sin}[e]^2 \text{Tan}[e] + 6 c^2 d \,\text{Sin}[e]^2 \text{Tan}[e] - 6 i c d^2 \text{Sin}[e]^2 \text{Tan}[e] - 2 d^3 \text{Sin}[e]^2 \text{Tan}[e] + (-i c - d)^3 (2 \,\text{Cos}[2 e] - 2 i \,\text{Sin}[2 e]) \,\text{Tan}[e]\big) (a + i a \,\text{Tan}[e + f x])^2$$

Problem 1079: Result more than twice size of optimal antiderivative.

$$\int (a + i a \,\text{Tan}[e + f x]) (c + d \,\text{Tan}[e + f x])^3 \, dx$$

Optimal (type 3, 107 leaves, 4 steps):

$$a\,(c-i\,d)^3\,x+\frac{a\,(i\,c+d)^3\,\text{Log}[\text{Cos}[e+f\,x]]}{f}+\frac{i\,a\,(c-i\,d)^2\,d\,\text{Tan}[e+f\,x]}{f}+\frac{a\,(i\,c+d)\,(c+d\,\text{Tan}[e+f\,x])^2}{2\,f}+\frac{i\,a\,(c+d\,\text{Tan}[e+f\,x])^3}{3\,f}$$

Result (type 3, 219 leaves):

$$\frac{1}{6\,f}(\text{Cos}[f\,x]-i\,\text{Sin}[f\,x])\Big(12\,(c-i\,d)^3\,f\,x\,\text{Cos}[e+f\,x]\,(\text{Cos}[e]-i\,\text{Sin}[e])-6\,(c-i\,d)^3\,\text{ArcTan}[\text{Tan}[2\,e+f\,x]]\,\text{Cos}[e+f\,x]\,(\text{Cos}[e]-i\,\text{Sin}[e])-3\,i\,(c-i\,d)^3\,\text{Cos}[e+f\,x]\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,(\text{Cos}[e]-i\,\text{Sin}[e])-2\,d\,(-9\,c^2+9\,i\,c\,d+4\,d^2)\,\text{Sin}[f\,x]\,(i+\text{Tan}[e])+2\,d^3\,\text{Sec}[e+f\,x]^2\,\text{Sin}[f\,x]\,(i+\text{Tan}[e])+d^2\,\text{Cos}[e]\,\text{Sec}[e+f\,x]\,(i+\text{Tan}[e])\,(9\,c-3\,i\,d+2\,d\,\text{Tan}[e])\Big)\,(a+i\,a\,\text{Tan}[e+f\,x])$$

Problem 1081: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^3}{(a+i\,a\,\text{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 136 leaves, 5 steps):

$$\frac{(c^3-3\,i\,c^2\,d-3\,c\,d^2-3\,i\,d^3)\,x}{4\,a^2}+\frac{d^3\,\text{Log}[\text{Cos}[e+f\,x]]}{a^2\,f}+\frac{(c+i\,d)^2\,(i\,c+3\,d)}{4\,a^2\,f\,(1+i\,\text{Tan}[e+f\,x])}+\frac{(i\,c-d)\,(c+d\,\text{Tan}[e+f\,x])^2}{4\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2}$$

Result (type 3, 305 leaves):

$$-\frac{1}{16\,a^2\,f\,(-i+\text{Tan}[e+f\,x])^2}\text{Sec}[e+f\,x]^2\,\Big(4\,i\,c^3+12\,i\,c\,d^2-8\,d^3+\text{Cos}[2\,(e+f\,x)]\,\big(3\,c^2\,d\,(-1-4\,i\,f\,x)+d^3\,(1+4\,i\,f\,x)+c^3\,(i+4\,f\,x)-3\,c\,d^2\,(i+4\,f\,x)+8\,d^3\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\big)+c^3\,\text{Sin}[2\,(e+f\,x)]+3\,i\,c^2\,d\,\text{Sin}[2\,(e+f\,x)]-3\,c\,d^2\,\text{Sin}[2\,(e+f\,x)]-i\,d^3\,\text{Sin}[2\,(e+f\,x)]+4\,i\,c^3\,f\,x\,\text{Sin}[2\,(e+f\,x)]+12\,c^2\,d\,f\,x\,\text{Sin}[2\,(e+f\,x)]-12\,i\,c\,d^2\,f\,x\,\text{Sin}[2\,(e+f\,x)]-4\,d^3\,f\,x\,\text{Sin}[2\,(e+f\,x)]+8\,i\,d^3\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[2\,(e+f\,x)]+16\,d^3\,\text{ArcTan}[\text{Tan}[f\,x]]\,(-i\,\text{Cos}[2\,(e+f\,x)]+\text{Sin}[2\,(e+f\,x)])\Big)$$

Problem 1083: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f\,x])^3}{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 115 leaves, 5 steps):

$$\frac{4 a^3 x}{c - i d} - \frac{a^3 (i c - 3 d) \text{Log}[\text{Cos}[e + f x]]}{d^2 f} - \frac{a^3 (c + i d)^2 \text{Log}[c \text{Cos}[e + f x] + d \text{Sin}[e + f x]]}{d^2 (i c + d) f} - \frac{a^3 + i a^3 \text{Tan}[e + f x]}{d f}$$

Result (type 3, 2264 leaves):

$$\left(\text{Cos}[e + f x]^2 \left(c^2 \text{Cos}\left[\frac{3 e}{2}\right] + 2 i c d \text{Cos}\left[\frac{3 e}{2}\right] - d^2 \text{Cos}\left[\frac{3 e}{2}\right] - i c^2 \text{Sin}\left[\frac{3 e}{2}\right] + 2 c d \text{Sin}\left[\frac{3 e}{2}\right] + i d^2 \text{Sin}\left[\frac{3 e}{2}\right]\right) \left(\frac{i \text{Cos}\left[\frac{3 e}{2}\right] \text{Log}\left[(c \text{Cos}[e + f x] + d \text{Sin}[e + f x])^2\right]}{2 d^2} + \frac{\text{Log}\left[(c \text{Cos}[e + f x] + d \text{Sin}[e + f x])^2\right] \text{Sin}\left[\frac{3 e}{2}\right]}{2 d^2}\right) (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) (a + i a \text{Tan}[e + f x])^3\right) \Big/ \left((c - i d) f (\text{Cos}[f x] + i \text{Sin}[f x])^3 (c + d \text{Tan}[e + f x])\right) +$$

$$\left(\text{Cos}[e + f x]^2 (4 f x \text{Cos}[3 e] - 4 i f x \text{Sin}[3 e]) (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) (a + i a \text{Tan}[e + f x])^3\right) \Big/ \left((c - i d) f (\text{Cos}[f x] + i \text{Sin}[f x])^3 (c + d \text{Tan}[e + f x])\right) +$$

$$\left((-i c + 3 d) \text{Cos}[e + f x]^2 \left(\frac{\text{Cos}[3 e] \text{Log}\left[\text{Cos}[e + f x]^2\right]}{2 d^2} - \frac{i \text{Log}\left[\text{Cos}[e + f x]^2\right] \text{Sin}[3 e]}{2 d^2}\right) (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) (a + i a \text{Tan}[e + f x])^3\right) \Big/ \left(f (\text{Cos}[f x] + i \text{Sin}[f x])^3 (c + d \text{Tan}[e + f x])\right) -$$

$$\left(i \text{Cos}[e + f x] \left(\frac{\text{Cos}[3 e]}{d} - \frac{i \text{Sin}[3 e]}{d}\right) \text{Sin}[f x] (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) (a + i a \text{Tan}[e + f x])^3\right) \Big/ \left(f \left(\text{Cos}\left[\frac{e}{2}\right] - \text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}\right] + \text{Sin}\left[\frac{e}{2}\right]\right) (\text{Cos}[f x] + i \text{Sin}[f x])^3 (c + d \text{Tan}[e + f x])\right) +$$

$$\frac{1}{(\text{Cos}[f x] + i \text{Sin}[f x])^3 (c + d \text{Tan}[e + f x])} x \text{Cos}[e + f x]^2 (c \text{Cos}[e + f x] + d \text{Sin}[e + f x]) \left(-\frac{c \text{Cos}[e]}{2 d^2} - \frac{3 i \text{Cos}[e]}{2 d} + \frac{c \text{Cos}[e]^3}{2 d^2} + \frac{3 i \text{Cos}[e]^3}{2 d} + \frac{i c \text{Sin}[e]}{d^2} - \frac{3 \text{Sin}[e]}{d} - \frac{2 i c \text{Cos}[e]^2 \text{Sin}[e]}{d^2} + \right.$$

$$\frac{6\,\text{Cos}[e]^2\,\text{Sin}[e]}{d} - \frac{3\,c\,\text{Cos}[e]\,\text{Sin}[e]^2}{d^2} - \frac{9\,i\,\text{Cos}[e]\,\text{Sin}[e]^2}{d} + \frac{2\,i\,c\,\text{Sin}[e]^3}{d^2} -$$

$$\frac{6\,\text{Sin}[e]^3}{d} + \frac{c\,\text{Cos}[e]^2}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{c^3\,\text{Cos}[e]^2}{2\,(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{i\,c^2\,\text{Cos}[e]^2}{2\,(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{i\,d\,\text{Cos}[e]^2}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{3\,c\,\text{Cos}[e]^4}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{c^3\,\text{Cos}[e]^4}{2\,(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{3\,i\,c^2\,\text{Cos}[e]^4}{2\,(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{i\,d\,\text{Cos}[e]^4}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{i\,c\,\text{Cos}[e]\,\text{Sin}[e]}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{i\,c^3\,\text{Cos}[e]\,\text{Sin}[e]}{(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{c^2\,\text{Cos}[e]\,\text{Sin}[e]}{(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{d\,\text{Cos}[e]\,\text{Sin}[e]}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{6\,i\,c\,\text{Cos}[e]^3\,\text{Sin}[e]}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{2\,i\,c^3\,\text{Cos}[e]^3\,\text{Sin}[e]}{(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{6\,c^2\,\text{Cos}[e]^3\,\text{Sin}[e]}{(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{2\,d\,\text{Cos}[e]^3\,\text{Sin}[e]}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{c\,\text{Sin}[e]^2}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{c^3\,\text{Sin}[e]^2}{2\,(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{i\,c^2\,\text{Sin}[e]^2}{2\,(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{i\,d\,\text{Sin}[e]^2}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{9\,c\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{3\,c^3\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{9\,i\,c^2\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{3\,i\,d\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{6\,i\,c\,\text{Cos}[e]\,\text{Sin}[e]^3}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{2\,i\,c^3\,\text{Cos}[e]\,\text{Sin}[e]^3}{(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{6\,c^2\,\text{Cos}[e]\,\text{Sin}[e]^3}{(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{2\,d\,\text{Cos}[e]\,\text{Sin}[e]^3}{(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\frac{3\,c\,\text{Sin}[e]^4}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} - \frac{c^3\,\text{Sin}[e]^4}{2\,(c - i\,d)\,d^2\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} -$$

$$\frac{3\,i\,c^2\,\text{Sin}[e]^4}{2\,(c - i\,d)\,d\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} + \frac{i\,d\,\text{Sin}[e]^4}{2\,(c - i\,d)\,(c\,\text{Cos}[e] + d\,\text{Sin}[e])} +$$

$$\Big(\big(-3\,c - i\,d - c\,\text{Cos}[2\,e] - i\,d\,\text{Cos}[2\,e] - i\,c\,\text{Sin}[2\,e] + d\,\text{Sin}[2\,e]\big)\,\big(\text{Cos}[3\,e] - i\,\text{Sin}[3\,e]\big)\Big) \Big/$$
$$\Big((c - i\,d)\,\big(c + i\,d + c\,\text{Cos}[2\,e] - i\,d\,\text{Cos}[2\,e] + i\,c\,\text{Sin}[2\,e] + d\,\text{Sin}[2\,e]\big)\Big) +$$

$$\frac{\big(-c + c\,\text{Cos}[2\,e] + i\,c\,\text{Sin}[2\,e]\big)\left(\frac{\text{Cos}[3\,e]}{d^2} - \frac{i\,\text{Sin}[3\,e]}{d^2}\right)}{1 + \text{Cos}[2\,e] + i\,\text{Sin}[2\,e]} +$$

$$\left(\big(c^3 - c^3\,\text{Cos}[2\,e] - i\,c^3\,\text{Sin}[2\,e]\big)\left(\frac{\text{Cos}[3\,e]}{d^2} - \frac{i\,\text{Sin}[3\,e]}{d^2}\right)\right) \Big/$$

$$\left(\left((c-i d)\,(c+i d+c \cos[2 e]-i d \cos[2 e]+i c \sin[2 e]+d \sin[2 e])\right)+\left(\left(-3 c^2+c^2 \cos[2 e]+i c^2 \sin[2 e]\right)\left(-\frac{i \cos[3 e]}{d}-\frac{\sin[3 e]}{d}\right)\right)\Big/\left((c-i d)\,(c+i d+c \cos[2 e]-i d \cos[2 e]+i c \sin[2 e]+d \sin[2 e])\right)+\frac{(-1+\cos[2 e]+i \sin[2 e])\left(\frac{3 i \cos[3 e]}{d}+\frac{3 \sin[3 e]}{d}\right)}{1+\cos[2 e]+i \sin[2 e]}+\frac{c \sin[e] \tan[e]}{2 d^2}+\frac{3 i \sin[e] \tan[e]}{2 d}+\frac{c \sin[e]^3 \tan[e]}{2 d^2}+\frac{3 i \sin[e]^3 \tan[e]}{2 d}\right)(a+i a \tan[e+f x])^3$$

Problem 1085: Result more than twice size of optimal antiderivative.

$$\int \frac{a+i a \tan[e+f x]}{c+d \tan[e+f x]}\,dx$$

Optimal (type 3, 45 leaves, 2 steps):

$$\frac{a x}{c-i d}+\frac{a \log[c \cos[e+f x]+d \sin[e+f x]]}{(i c+d) f}$$

Result (type 3, 95 leaves):

$$\frac{1}{2 c f-2 i d f}\left(4 a f x+2 a \arctan\left[\frac{d \cos[2 e+f x]-c \sin[2 e+f x]}{c \cos[2 e+f x]+d \sin[2 e+f x]}\right]-i a \log\left[(c \cos[e+f x]+d \sin[e+f x])^2\right]\right)$$

Problem 1087: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+i a \tan[e+f x])^2\,(c+d \tan[e+f x])}\,dx$$

Optimal (type 3, 174 leaves, 4 steps):

$$\frac{\left(c^3+3 i c^2 d-3 c d^2+3 i d^3\right) x}{4 a^2 (c-i d)(c+i d)^3}-\frac{d^3 \log[c \cos[e+f x]+d \sin[e+f x]]}{a^2 (c-i d)(c+i d)^3 f}+\frac{i c-3 d}{4 a^2 (c+i d)^2 f (1+i \tan[e+f x])}-\frac{1}{4 (i c-d) f (a+i a \tan[e+f x])^2}$$

Result (type 3, 372 leaves):

$$-\frac{1}{16\,a^2\,(c-\mathrm{i}\,d)\,(c+\mathrm{i}\,d)^3\,f\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])^2}$$
$$\mathrm{Sec}[e+f\,x]^2\,\Big(4\,\mathrm{i}\,c^3-8\,c^2\,d+4\,\mathrm{i}\,c\,d^2-8\,d^3+\mathrm{Cos}[2\,(e+f\,x)]\,\Big((c+\mathrm{i}\,d)^2\,(\mathrm{i}\,c+d+4\,c\,f\,x+4\,\mathrm{i}\,d\,f\,x)-8\,d^3\,\mathrm{Log}\big[(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\big]\Big)+$$
$$c^3\,\mathrm{Sin}[2\,(e+f\,x)]+\mathrm{i}\,c^2\,d\,\mathrm{Sin}[2\,(e+f\,x)]+c\,d^2\,\mathrm{Sin}[2\,(e+f\,x)]+\mathrm{i}\,d^3\,\mathrm{Sin}[2\,(e+f\,x)]+$$
$$4\,\mathrm{i}\,c^3\,f\,x\,\mathrm{Sin}[2\,(e+f\,x)]-12\,c^2\,d\,f\,x\,\mathrm{Sin}[2\,(e+f\,x)]-12\,\mathrm{i}\,c\,d^2\,f\,x\,\mathrm{Sin}[2\,(e+f\,x)]+$$
$$4\,d^3\,f\,x\,\mathrm{Sin}[2\,(e+f\,x)]-8\,\mathrm{i}\,d^3\,\mathrm{Log}\big[(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\big]\,\mathrm{Sin}[2\,(e+f\,x)]+$$
$$16\,d^3\,\mathrm{ArcTan}\Big[\frac{-2\,c\,d\,\mathrm{Cos}[f\,x]+(-c^2+d^2)\,\mathrm{Sin}[f\,x]}{(c^2-d^2)\,\mathrm{Cos}[f\,x]-2\,c\,d\,\mathrm{Sin}[f\,x]}\Big]\,(-\mathrm{i}\,\mathrm{Cos}[2\,(e+f\,x)]+\mathrm{Sin}[2\,(e+f\,x)])\Big)$$

Problem 1089: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3}{(c+d\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 142 leaves, 5 steps):

$$\frac{4\,a^3\,x}{(c-\mathrm{i}\,d)^2}+\frac{\mathrm{i}\,a^3\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{d^2\,f}-$$
$$\frac{a^3\,(\mathrm{i}\,c-d)\,(c-3\,\mathrm{i}\,d)\,\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]}{(c-\mathrm{i}\,d)^2\,d^2\,f}+\frac{(c+\mathrm{i}\,d)\,(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[e+f\,x])}{(c-\mathrm{i}\,d)\,d\,f\,(c+d\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 1936 leaves):

$$\frac{\mathrm{i}\,\mathrm{Cos}[3\,e]\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3}{2\,d^2\,f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^3}+$$
$$\Bigg(\mathrm{Cos}[e+f\,x]^3\,\Big(c^2\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]-2\,\mathrm{i}\,c\,d\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]+3\,d^2\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]-\mathrm{i}\,c^2\,\mathrm{Sin}\big[\tfrac{3\,e}{2}\big]-2\,c\,d\,\mathrm{Sin}\big[\tfrac{3\,e}{2}\big]-$$
$$3\,\mathrm{i}\,d^2\,\mathrm{Sin}\big[\tfrac{3\,e}{2}\big]\Big)\,\Bigg(\frac{\mathrm{ArcTan}\Big[\frac{2\,c\,d\,\mathrm{Cos}[4\,e+f\,x]-c^2\,\mathrm{Sin}[4\,e+f\,x]+d^2\,\mathrm{Sin}[4\,e+f\,x]}{c^2\,\mathrm{Cos}[4\,e+f\,x]-d^2\,\mathrm{Cos}[4\,e+f\,x]+2\,c\,d\,\mathrm{Sin}[4\,e+f\,x]}\Big]\,\mathrm{Cos}\big[\frac{3\,e}{2}\big]}{d^2}-$$
$$\frac{\mathrm{i}\,\mathrm{ArcTan}\Big[\frac{2\,c\,d\,\mathrm{Cos}[4\,e+f\,x]-c^2\,\mathrm{Sin}[4\,e+f\,x]+d^2\,\mathrm{Sin}[4\,e+f\,x]}{c^2\,\mathrm{Cos}[4\,e+f\,x]-d^2\,\mathrm{Cos}[4\,e+f\,x]+2\,c\,d\,\mathrm{Sin}[4\,e+f\,x]}\Big]\,\mathrm{Sin}\big[\frac{3\,e}{2}\big]}{d^2}\Bigg)$$
$$(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\Bigg)\Big/\Big((c-\mathrm{i}\,d)^2\,f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^3\Big)+$$
$$\Bigg(\mathrm{Cos}[e+f\,x]^3\,\Big(c^2\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]-2\,\mathrm{i}\,c\,d\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]+3\,d^2\,\mathrm{Cos}\big[\tfrac{3\,e}{2}\big]-\mathrm{i}\,c^2\,\mathrm{Sin}\big[\tfrac{3\,e}{2}\big]-$$

$$2\,c\,d\,\text{Sin}\left[\frac{3\,e}{2}\right]-3\,\text{i}\,d^2\,\text{Sin}\left[\frac{3\,e}{2}\right]\Bigg)\left(-\frac{\text{i}\,\text{Cos}\left[\frac{3\,e}{2}\right]\,\text{Log}\left[\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right]}{2\,d^2}-\right.$$

$$\left.\frac{\text{Log}\left[\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right]\,\text{Sin}\left[\frac{3\,e}{2}\right]}{2\,d^2}\right)$$

$$\left.\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^3\right)\Big/\left(\left(c-\text{i}\,d\right)^2 f\,\left(\text{Cos}[f\,x]+\text{i}\,\text{Sin}[f\,x]\right)^3\right)+$$

$$\frac{\text{Cos}[e+f\,x]^3\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[3\,e]\,\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^3}{2\,d^2\,f\,\left(\text{Cos}[f\,x]+\text{i}\,\text{Sin}[f\,x]\right)^3}+$$

$$\frac{\text{Cos}[e+f\,x]^3\,\left(4\,f\,x\,\text{Cos}[3\,e]-4\,\text{i}\,f\,x\,\text{Sin}[3\,e]\right)\,\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^3}{\left(c-\text{i}\,d\right)^2 f\,\left(\text{Cos}[f\,x]+\text{i}\,\text{Sin}[f\,x]\right)^3}+$$

$$\left(\text{Cos}[e+f\,x]^3\,\left(\frac{\text{Cos}[3\,e]}{d}-\frac{\text{i}\,\text{Sin}[3\,e]}{d}\right)\right.$$

$$\left.\left(\text{i}\,c^2\,\text{Sin}[f\,x]-2\,c\,d\,\text{Sin}[f\,x]-\text{i}\,d^2\,\text{Sin}[f\,x]\right)\,\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^3\right)\Big/$$

$$\left(\left(c-\text{i}\,d\right)\,f\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\,\left(\text{Cos}[f\,x]+\text{i}\,\text{Sin}[f\,x]\right)^3\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)\right)+$$

$$\frac{1}{\left(\text{Cos}[f\,x]+\text{i}\,\text{Sin}[f\,x]\right)^3}$$

$$x\,\text{Cos}[e+f\,x]^3\left(\frac{\text{Cos}[e]}{2\,d^2}-\frac{\text{Cos}[e]^3}{2\,d^2}-\frac{\text{i}\,\text{Sin}[e]}{d^2}+\frac{2\,\text{i}\,\text{Cos}[e]^2\,\text{Sin}[e]}{d^2}+\frac{3\,\text{Cos}[e]\,\text{Sin}[e]^2}{d^2}-\right.$$

$$\frac{2\,\text{i}\,\text{Sin}[e]^3}{d^2}+\frac{5\,c\,\text{Cos}[e]^4}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+\frac{c^3\,\text{Cos}[e]^4}{\left(c-\text{i}\,d\right)^2\,d^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-$$

$$\frac{\text{i}\,c^2\,\text{Cos}[e]^4}{\left(c-\text{i}\,d\right)^2\,d\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+\frac{3\,\text{i}\,d\,\text{Cos}[e]^4}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-$$

$$\frac{20\,\text{i}\,c\,\text{Cos}[e]^3\,\text{Sin}[e]}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-\frac{4\,\text{i}\,c^3\,\text{Cos}[e]^3\,\text{Sin}[e]}{\left(c-\text{i}\,d\right)^2\,d^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-$$

$$\frac{4\,c^2\,\text{Cos}[e]^3\,\text{Sin}[e]}{\left(c-\text{i}\,d\right)^2\,d\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+\frac{12\,d\,\text{Cos}[e]^3\,\text{Sin}[e]}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-$$

$$\frac{30\,c\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-\frac{6\,c^3\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{\left(c-\text{i}\,d\right)^2\,d^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+$$

$$\frac{6\,\text{i}\,c^2\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{\left(c-\text{i}\,d\right)^2\,d\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-\frac{18\,\text{i}\,d\,\text{Cos}[e]^2\,\text{Sin}[e]^2}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+$$

$$\frac{20\,\text{i}\,c\,\text{Cos}[e]\,\text{Sin}[e]^3}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+\frac{4\,\text{i}\,c^3\,\text{Cos}[e]\,\text{Sin}[e]^3}{\left(c-\text{i}\,d\right)^2\,d^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+$$

$$\frac{4\,c^2\,\text{Cos}[e]\,\text{Sin}[e]^3}{\left(c-\text{i}\,d\right)^2\,d\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}-\frac{12\,d\,\text{Cos}[e]\,\text{Sin}[e]^3}{\left(c-\text{i}\,d\right)^2\,\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)}+$$

$$\frac{5\,c\,\sin[e]^4}{(c-i\,d)^2\,(c\cos[e]+d\sin[e])}+\frac{c^3\sin[e]^4}{(c-i\,d)^2\,d^2\,(c\cos[e]+d\sin[e])}-\frac{i\,c^2\sin[e]^4}{(c-i\,d)^2\,d\,(c\cos[e]+d\sin[e])}+\frac{3\,i\,d\sin[e]^4}{(c-i\,d)^2\,(c\cos[e]+d\sin[e])}+\Big(\big(-5c-3\,i\,d+c\cos[2e]-3\,i\,d\cos[2e]+i\,c\sin[2e]+3d\sin[2e]\big)\big(\cos[3e]-i\sin[3e]\big)\Big)\Big/$$
$$\Big((c-i\,d)^2\,\big(c+i\,d+c\cos[2e]-i\,d\cos[2e]+i\,c\sin[2e]+d\sin[2e]\big)\Big)+\frac{(1-\cos[2e]-i\sin[2e])\left(\frac{\cos[3e]}{d^2}-\frac{i\sin[3e]}{d^2}\right)}{1+\cos[2e]+i\sin[2e]}+$$
$$\left(\left(-c^3+c^3\cos[2e]+i\,c^3\sin[2e]\right)\left(\frac{\cos[3e]}{d^2}-\frac{i\sin[3e]}{d^2}\right)\right)\Big/\Big((c-i\,d)^2\,\big(c+i\,d+c\cos[2e]-i\,d\cos[2e]+i\,c\sin[2e]+d\sin[2e]\big)\Big)+$$
$$\left(\left(-c^2+3c^2\cos[2e]+3\,i\,c^2\sin[2e]\right)\left(-\frac{i\cos[3e]}{d}-\frac{\sin[3e]}{d}\right)\right)\Big/\Big((c-i\,d)^2\,\big(c+i\,d+c\cos[2e]-i\,d\cos[2e]+i\,c\sin[2e]+d\sin[2e]\big)\Big)-$$
$$\left.\frac{\sin[e]\tan[e]}{2d^2}-\frac{\sin[e]^3\tan[e]}{2d^2}\right)(a+i\,a\tan[e+f\,x])^3$$

Problem 1090: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\tan[e+f\,x])^2}{(c+d\tan[e+f\,x])^2}\,dx$$

Optimal (type 3, 93 leaves, 3 steps):

$$\frac{2a^2x}{(c-i\,d)^2}-\frac{2\,i\,a^2\log[c\cos[e+f\,x]+d\sin[e+f\,x]]}{(c-i\,d)^2 f}+\frac{a^2(i\,c-d)}{d\,(i\,c+d)\,f\,(c+d\tan[e+f\,x])}$$

Result (type 3, 253 leaves):

$$\Bigg(a^2(\cos[e+f\,x]+i\sin[e+f\,x])^2\Bigg(\frac{\log\left[(c\cos[e+f\,x]+d\sin[e+f\,x])^2\right](-i\cos[2e]-\sin[2e])}{f}+4x(\cos[2e]-i\sin[2e])+$$
$$\frac{2\arctan\left[\frac{2cd\cos[3e+f\,x]+(-c^2+d^2)\sin[3e+f\,x]}{(c^2-d^2)\cos[3e+f\,x]+2cd\sin[3e+f\,x]}\right](\cos[2e]-i\sin[2e])}{f}-$$
$$\frac{(c-i\,d)(c+i\,d)(\cos[2e]-i\sin[2e])\sin[f\,x]}{f\,(c\cos[e]+d\sin[e])\,(c\cos[e+f\,x]+d\sin[e+f\,x])}\Bigg)\Bigg)\Bigg/$$
$$\left((c-i\,d)^2(\cos[f\,x]+i\sin[f\,x])^2\right)$$

Problem 1091: Result more than twice size of optimal antiderivative.

$$\int \frac{a + i a \operatorname{Tan}[e + f x]}{(c + d \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 75 leaves, 3 steps):

$$\frac{a x}{(c - i d)^2} - \frac{i a \operatorname{Log}[c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x]]}{(c - i d)^2 f} - \frac{a}{(i c + d) f (c + d \operatorname{Tan}[e + f x])}$$

Result (type 3, 302 leaves):

$$\frac{1}{4 (c - i d)^2 f} \operatorname{Cos}[e + f x] (\operatorname{Cos}[e] - i \operatorname{Sin}[e]) (\operatorname{Cos}[f x] - i \operatorname{Sin}[f x]) \left(4 \operatorname{ArcTan}\left[\frac{2 c d \operatorname{Cos}[2 e + f x] + (-c^2 + d^2) \operatorname{Sin}[2 e + f x]}{(c^2 - d^2) \operatorname{Cos}[2 e + f x] + 2 c d \operatorname{Sin}[2 e + f x]}\right] + \left((c^2 + d^2) \operatorname{Cos}[f x] \left(4 f x - i \operatorname{Log}\left[(c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])^2\right]\right) + (c^2 - d^2) \operatorname{Cos}[2 e + f x] \left(4 f x - i \operatorname{Log}\left[(c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])^2\right]\right) - 2 d \left(2 (i c + d) \operatorname{Sin}[f x] + c \left(-4 f x + i \operatorname{Log}\left[(c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])^2\right]\right) \operatorname{Sin}[2 e + f x]\right)\right) \Big/ \left((c \operatorname{Cos}[e] + d \operatorname{Sin}[e]) (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])\right)\right) (a + i a \operatorname{Tan}[e + f x])$$

Problem 1094: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 357 leaves, 6 steps):

$$\frac{(c^5 + 5 i c^4 d - 10 c^3 d^2 - 10 i c^2 d^3 - 35 c d^4 + 25 i d^5) x}{8 a^3 (c - i d)^2 (c + i d)^5} + \frac{(5 c - 3 i d) d^4 \operatorname{Log}[c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x]]}{a^3 (i c - d)^5 (c - i d)^2 f} + \frac{d (c^3 + 5 i c^2 d - 11 c d^2 + 25 i d^3)}{8 a^3 (c - i d) (c + i d)^4 f (c + d \operatorname{Tan}[e + f x])} - \frac{1}{6 (i c - d) f (a + i a \operatorname{Tan}[e + f x])^3 (c + d \operatorname{Tan}[e + f x])} + \frac{3 i c - 11 d}{24 a (c + i d)^2 f (a + i a \operatorname{Tan}[e + f x])^2 (c + d \operatorname{Tan}[e + f x])} + \frac{c^2 + 5 i c d - 12 d^2}{8 (i c - d)^3 f (a^3 + i a^3 \operatorname{Tan}[e + f x]) (c + d \operatorname{Tan}[e + f x])}$$

Result (type 3, 1584 leaves):

$$\left((3 c^2 + 14 i c d - 23 d^2) \operatorname{Cos}[2 f x] \operatorname{Sec}[e + f x]^3 \left(\frac{1}{16} i \operatorname{Cos}[e] - \frac{\operatorname{Sin}[e]}{16}\right) (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3\right) \Big/ \left((c + i d)^4 f (a + i a \operatorname{Tan}[e + f x])^3\right) +$$

$$\left(\left(3\,c+7\,\mathrm{i}\,d\right)\,\mathrm{Cos}[4\,f\,x]\,\mathrm{Sec}[e+f\,x]^3\,\left(\frac{1}{32}\,\mathrm{i}\,\mathrm{Cos}[e]+\frac{\mathrm{Sin}[e]}{32}\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/$$
$$\left(\left(c+\mathrm{i}\,d\right)^3\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]^3\,\left(5\,c\,d^4\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]-3\,\mathrm{i}\,d^5\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]+5\,\mathrm{i}\,c\,d^4\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]+3\,d^5\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)\right.$$
$$\left(\mathrm{ArcTan}\left[\frac{-3\,c^2\,d\,\mathrm{Cos}[f\,x]+d^3\,\mathrm{Cos}[f\,x]-c^3\,\mathrm{Sin}[f\,x]+3\,c\,d^2\,\mathrm{Sin}[f\,x]}{c^3\,\mathrm{Cos}[f\,x]-3\,c\,d^2\,\mathrm{Cos}[f\,x]-3\,c^2\,d\,\mathrm{Sin}[f\,x]+d^3\,\mathrm{Sin}[f\,x]}\right]\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]+\right.$$
$$\left.\mathrm{i}\,\mathrm{ArcTan}\left[\frac{-3\,c^2\,d\,\mathrm{Cos}[f\,x]+d^3\,\mathrm{Cos}[f\,x]-c^3\,\mathrm{Sin}[f\,x]+3\,c\,d^2\,\mathrm{Sin}[f\,x]}{c^3\,\mathrm{Cos}[f\,x]-3\,c\,d^2\,\mathrm{Cos}[f\,x]-3\,c^2\,d\,\mathrm{Sin}[f\,x]+d^3\,\mathrm{Sin}[f\,x]}\right]\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)$$
$$\left.\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/\left(\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^5\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]^3\,\left(5\,c\,d^4\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]-3\,\mathrm{i}\,d^5\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]+5\,\mathrm{i}\,c\,d^4\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]+3\,d^5\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)\right.$$
$$\left(-\frac{1}{2}\,\mathrm{i}\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]\,\mathrm{Log}\left[\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right]+\right.$$
$$\left.\left.\frac{1}{2}\,\mathrm{Log}\left[\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right]\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/$$
$$\left(\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^5\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Cos}[6\,f\,x]\,\mathrm{Sec}[e+f\,x]^3\,\left(\frac{1}{48}\,\mathrm{i}\,\mathrm{Cos}[3\,e]+\frac{1}{48}\,\mathrm{Sin}[3\,e]\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/$$
$$\left(\left(c+\mathrm{i}\,d\right)^2\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(c^5+5\,\mathrm{i}\,c^4\,d-10\,c^3\,d^2-10\,\mathrm{i}\,c^2\,d^3-35\,c\,d^4+25\,\mathrm{i}\,d^5\right)\,\mathrm{Sec}[e+f\,x]^3\right.$$
$$\left.\left(\frac{1}{8}\,f\,x\,\mathrm{Cos}[3\,e]+\frac{1}{8}\,\mathrm{i}\,f\,x\,\mathrm{Sin}[3\,e]\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/$$
$$\left(\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^5\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+\left(x\,\mathrm{Sec}[e+f\,x]^3\right.$$
$$\left(\frac{5\,c\,d^4\,\mathrm{Cos}[e]^2}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}-\frac{3\,\mathrm{i}\,d^5\,\mathrm{Cos}[e]^2}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\right.$$
$$\frac{10\,\mathrm{i}\,c\,d^4\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\frac{6\,d^5\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}-$$
$$\frac{5\,c\,d^4\,\mathrm{Sin}[e]^2}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\frac{3\,\mathrm{i}\,d^5\,\mathrm{Sin}[e]^2}{\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^4\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+$$
$$\left(\left(5\,c-3\,\mathrm{i}\,d\right)\,\left(-d\,\mathrm{Cos}[e]+c\,\mathrm{Sin}[e]\right)\,\left(d^4\,\mathrm{Cos}[3\,e]+\mathrm{i}\,d^4\,\mathrm{Sin}[3\,e]\right)\right)\bigg/$$
$$\left.\left.\left(\left(c-\mathrm{i}\,d\right)^2\,\left(c+\mathrm{i}\,d\right)^5\,\left(-\mathrm{i}\,c\,\mathrm{Cos}[e]-\mathrm{i}\,d\,\mathrm{Sin}[e]\right)\right)\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right)\bigg/$$
$$\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3+\left(\left(3\,c^2+14\,\mathrm{i}\,c\,d-23\,d^2\right)\,\mathrm{Sec}[e+f\,x]^3\,\left(\frac{\mathrm{Cos}[e]}{16}+\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[e]\right)\right.$$
$$\left.\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\,\mathrm{Sin}[2\,f\,x]\right)\bigg/\left(\left(c+\mathrm{i}\,d\right)^4\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(3\,c+7\,\mathrm{i}\,d\right)\,\mathrm{Sec}[e+f\,x]^3\,\left(\frac{\mathrm{Cos}[e]}{32}-\frac{1}{32}\,\mathrm{i}\,\mathrm{Sin}[e]\right)\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\,\mathrm{Sin}[4\,f\,x]\right)\bigg/$$

$$\left((c+i\,d)^3 f\,(a+i\,a\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\text{Sec}[e+f\,x]^3\left(\frac{1}{48}\text{Cos}[3\,e]-\frac{1}{48}i\,\text{Sin}[3\,e]\right)(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,\text{Sin}[6\,f\,x]\right)\Big/$$
$$\left((c+i\,d)^2 f\,(a+i\,a\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\text{Sec}[e+f\,x]^3\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\right.$$
$$\left.\left(\frac{1}{2}d^5\,\text{Cos}[3\,e-f\,x]-\frac{1}{2}d^5\,\text{Cos}[3\,e+f\,x]+\frac{1}{2}i\,d^5\,\text{Sin}[3\,e-f\,x]-\frac{1}{2}i\,d^5\,\text{Sin}[3\,e+f\,x]\right)\right)\Big/$$
$$\left((c-i\,d)\,(c+i\,d)^4 f\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\right.$$
$$\left.(a+i\,a\,\text{Tan}[e+f\,x])^3\right)$$

Problem 1095: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f\,x])^3}{(c+d\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 134 leaves, 4 steps):

$$\frac{4\,a^3\,x}{(c-i\,d)^3}-\frac{4\,a^3\,\text{Log}[c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]]}{(i\,c+d)^3 f}-$$
$$\frac{a\,(a+i\,a\,\text{Tan}[e+f\,x])^2}{2\,(i\,c+d)\,f\,(c+d\,\text{Tan}[e+f\,x])^2}+\frac{2\,a^3\,(c+i\,d)}{(c-i\,d)^2\,d\,f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 3, 595 leaves):

$$\frac{1}{2\,(c-i\,d)^3 f\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2}$$
$$a^3\left(2\,c^3 f\,x\,\text{Cos}[3\,e+2\,f\,x]-6\,c\,d^2 f\,x\,\text{Cos}[3\,e+2\,f\,x]-\right.$$
$$i\,c^3\,\text{Cos}[3\,e+2\,f\,x]\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]+$$
$$3\,i\,c\,d^2\,\text{Cos}[3\,e+2\,f\,x]\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]+$$
$$(c^2+d^2)\,\text{Cos}[e+2\,f\,x]\left(3\,d+2\,c\,f\,x-i\,c\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\right)+$$
$$(c^2+d^2)\,\text{Cos}[e]\left(-i\,c-3\,d+4\,c\,f\,x-2\,i\,c\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\right)+$$
$$3\,c^3\,\text{Sin}[e]-i\,c^2\,d\,\text{Sin}[e]+3\,c\,d^2\,\text{Sin}[e]-i\,d^3\,\text{Sin}[e]+4\,c^2\,d\,f\,x\,\text{Sin}[e]+$$
$$4\,d^3 f\,x\,\text{Sin}[e]-2\,i\,c^2\,d\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[e]-$$
$$2\,i\,d^3\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[e]-3\,c^3\,\text{Sin}[e+2\,f\,x]-$$
$$3\,c\,d^2\,\text{Sin}[e+2\,f\,x]+2\,c^2\,d\,f\,x\,\text{Sin}[e+2\,f\,x]+2\,d^3 f\,x\,\text{Sin}[e+2\,f\,x]-$$
$$i\,c^2\,d\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[e+2\,f\,x]-$$
$$i\,d^3\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[e+2\,f\,x]+6\,c^2\,d\,f\,x\,\text{Sin}[3\,e+2\,f\,x]-$$
$$2\,d^3 f\,x\,\text{Sin}[3\,e+2\,f\,x]-3\,i\,c^2\,d\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[3\,e+2\,f\,x]+$$
$$\left.i\,d^3\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[3\,e+2\,f\,x]\right)$$

Problem 1096: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^2}{(c + d \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 3, 125 leaves, 4 steps):

$$\frac{2 a^2 x}{(c - i d)^3} - \frac{2 a^2 \operatorname{Log}[c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x]]}{(i c + d)^3 f} + \frac{a^2 (i c - d)}{2 d (i c + d) f (c + d \operatorname{Tan}[e + f x])^2} + \frac{2 i a^2}{(c - i d)^2 f (c + d \operatorname{Tan}[e + f x])}$$

Result (type 3, 317 leaves):

$$\Bigg(a^2 (\operatorname{Cos}[e + f x] + i \operatorname{Sin}[e + f x])^2 \Bigg(\frac{\operatorname{Log}\left[(c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])^2\right] (-i \operatorname{Cos}[2 e] - \operatorname{Sin}[2 e])}{f} + 4 x (\operatorname{Cos}[2 e] - i \operatorname{Sin}[2 e]) - \frac{1}{f} 2 \operatorname{ArcTan}\left[\frac{(-3 c^2 d + d^3) \operatorname{Cos}[3 e + f x] + c (c^2 - 3 d^2) \operatorname{Sin}[3 e + f x]}{c (c^2 - 3 d^2) \operatorname{Cos}[3 e + f x] - d (-3 c^2 + d^2) \operatorname{Sin}[3 e + f x]}\right] (\operatorname{Cos}[2 e] - i \operatorname{Sin}[2 e]) + \frac{(c - i d) d (\operatorname{Cos}[2 e] - i \operatorname{Sin}[2 e])}{2 f (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])^2} - \frac{(c - i d) (c + 2 i d) (\operatorname{Cos}[2 e] - i \operatorname{Sin}[2 e]) \operatorname{Sin}[f x]}{f (c \operatorname{Cos}[e] + d \operatorname{Sin}[e]) (c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x])}\Bigg)\Bigg) \Big/ \left((c - i d)^3 (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^2\right)$$

Problem 1097: Result more than twice size of optimal antiderivative.

$$\int \frac{a + i a \operatorname{Tan}[e + f x]}{(c + d \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 3, 104 leaves, 4 steps):

$$\frac{a x}{(c - i d)^3} - \frac{a \operatorname{Log}[c \operatorname{Cos}[e + f x] + d \operatorname{Sin}[e + f x]]}{(i c + d)^3 f} - \frac{a}{2 (i c + d) f (c + d \operatorname{Tan}[e + f x])^2} + \frac{i a}{(c - i d)^2 f (c + d \operatorname{Tan}[e + f x])}$$

Result (type 3, 315 leaves):

$$\frac{1}{(c-\mathrm{i}\,d)^3}\mathrm{Cos}[e+f\,x]\,\left(\mathrm{Cos}[f\,x]-\mathrm{i}\,\mathrm{Sin}[f\,x]\right)$$
$$\left(2\,x\,\left(\mathrm{Cos}[e]-\mathrm{i}\,\mathrm{Sin}[e]\right)-\frac{\mathrm{ArcTan}\left[\frac{\left(-3\,c^2\,d+d^3\right)\,\mathrm{Cos}[2\,e+f\,x]+c\,\left(c^2-3\,d^2\right)\,\mathrm{Sin}[2\,e+f\,x]}{c\,\left(c^2-3\,d^2\right)\,\mathrm{Cos}[2\,e+f\,x]-d\,\left(-3\,c^2+d^2\right)\,\mathrm{Sin}[2\,e+f\,x]}\right]\,\left(\mathrm{Cos}[e]-\mathrm{i}\,\mathrm{Sin}[e]\right)}{f}-\right.$$
$$\frac{\mathrm{i}\,\mathrm{Log}\left[\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right]\,\left(\mathrm{Cos}[e]-\mathrm{i}\,\mathrm{Sin}[e]\right)}{2\,f}+$$
$$\frac{(c-\mathrm{i}\,d)\,d^2\,\left(\mathrm{i}\,\mathrm{Cos}[e]+\mathrm{Sin}[e]\right)}{2\,(c+\mathrm{i}\,d)\,f\,\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2}+$$
$$\left.\frac{(c-\mathrm{i}\,d)\,d\,(-2\,\mathrm{i}\,c+d)\,\left(\mathrm{Cos}[e]-\mathrm{i}\,\mathrm{Sin}[e]\right)\,\mathrm{Sin}[f\,x]}{(c+\mathrm{i}\,d)\,f\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)\,\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)}\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)$$

Problem 1098: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^3}\,dx$$

Optimal (type 3, 273 leaves, 5 steps):

$$\frac{\left(c^4+4\,\mathrm{i}\,c^3\,d+6\,c^2\,d^2-12\,\mathrm{i}\,c\,d^3-3\,d^4\right)\,x}{2\,a\,(c-\mathrm{i}\,d)^3\,(c+\mathrm{i}\,d)^4}+$$
$$\frac{2\,d^2\,\left(3\,c^2-2\,\mathrm{i}\,c\,d-d^2\right)\,\mathrm{Log}\left[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right]}{a\,(c+\mathrm{i}\,d)^4\,(\mathrm{i}\,c+d)^3\,f}+$$
$$\frac{(c-2\,\mathrm{i}\,d)\,d}{2\,a\,(c-\mathrm{i}\,d)\,(c+\mathrm{i}\,d)^2\,f\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^2}-$$
$$\frac{1}{2\,(\mathrm{i}\,c-d)\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^2}+$$
$$\frac{d\,\left(c^2-8\,\mathrm{i}\,c\,d-3\,d^2\right)}{2\,a\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^3\,f\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)}$$

Result (type 3, 1231 leaves):

$$\left(\mathrm{Sec}[e+f\,x]\right.$$
$$\left(3\,c^2\,d^2\,\mathrm{Cos}\left[\frac{e}{2}\right]-2\,\mathrm{i}\,c\,d^3\,\mathrm{Cos}\left[\frac{e}{2}\right]-d^4\,\mathrm{Cos}\left[\frac{e}{2}\right]+3\,\mathrm{i}\,c^2\,d^2\,\mathrm{Sin}\left[\frac{e}{2}\right]+2\,c\,d^3\,\mathrm{Sin}\left[\frac{e}{2}\right]-\mathrm{i}\,d^4\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)$$
$$\left(-2\,\mathrm{ArcTan}\left[\frac{-d\,\mathrm{Cos}[f\,x]-c\,\mathrm{Sin}[f\,x]}{c\,\mathrm{Cos}[f\,x]-d\,\mathrm{Sin}[f\,x]}\right]\,\mathrm{Cos}\left[\frac{e}{2}\right]-2\,\mathrm{i}\,\mathrm{ArcTan}\left[\frac{-d\,\mathrm{Cos}[f\,x]-c\,\mathrm{Sin}[f\,x]}{c\,\mathrm{Cos}[f\,x]-d\,\mathrm{Sin}[f\,x]}\right]\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)$$
$$\left.\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)\right)\Big/\left((c-\mathrm{i}\,d)^3\,(c+\mathrm{i}\,d)^4\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]\,\left(3\,c^2\,d^2\,\mathrm{Cos}\left[\frac{e}{2}\right]-2\,\mathrm{i}\,c\,d^3\,\mathrm{Cos}\left[\frac{e}{2}\right]-d^4\,\mathrm{Cos}\left[\frac{e}{2}\right]+3\,\mathrm{i}\,c^2\,d^2\,\mathrm{Sin}\left[\frac{e}{2}\right]+\right.\right.$$

$$2\,c\,d^3\,\mathrm{Sin}\left[\frac{e}{2}\right]-i\,d^4\,\mathrm{Sin}\left[\frac{e}{2}\right]\Big)\left(i\,\mathrm{Cos}\left[\frac{e}{2}\right]\mathrm{Log}\left[\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right]-\right.$$
$$\left.\mathrm{Log}\left[\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right]\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)\Big)\Big/$$
$$\left(\left(c-i\,d\right)^3\left(c+i\,d\right)^4 f\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\right)+$$
$$\frac{\mathrm{Cos}[2\,f\,x]\,\mathrm{Sec}[e+f\,x]\left(\frac{1}{4}\,i\,\mathrm{Cos}[e]+\frac{\mathrm{Sin}[e]}{4}\right)\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)}{\left(c+i\,d\right)^3 f\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)}+$$
$$\left(\left(c^4+4\,i\,c^3\,d+6\,c^2\,d^2-12\,i\,c\,d^3-3\,d^4\right)\mathrm{Sec}[e+f\,x]\right.$$
$$\left.\left(\frac{1}{2}\,f\,x\,\mathrm{Cos}[e]+\frac{1}{2}\,i\,f\,x\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)\right)\Big/$$
$$\left(\left(c-i\,d\right)^3\left(c+i\,d\right)^4 f\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\right)+\Bigg(x\,\mathrm{Sec}[e+f\,x]$$
$$\left(-\frac{6\,c^2\,d^2}{\left(c-i\,d\right)^3\left(c+i\,d\right)^3\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\frac{4\,i\,c\,d^3}{\left(c-i\,d\right)^3\left(c+i\,d\right)^3\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\right.$$
$$\frac{2\,d^4}{\left(c-i\,d\right)^3\left(c+i\,d\right)^3\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)}+\left(\left(3\,c^2\,d^2-2\,i\,c\,d^3-d^4\right)\left(2\,\mathrm{Cos}[e]+2\,i\,\mathrm{Sin}[e]\right)\right.$$
$$\left(c+i\,d-c\,\mathrm{Cos}[2\,e]+i\,d\,\mathrm{Cos}[2\,e]-i\,c\,\mathrm{Sin}[2\,e]-d\,\mathrm{Sin}[2\,e]\right)\Big)\Big/$$
$$\left.\left(\left(c-i\,d\right)^3\left(c+i\,d\right)^4\left(c+i\,d+c\,\mathrm{Cos}[2\,e]-i\,d\,\mathrm{Cos}[2\,e]+i\,c\,\mathrm{Sin}[2\,e]+d\,\mathrm{Sin}[2\,e]\right)\right)\right)$$
$$\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)\Bigg)\Big/\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)+$$
$$\frac{\mathrm{Sec}[e+f\,x]\left(\frac{\mathrm{Cos}[e]}{4}-\frac{1}{4}\,i\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)\mathrm{Sin}[2\,f\,x]}{\left(c+i\,d\right)^3 f\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)}+$$
$$\left(\mathrm{Sec}[e+f\,x]\left(-\frac{1}{2}\,i\,d^4\,\mathrm{Cos}[e]+\frac{1}{2}\,d^4\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)\right)\Big/$$
$$\left(\left(c-i\,d\right)^2\left(c+i\,d\right)^3 f\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\right)+$$
$$\Bigg(\mathrm{Sec}[e+f\,x]\left(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\right)$$
$$\left(-2\,c\,d^3\,\mathrm{Cos}[e-f\,x]+\frac{1}{2}\,i\,d^4\,\mathrm{Cos}[e-f\,x]+2\,c\,d^3\,\mathrm{Cos}[e+f\,x]-\frac{1}{2}\,i\,d^4\,\mathrm{Cos}[e+f\,x]-\right.$$
$$\left.2\,i\,c\,d^3\,\mathrm{Sin}[e-f\,x]-\frac{1}{2}\,d^4\,\mathrm{Sin}[e-f\,x]+2\,i\,c\,d^3\,\mathrm{Sin}[e+f\,x]+\frac{1}{2}\,d^4\,\mathrm{Sin}[e+f\,x]\right)\Bigg)\Big/$$
$$\left(\left(c-i\,d\right)^2\left(c+i\,d\right)^3 f\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)\right.$$
$$\left.\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\right)$$

Problem 1099: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)^2\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^3}\,dx$$

Optimal (type 3, 354 leaves, 6 steps):

$$\frac{\left(c^5+5\,i\,c^4\,d-10\,c^3\,d^2+30\,i\,c^2\,d^3+45\,c\,d^4-15\,i\,d^5\right)x}{4\,a^2\,(c-i\,d)^3\,(c+i\,d)^5}-\frac{2\,d^3\,\left(5\,c^2-5\,i\,c\,d-2\,d^2\right)\,\text{Log}[c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]]}{a^2\,(i\,c-d)^5\,(i\,c+d)^3\,f}+\frac{d\,\left(c^2+5\,i\,c\,d+8\,d^2\right)}{4\,a^2\,(c-i\,d)\,(c+i\,d)^3\,f\,(c+d\,\text{Tan}[e+f\,x])^2}+\frac{i\,c-5\,d}{4\,a^2\,(c+i\,d)^2\,f\,(1+i\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^2}-\frac{1}{4\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^2}+\frac{(c-3\,i\,d)\,d\,\left(c^2+8\,i\,c\,d+5\,d^2\right)}{4\,a^2\,(c-i\,d)^2\,(c+i\,d)^4\,f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 3, 4395 leaves):

$$\Bigg(\text{Sec}[e+f\,x]^2\,\left(5\,c^2\,d^3\,\text{Cos}[e]-5\,i\,c\,d^4\,\text{Cos}[e]-2\,d^5\,\text{Cos}[e]+5\,i\,c^2\,d^3\,\text{Sin}[e]+5\,c\,d^4\,\text{Sin}[e]-2\,i\,d^5\,\text{Sin}[e]\right)\left(-2\,i\,\text{ArcTan}\left[\frac{-2\,c\,d\,\text{Cos}[f\,x]-c^2\,\text{Sin}[f\,x]+d^2\,\text{Sin}[f\,x]}{c^2\,\text{Cos}[f\,x]-d^2\,\text{Cos}[f\,x]-2\,c\,d\,\text{Sin}[f\,x]}\right]\text{Cos}[e]+2\,\text{ArcTan}\left[\frac{-2\,c\,d\,\text{Cos}[f\,x]-c^2\,\text{Sin}[f\,x]+d^2\,\text{Sin}[f\,x]}{c^2\,\text{Cos}[f\,x]-d^2\,\text{Cos}[f\,x]-2\,c\,d\,\text{Sin}[f\,x]}\right]\text{Sin}[e]\right)\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^2\Bigg)\Bigg/\left((c-i\,d)^3\,(c+i\,d)^5\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2\right)+\Bigg(\text{Sec}[e+f\,x]^2\,\left(5\,c^2\,d^3\,\text{Cos}[e]-5\,i\,c\,d^4\,\text{Cos}[e]-2\,d^5\,\text{Cos}[e]+5\,i\,c^2\,d^3\,\text{Sin}[e]+5\,c\,d^4\,\text{Sin}[e]-2\,i\,d^5\,\text{Sin}[e]\right)\left(-\text{Cos}[e]\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]-i\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\text{Sin}[e]\right)\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^2\Bigg)\Bigg/\left((c-i\,d)^3\,(c+i\,d)^5\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2\right)+\frac{1}{(a+i\,a\,\text{Tan}[e+f\,x])^2}x\,\text{Sec}[e+f\,x]^2\Bigg(-\frac{10\,i\,c^2\,d^3\,\text{Cos}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}-\frac{10\,c\,d^4\,\text{Cos}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}+\frac{4\,i\,d^5\,\text{Cos}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}+\frac{10\,c^2\,d^3\,\text{Sin}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}-\frac{10\,i\,c\,d^4\,\text{Sin}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}-\frac{4\,d^5\,\text{Sin}[e]}{(c-i\,d)^3\,(c+i\,d)^4\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])}+\Big((2\,\text{Cos}[2\,e]+2\,i\,\text{Sin}[2\,e])\left(5\,i\,c^3\,d^3+3\,i\,c\,d^5+2\,d^6-5\,i\,c^3\,d^3\,\text{Cos}[2\,e]-10\,c^2\,d^4\,\text{Cos}[2\,e]+7\,i\,c\,d^5\,\text{Cos}[2\,e]+2\,d^6\,\text{Cos}[2\,e]+5\,c^3\,d^3\,\text{Sin}[2\,e]-10\,i\,c^2\,d^4\,\text{Sin}[2\,e]-7\,c\,d^5\,\text{Sin}[2\,e]+2\,i\,d^6\,\text{Sin}[2\,e]\right)\Big)\Big/$$

$$\left(\left(c-\mathbb{i}\,d\right)^3\left(c+\mathbb{i}\,d\right)^5\left(c+\mathbb{i}\,d+c\,\mathrm{Cos}[2\,e]-\mathbb{i}\,d\,\mathrm{Cos}[2\,e]+\mathbb{i}\,c\,\mathrm{Sin}[2\,e]+d\,\mathrm{Sin}[2\,e]\right)\right)\Bigg)$$

$$\left(\mathrm{Cos}[f\,x]+\mathbb{i}\,\mathrm{Sin}[f\,x]\right)^2+\Bigg(\mathrm{Sec}[e+f\,x]^2\left(\mathrm{Cos}[f\,x]+\mathbb{i}\,\mathrm{Sin}[f\,x]\right)^2$$

$$\left(\frac{1}{64}\,\mathrm{Cos}[2\,e+4\,f\,x]-\frac{1}{64}\,\mathbb{i}\,\mathrm{Sin}[2\,e+4\,f\,x]\right)$$

$$\Big(6\,\mathbb{i}\,c^8\,\mathrm{Cos}[e]-14\,c^7\,d\,\mathrm{Cos}[e]+18\,\mathbb{i}\,c^6\,d^2\,\mathrm{Cos}[e]-42\,c^5\,d^3\,\mathrm{Cos}[e]+18\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[e]-$$
$$42\,c^3\,d^5\,\mathrm{Cos}[e]+6\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[e]-14\,c\,d^7\,\mathrm{Cos}[e]+5\,\mathbb{i}\,c^8\,\mathrm{Cos}[e+2\,f\,x]-11\,c^7\,d\,\mathrm{Cos}[e+2\,f\,x]+$$
$$31\,\mathbb{i}\,c^6\,d^2\,\mathrm{Cos}[e+2\,f\,x]-33\,c^5\,d^3\,\mathrm{Cos}[e+2\,f\,x]+63\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[e+2\,f\,x]-$$
$$33\,c^3\,d^5\,\mathrm{Cos}[e+2\,f\,x]+53\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[e+2\,f\,x]-11\,c\,d^7\,\mathrm{Cos}[e+2\,f\,x]+16\,\mathbb{i}\,d^8\,\mathrm{Cos}[e+2\,f\,x]+$$
$$2\,c^8\,f\,x\,\mathrm{Cos}[e+2\,f\,x]+16\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[e+2\,f\,x]-56\,c^6\,d^2\,f\,x\,\mathrm{Cos}[e+2\,f\,x]-$$
$$32\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[e+2\,f\,x]-20\,c^4\,d^4\,f\,x\,\mathrm{Cos}[e+2\,f\,x]+80\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[e+2\,f\,x]-$$
$$120\,c^2\,d^6\,f\,x\,\mathrm{Cos}[e+2\,f\,x]-30\,d^8\,f\,x\,\mathrm{Cos}[e+2\,f\,x]+5\,\mathbb{i}\,c^8\,\mathrm{Cos}[3\,e+2\,f\,x]-$$
$$3\,c^7\,d\,\mathrm{Cos}[3\,e+2\,f\,x]+43\,\mathbb{i}\,c^6\,d^2\,\mathrm{Cos}[3\,e+2\,f\,x]+35\,c^5\,d^3\,\mathrm{Cos}[3\,e+2\,f\,x]-$$
$$25\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[3\,e+2\,f\,x]+127\,c^3\,d^5\,\mathrm{Cos}[3\,e+2\,f\,x]-111\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[3\,e+2\,f\,x]+$$
$$89\,c\,d^7\,\mathrm{Cos}[3\,e+2\,f\,x]-48\,\mathbb{i}\,d^8\,\mathrm{Cos}[3\,e+2\,f\,x]+2\,c^8\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+$$
$$12\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]-28\,c^6\,d^2\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+52\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+$$
$$100\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+60\,c^2\,d^6\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+60\,\mathbb{i}\,c\,d^7\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+$$
$$30\,d^8\,f\,x\,\mathrm{Cos}[3\,e+2\,f\,x]+2\,\mathbb{i}\,c^8\,\mathrm{Cos}[3\,e+4\,f\,x]-2\,c^7\,d\,\mathrm{Cos}[3\,e+4\,f\,x]+$$
$$22\,\mathbb{i}\,c^6\,d^2\,\mathrm{Cos}[3\,e+4\,f\,x]+18\,c^5\,d^3\,\mathrm{Cos}[3\,e+4\,f\,x]+110\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[3\,e+4\,f\,x]+$$
$$10\,c^3\,d^5\,\mathrm{Cos}[3\,e+4\,f\,x]+130\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[3\,e+4\,f\,x]-10\,c\,d^7\,\mathrm{Cos}[3\,e+4\,f\,x]+$$
$$40\,\mathbb{i}\,d^8\,\mathrm{Cos}[3\,e+4\,f\,x]+4\,c^8\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+24\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]-$$
$$56\,c^6\,d^2\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+104\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+200\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+$$
$$120\,c^2\,d^6\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+120\,\mathbb{i}\,c\,d^7\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+60\,d^8\,f\,x\,\mathrm{Cos}[3\,e+4\,f\,x]+$$
$$2\,\mathbb{i}\,c^8\,\mathrm{Cos}[5\,e+4\,f\,x]+2\,c^7\,d\,\mathrm{Cos}[5\,e+4\,f\,x]+22\,\mathbb{i}\,c^6\,d^2\,\mathrm{Cos}[5\,e+4\,f\,x]+$$
$$62\,c^5\,d^3\,\mathrm{Cos}[5\,e+4\,f\,x]-130\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[5\,e+4\,f\,x]-74\,c^3\,d^5\,\mathrm{Cos}[5\,e+4\,f\,x]-$$
$$126\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[5\,e+4\,f\,x]-134\,c\,d^7\,\mathrm{Cos}[5\,e+4\,f\,x]+24\,\mathbb{i}\,d^8\,\mathrm{Cos}[5\,e+4\,f\,x]+$$
$$4\,c^8\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]+16\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]-16\,c^6\,d^2\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]+$$
$$176\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]+280\,c^4\,d^4\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]-80\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]+$$
$$240\,c^2\,d^6\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]-240\,\mathbb{i}\,c\,d^7\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]-60\,d^8\,f\,x\,\mathrm{Cos}[5\,e+4\,f\,x]+$$
$$80\,\mathbb{i}\,c^4\,d^4\,\mathrm{Cos}[5\,e+6\,f\,x]+112\,c^3\,d^5\,\mathrm{Cos}[5\,e+6\,f\,x]+48\,\mathbb{i}\,c^2\,d^6\,\mathrm{Cos}[5\,e+6\,f\,x]+$$
$$112\,c\,d^7\,\mathrm{Cos}[5\,e+6\,f\,x]-32\,\mathbb{i}\,d^8\,\mathrm{Cos}[5\,e+6\,f\,x]+2\,c^8\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]+$$
$$8\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]-8\,c^6\,d^2\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]+88\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]+$$
$$140\,c^4\,d^4\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]-40\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]+120\,c^2\,d^6\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]-$$
$$120\,\mathbb{i}\,c\,d^7\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]-30\,d^8\,f\,x\,\mathrm{Cos}[5\,e+6\,f\,x]+2\,c^8\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+$$
$$4\,\mathbb{i}\,c^7\,d\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+4\,c^6\,d^2\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+92\,\mathbb{i}\,c^5\,d^3\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+$$
$$320\,c^4\,d^4\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]-500\,\mathbb{i}\,c^3\,d^5\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]-420\,c^2\,d^6\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+$$
$$180\,\mathbb{i}\,c\,d^7\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+30\,d^8\,f\,x\,\mathrm{Cos}[7\,e+6\,f\,x]+6\,\mathbb{i}\,c^7\,d\,\mathrm{Sin}[e]-$$
$$14\,c^6\,d^2\,\mathrm{Sin}[e]+18\,\mathbb{i}\,c^5\,d^3\,\mathrm{Sin}[e]-42\,c^4\,d^4\,\mathrm{Sin}[e]+18\,\mathbb{i}\,c^3\,d^5\,\mathrm{Sin}[e]-42\,c^2\,d^6\,\mathrm{Sin}[e]+$$
$$6\,\mathbb{i}\,c\,d^7\,\mathrm{Sin}[e]-14\,d^8\,\mathrm{Sin}[e]-4\,c^8\,\mathrm{Sin}[e+2\,f\,x]-11\,\mathbb{i}\,c^7\,d\,\mathrm{Sin}[e+2\,f\,x]-$$
$$27\,c^6\,d^2\,\mathrm{Sin}[e+2\,f\,x]-33\,\mathbb{i}\,c^5\,d^3\,\mathrm{Sin}[e+2\,f\,x]-57\,c^4\,d^4\,\mathrm{Sin}[e+2\,f\,x]-$$
$$33\,\mathbb{i}\,c^3\,d^5\,\mathrm{Sin}[e+2\,f\,x]-49\,c^2\,d^6\,\mathrm{Sin}[e+2\,f\,x]-11\,\mathbb{i}\,c\,d^7\,\mathrm{Sin}[e+2\,f\,x]-$$
$$15\,d^8\,\mathrm{Sin}[e+2\,f\,x]+2\,\mathbb{i}\,c^8\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-16\,c^7\,d\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-$$
$$56\,\mathbb{i}\,c^6\,d^2\,f\,x\,\mathrm{Sin}[e+2\,f\,x]+32\,c^5\,d^3\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-20\,\mathbb{i}\,c^4\,d^4\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-$$
$$80\,c^3\,d^5\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-120\,\mathbb{i}\,c^2\,d^6\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-30\,\mathbb{i}\,d^8\,f\,x\,\mathrm{Sin}[e+2\,f\,x]-$$
$$4\,c^8\,\mathrm{Sin}[3\,e+2\,f\,x]-\mathbb{i}\,c^7\,d\,\mathrm{Sin}[3\,e+2\,f\,x]-41\,c^6\,d^2\,\mathrm{Sin}[3\,e+2\,f\,x]+$$
$$41\,\mathbb{i}\,c^5\,d^3\,\mathrm{Sin}[3\,e+2\,f\,x]+25\,c^4\,d^4\,\mathrm{Sin}[3\,e+2\,f\,x]+133\,\mathbb{i}\,c^3\,d^5\,\mathrm{Sin}[3\,e+2\,f\,x]+$$
$$109\,c^2\,d^6\,\mathrm{Sin}[3\,e+2\,f\,x]+91\,\mathbb{i}\,c\,d^7\,\mathrm{Sin}[3\,e+2\,f\,x]+47\,d^8\,\mathrm{Sin}[3\,e+2\,f\,x]+$$
$$2\,\mathbb{i}\,c^8\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]-12\,c^7\,d\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]-28\,\mathbb{i}\,c^6\,d^2\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]-$$
$$52\,c^5\,d^3\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]-100\,c^3\,d^5\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]+60\,\mathbb{i}\,c^2\,d^6\,f\,x\,\mathrm{Sin}[3\,e+2\,f\,x]-$$

$60\, c\, d^7\, f\, x\, \mathrm{Sin}[3e+2fx] + 30\, i\, d^8\, f\, x\, \mathrm{Sin}[3e+2fx] - 2\, c^8\, \mathrm{Sin}[3e+4fx] - 2\, i\, c^7\, d\, \mathrm{Sin}[3e+4fx] - 22\, c^6\, d^2\, \mathrm{Sin}[3e+4fx] + 18\, i\, c^5\, d^3\, \mathrm{Sin}[3e+4fx] - 110\, c^4\, d^4\, \mathrm{Sin}[3e+4fx] + 10\, i\, c^3\, d^5\, \mathrm{Sin}[3e+4fx] - 130\, c^2\, d^6\, \mathrm{Sin}[3e+4fx] - 10\, i\, c\, d^7\, \mathrm{Sin}[3e+4fx] - 40\, d^8\, \mathrm{Sin}[3e+4fx] + 4\, i\, c^8\, f\, x\, \mathrm{Sin}[3e+4fx] - 24\, c^7\, d\, f\, x\, \mathrm{Sin}[3e+4fx] - 56\, i\, c^6\, d^2\, f\, x\, \mathrm{Sin}[3e+4fx] - 104\, c^5\, d^3\, f\, x\, \mathrm{Sin}[3e+4fx] - 200\, c^3\, d^5\, f\, x\, \mathrm{Sin}[3e+4fx] + 120\, i\, c^2\, d^6\, f\, x\, \mathrm{Sin}[3e+4fx] - 120\, c\, d^7\, f\, x\, \mathrm{Sin}[3e+4fx] + 60\, i\, d^8\, f\, x\, \mathrm{Sin}[3e+4fx] - 2\, c^8\, \mathrm{Sin}[5e+4fx] + 2\, i\, c^7\, d\, \mathrm{Sin}[5e+4fx] - 22\, c^6\, d^2\, \mathrm{Sin}[5e+4fx] + 62\, i\, c^5\, d^3\, \mathrm{Sin}[5e+4fx] + 130\, c^4\, d^4\, \mathrm{Sin}[5e+4fx] - 74\, i\, c^3\, d^5\, \mathrm{Sin}[5e+4fx] + 126\, c^2\, d^6\, \mathrm{Sin}[5e+4fx] - 134\, i\, c\, d^7\, \mathrm{Sin}[5e+4fx] - 24\, d^8\, \mathrm{Sin}[5e+4fx] + 4\, i\, c^8\, f\, x\, \mathrm{Sin}[5e+4fx] - 16\, c^7\, d\, f\, x\, \mathrm{Sin}[5e+4fx] - 16\, i\, c^6\, d^2\, f\, x\, \mathrm{Sin}[5e+4fx] - 176\, c^5\, d^3\, f\, x\, \mathrm{Sin}[5e+4fx] + 280\, i\, c^4\, d^4\, f\, x\, \mathrm{Sin}[5e+4fx] + 80\, c^3\, d^5\, f\, x\, \mathrm{Sin}[5e+4fx] + 240\, i\, c^2\, d^6\, f\, x\, \mathrm{Sin}[5e+4fx] + 240\, c\, d^7\, f\, x\, \mathrm{Sin}[5e+4fx] - 60\, i\, d^8\, f\, x\, \mathrm{Sin}[5e+4fx] - 80\, c^4\, d^4\, \mathrm{Sin}[5e+6fx] + 112\, i\, c^3\, d^5\, \mathrm{Sin}[5e+6fx] - 48\, c^2\, d^6\, \mathrm{Sin}[5e+6fx] + 112\, i\, c\, d^7\, \mathrm{Sin}[5e+6fx] + 32\, d^8\, \mathrm{Sin}[5e+6fx] + 2\, i\, c^8\, f\, x\, \mathrm{Sin}[5e+6fx] - 8\, c^7\, d\, f\, x\, \mathrm{Sin}[5e+6fx] - 8\, i\, c^6\, d^2\, f\, x\, \mathrm{Sin}[5e+6fx] - 88\, c^5\, d^3\, f\, x\, \mathrm{Sin}[5e+6fx] + 140\, i\, c^4\, d^4\, f\, x\, \mathrm{Sin}[5e+6fx] + 40\, c^3\, d^5\, f\, x\, \mathrm{Sin}[5e+6fx] + 120\, i\, c^2\, d^6\, f\, x\, \mathrm{Sin}[5e+6fx] + 120\, c\, d^7\, f\, x\, \mathrm{Sin}[5e+6fx] - 30\, i\, d^8\, f\, x\, \mathrm{Sin}[5e+6fx] + 2\, i\, c^8\, f\, x\, \mathrm{Sin}[7e+6fx] - 4\, c^7\, d\, f\, x\, \mathrm{Sin}[7e+6fx] + 4\, i\, c^6\, d^2\, f\, x\, \mathrm{Sin}[7e+6fx] - 92\, c^5\, d^3\, f\, x\, \mathrm{Sin}[7e+6fx] + 320\, i\, c^4\, d^4\, f\, x\, \mathrm{Sin}[7e+6fx] + 500\, c^3\, d^5\, f\, x\, \mathrm{Sin}[7e+6fx] - 420\, i\, c^2\, d^6\, f\, x\, \mathrm{Sin}[7e+6fx] - 180\, c\, d^7\, f\, x\, \mathrm{Sin}[7e+6fx] + 30\, i\, d^8\, f\, x\, \mathrm{Sin}[7e+6fx])\Big) \Big/$

$\Big((c - i\, d)^3\, (c + i\, d)^5\, f\, (c\, \mathrm{Cos}[e] + d\, \mathrm{Sin}[e])\, (c\, \mathrm{Cos}[e+fx] + d\, \mathrm{Sin}[e+fx])^2\, (a + i\, a\, \mathrm{Tan}[e+fx])^2\Big)$

Problem 1100: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a + i\, a\, \mathrm{Tan}[e+fx])^3\, (c + d\, \mathrm{Tan}[e+fx])^3}\, dx$$

Optimal (type 3, 448 leaves, 7 steps):

$$\frac{(c^6 + 6\, i\, c^5\, d - 15\, c^4\, d^2 - 20\, i\, c^3\, d^3 - 105\, c^2\, d^4 + 150\, i\, c\, d^5 + 55\, d^6)\, x}{8\, a^3\, (c - i\, d)^3\, (c + i\, d)^6} - \frac{d^4\, (15\, c^2 - 18\, i\, c\, d - 7\, d^2)\, \mathrm{Log}[c\, \mathrm{Cos}[e+fx] + d\, \mathrm{Sin}[e+fx]]}{a^3\, (c + i\, d)^6\, (i\, c + d)^3\, f} + \frac{d\, (c^3 + 6\, i\, c^2\, d - 17\, c\, d^2 + 28\, i\, d^3)}{8\, a^3\, (c - i\, d)\, (c + i\, d)^4\, f\, (c + d\, \mathrm{Tan}[e+fx])^2} - \frac{1}{6\, (i\, c - d)\, f\, (a + i\, a\, \mathrm{Tan}[e+fx])^3\, (c + d\, \mathrm{Tan}[e+fx])^2} + \frac{3\, i\, c - 13\, d}{24\, a\, (c + i\, d)^2\, f\, (a + i\, a\, \mathrm{Tan}[e+fx])^2\, (c + d\, \mathrm{Tan}[e+fx])^2} + \frac{3\, c^2 + 18\, i\, c\, d - 55\, d^2}{24\, (i\, c - d)^3\, f\, (a^3 + i\, a^3\, \mathrm{Tan}[e+fx])\, (c + d\, \mathrm{Tan}[e+fx])^2} + \frac{d\, (c^4 + 6\, i\, c^3\, d - 16\, c^2\, d^2 + 94\, i\, c\, d^3 + 55\, d^4)}{8\, a^3\, (c - i\, d)^2\, (c + i\, d)^5\, f\, (c + d\, \mathrm{Tan}[e+fx])}$$

Result (type 3, 5726 leaves):

$$\left(\text{Sec}[e+f x]^3 \left(15 c^2 d^4 \text{Cos}\left[\frac{3 e}{2}\right]-18 i c d^5 \text{Cos}\left[\frac{3 e}{2}\right]-7 d^6 \text{Cos}\left[\frac{3 e}{2}\right]+15 i c^2 d^4 \text{Sin}\left[\frac{3 e}{2}\right]+18 c d^5 \text{Sin}\left[\frac{3 e}{2}\right]-7 i d^6 \text{Sin}\left[\frac{3 e}{2}\right]\right) \left(\text{ArcTan}\left[\frac{-3 c^2 d \text{Cos}[f x]+d^3 \text{Cos}[f x]-c^3 \text{Sin}[f x]+3 c d^2 \text{Sin}[f x]}{c^3 \text{Cos}[f x]-3 c d^2 \text{Cos}[f x]-3 c^2 d \text{Sin}[f x]+d^3 \text{Sin}[f x]}\right] \text{Cos}\left[\frac{3 e}{2}\right]+i \text{ArcTan}\left[\frac{-3 c^2 d \text{Cos}[f x]+d^3 \text{Cos}[f x]-c^3 \text{Sin}[f x]+3 c d^2 \text{Sin}[f x]}{c^3 \text{Cos}[f x]-3 c d^2 \text{Cos}[f x]-3 c^2 d \text{Sin}[f x]+d^3 \text{Sin}[f x]}\right] \text{Sin}\left[\frac{3 e}{2}\right]\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3\right) \Big/ \left((c-i d)^3 (c+i d)^6 f (a+i a \text{Tan}[e+f x])^3\right)+$$

$$\left(\text{Sec}[e+f x]^3 \left(15 c^2 d^4 \text{Cos}\left[\frac{3 e}{2}\right]-18 i c d^5 \text{Cos}\left[\frac{3 e}{2}\right]-7 d^6 \text{Cos}\left[\frac{3 e}{2}\right]+15 i c^2 d^4 \text{Sin}\left[\frac{3 e}{2}\right]+18 c d^5 \text{Sin}\left[\frac{3 e}{2}\right]-7 i d^6 \text{Sin}\left[\frac{3 e}{2}\right]\right) \left(-\frac{1}{2} i \text{Cos}\left[\frac{3 e}{2}\right] \text{Log}\left[(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right]+\frac{1}{2} \text{Log}\left[(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right] \text{Sin}\left[\frac{3 e}{2}\right]\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3\right) \Big/ \left((c-i d)^3 (c+i d)^6 f (a+i a \text{Tan}[e+f x])^3\right)+\frac{1}{(a+i a \text{Tan}[e+f x])^3}$$

$$x \text{Sec}[e+f x]^3 \left(\frac{15 c^2 d^4 \text{Cos}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}-\frac{18 i c d^5 \text{Cos}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}-\frac{7 d^6 \text{Cos}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}+\frac{30 i c^2 d^4 \text{Cos}[e] \text{Sin}[e]}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}+\frac{36 c d^5 \text{Cos}[e] \text{Sin}[e]}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}-\frac{14 i d^6 \text{Cos}[e] \text{Sin}[e]}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}-\frac{15 c^2 d^4 \text{Sin}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}+\frac{18 i c d^5 \text{Sin}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}+\frac{7 d^6 \text{Sin}[e]^2}{(c-i d)^3 (c+i d)^5 (c \text{Cos}[e]+d \text{Sin}[e])}+\left(\left(-15 c^3 d^4+3 i c^2 d^5-11 c d^6+7 i d^7+15 c^3 d^4 \text{Cos}[2 e]-33 i c^2 d^5 \text{Cos}[2 e]-25 c d^6 \text{Cos}[2 e]+7 i d^7 \text{Cos}[2 e]+15 i c^3 d^4 \text{Sin}[2 e]+33 c^2 d^5 \text{Sin}[2 e]-25 i c d^6 \text{Sin}[2 e]-7 d^7 \text{Sin}[2 e]\right) (\text{Cos}[3 e]+i \text{Sin}[3 e])\right) \Big/ \left((c-i d)^3 (c+i d)^6 (c+i d+c \text{Cos}[2 e]-i d \text{Cos}[2 e]+i c \text{Sin}[2 e]+d \text{Sin}[2 e])\right)\right) (\text{Cos}[f x]+i \text{Sin}[f x])^3+$$

$$\left(\text{Sec}[e+f x]^3 (\text{Cos}[f x]+i \text{Sin}[f x])^3 \left(\frac{1}{768} \text{Cos}[3 e+6 f x]-\frac{1}{768} i \text{Sin}[3 e+6 f x]\right)\right.$$

$$\left(26 i c^9 \text{Cos}[e]-72 c^8 d \text{Cos}[e]+32 i c^7 d^2 \text{Cos}[e]-216 c^6 d^3 \text{Cos}[e]-60 i c^5 d^4 \text{Cos}[e]-216 c^4 d^5 \text{Cos}[e]-112 i c^3 d^6 \text{Cos}[e]-72 c^2 d^7 \text{Cos}[e]-46 i c d^8 \text{Cos}[e]+40 i c^9 \text{Cos}[e+2 f x]-180 c^8 d \text{Cos}[e+2 f x]-200 i c^7 d^2 \text{Cos}[e+2 f x]-360 c^6 d^3 \text{Cos}[e+2 f x]-840 i c^5 d^4 \text{Cos}[e+2 f x]-920 i c^3 d^6 \text{Cos}[e+2 f x]+360 c^2 d^7 \text{Cos}[e+2 f x]-320 i c d^8 \text{Cos}[e+2 f x]+180 d^9 \text{Cos}[e+2 f x]+40 i c^9 \text{Cos}[3 e+2 f x]-108 c^8 d \text{Cos}[3 e+2 f x]+72 i c^7 d^2 \text{Cos}[3 e+2 f x]-\right.$$

$504 c^6 d^3 \text{Cos}[3 e+2 f x]-24 \mathbb{i} c^5 d^4 \text{Cos}[3 e+2 f x]-864 c^4 d^5 \text{Cos}[3 e+2 f x]-$
$104 \mathbb{i} c^3 d^6 \text{Cos}[3 e+2 f x]-648 c^2 d^7 \text{Cos}[3 e+2 f x]-48 \mathbb{i} c d^8 \text{Cos}[3 e+2 f x]-$
$180 d^9 \text{Cos}[3 e+2 f x]+45 \mathbb{i} c^9 \text{Cos}[3 e+4 f x]-189 c^8 d \text{Cos}[3 e+4 f x]-$
$72 \mathbb{i} c^7 d^2 \text{Cos}[3 e+4 f x]-1008 c^6 d^3 \text{Cos}[3 e+4 f x]-486 \mathbb{i} c^5 d^4 \text{Cos}[3 e+4 f x]-$
$1890 c^4 d^5 \text{Cos}[3 e+4 f x]-576 \mathbb{i} c^3 d^6 \text{Cos}[3 e+4 f x]-1512 c^2 d^7 \text{Cos}[3 e+4 f x]-$
$207 \mathbb{i} c d^8 \text{Cos}[3 e+4 f x]-441 d^9 \text{Cos}[3 e+4 f x]+12 c^9 f x \text{Cos}[3 e+4 f x]+$
$108 \mathbb{i} c^8 d f x \text{Cos}[3 e+4 f x]-432 c^7 d^2 f x \text{Cos}[3 e+4 f x]-1008 \mathbb{i} c^6 d^3 f x \text{Cos}[3 e+4 f x]+$
$72 c^5 d^4 f x \text{Cos}[3 e+4 f x]-1080 \mathbb{i} c^4 d^5 f x \text{Cos}[3 e+4 f x]-1200 c^3 d^6 f x \text{Cos}[3 e+4 f x]-$
$2160 \mathbb{i} c^2 d^7 f x \text{Cos}[3 e+4 f x]-180 c d^8 f x \text{Cos}[3 e+4 f x]-660 \mathbb{i} d^9 f x \text{Cos}[3 e+4 f x]+$
$45 \mathbb{i} c^9 \text{Cos}[5 e+4 f x]-99 c^8 d \text{Cos}[5 e+4 f x]+216 \mathbb{i} c^7 d^2 \text{Cos}[5 e+4 f x]-$
$864 c^6 d^3 \text{Cos}[5 e+4 f x]+1386 \mathbb{i} c^5 d^4 \text{Cos}[5 e+4 f x]+162 c^4 d^5 \text{Cos}[5 e+4 f x]+$
$2880 \mathbb{i} c^3 d^6 \text{Cos}[5 e+4 f x]+1944 c^2 d^7 \text{Cos}[5 e+4 f x]+1665 \mathbb{i} c d^8 \text{Cos}[5 e+4 f x]+$
$1017 d^9 \text{Cos}[5 e+4 f x]+12 c^9 f x \text{Cos}[5 e+4 f x]+84 \mathbb{i} c^8 d f x \text{Cos}[5 e+4 f x]-$
$240 c^7 d^2 f x \text{Cos}[5 e+4 f x]-336 \mathbb{i} c^6 d^3 f x \text{Cos}[5 e+4 f x]-1272 c^5 d^4 f x \text{Cos}[5 e+4 f x]+$
$120 \mathbb{i} c^4 d^5 f x \text{Cos}[5 e+4 f x]-2160 c^3 d^6 f x \text{Cos}[5 e+4 f x]+1200 \mathbb{i} c^2 d^7 f x \text{Cos}[5 e+4 f x]-$
$1140 c d^8 f x \text{Cos}[5 e+4 f x]+660 \mathbb{i} d^9 f x \text{Cos}[5 e+4 f x]+18 \mathbb{i} c^9 \text{Cos}[5 e+6 f x]-$
$54 c^8 d \text{Cos}[5 e+6 f x]+72 \mathbb{i} c^7 d^2 \text{Cos}[5 e+6 f x]-504 c^6 d^3 \text{Cos}[5 e+6 f x]+$
$684 \mathbb{i} c^5 d^4 \text{Cos}[5 e+6 f x]-1764 c^4 d^5 \text{Cos}[5 e+6 f x]+840 \mathbb{i} c^3 d^6 \text{Cos}[5 e+6 f x]-$
$1848 c^2 d^7 \text{Cos}[5 e+6 f x]+210 \mathbb{i} c d^8 \text{Cos}[5 e+6 f x]-534 d^9 \text{Cos}[5 e+6 f x]+$
$24 c^9 f x \text{Cos}[5 e+6 f x]+168 \mathbb{i} c^8 d f x \text{Cos}[5 e+6 f x]-480 c^7 d^2 f x \text{Cos}[5 e+6 f x]-$
$672 \mathbb{i} c^6 d^3 f x \text{Cos}[5 e+6 f x]-2544 c^5 d^4 f x \text{Cos}[5 e+6 f x]+240 \mathbb{i} c^4 d^5 f x \text{Cos}[5 e+6 f x]-$
$4320 c^3 d^6 f x \text{Cos}[5 e+6 f x]+2400 \mathbb{i} c^2 d^7 f x \text{Cos}[5 e+6 f x]-$
$2280 c d^8 f x \text{Cos}[5 e+6 f x]+1320 \mathbb{i} d^9 f x \text{Cos}[5 e+6 f x]+18 \mathbb{i} c^9 \text{Cos}[7 e+6 f x]-$
$18 c^8 d \text{Cos}[7 e+6 f x]+144 \mathbb{i} c^7 d^2 \text{Cos}[7 e+6 f x]-288 c^6 d^3 \text{Cos}[7 e+6 f x]+$
$1476 \mathbb{i} c^5 d^4 \text{Cos}[7 e+6 f x]+2700 c^4 d^5 \text{Cos}[7 e+6 f x]-1248 \mathbb{i} c^3 d^6 \text{Cos}[7 e+6 f x]+$
$2352 c^2 d^7 \text{Cos}[7 e+6 f x]-2598 \mathbb{i} c d^8 \text{Cos}[7 e+6 f x]-618 d^9 \text{Cos}[7 e+6 f x]+$
$24 c^9 f x \text{Cos}[7 e+6 f x]+120 \mathbb{i} c^8 d f x \text{Cos}[7 e+6 f x]-192 c^7 d^2 f x \text{Cos}[7 e+6 f x]-$
$3216 c^5 d^4 f x \text{Cos}[7 e+6 f x]+6000 \mathbb{i} c^4 d^5 f x \text{Cos}[7 e+6 f x]+1920 c^3 d^6 f x \text{Cos}[7 e+6 f x]+$
$4800 \mathbb{i} c^2 d^7 f x \text{Cos}[7 e+6 f x]+4920 c d^8 f x \text{Cos}[7 e+6 f x]-1320 \mathbb{i} d^9 f x \text{Cos}[7 e+6 f x]-$
$1152 c^4 d^5 \text{Cos}[7 e+8 f x]+1728 \mathbb{i} c^3 d^6 \text{Cos}[7 e+8 f x]-576 c^2 d^7 \text{Cos}[7 e+8 f x]+$
$1728 \mathbb{i} c d^8 \text{Cos}[7 e+8 f x]+576 d^9 \text{Cos}[7 e+8 f x]+12 c^9 f x \text{Cos}[7 e+8 f x]+$
$60 \mathbb{i} c^8 d f x \text{Cos}[7 e+8 f x]-96 c^7 d^2 f x \text{Cos}[7 e+8 f x]-1608 c^5 d^4 f x \text{Cos}[7 e+8 f x]+$
$3000 \mathbb{i} c^4 d^5 f x \text{Cos}[7 e+8 f x]+960 c^3 d^6 f x \text{Cos}[7 e+8 f x]+2400 \mathbb{i} c^2 d^7 f x \text{Cos}[7 e+8 f x]+$
$2460 c d^8 f x \text{Cos}[7 e+8 f x]-660 \mathbb{i} d^9 f x \text{Cos}[7 e+8 f x]+12 c^9 f x \text{Cos}[9 e+8 f x]+$
$36 \mathbb{i} c^8 d f x \text{Cos}[9 e+8 f x]+96 \mathbb{i} c^6 d^3 f x \text{Cos}[9 e+8 f x]-1512 c^5 d^4 f x \text{Cos}[9 e+8 f x]+$
$6120 \mathbb{i} c^4 d^5 f x \text{Cos}[9 e+8 f x]+10080 c^3 d^6 f x \text{Cos}[9 e+8 f x]-$
$8640 \mathbb{i} c^2 d^7 f x \text{Cos}[9 e+8 f x]-3780 c d^8 f x \text{Cos}[9 e+8 f x]+660 \mathbb{i} d^9 f x \text{Cos}[9 e+8 f x]+$
$26 \mathbb{i} c^8 d \text{Sin}[e]-72 c^7 d^2 \text{Sin}[e]+32 \mathbb{i} c^6 d^3 \text{Sin}[e]-216 c^5 d^4 \text{Sin}[e]-$
$60 \mathbb{i} c^4 d^5 \text{Sin}[e]-216 c^3 d^6 \text{Sin}[e]-112 \mathbb{i} c^2 d^7 \text{Sin}[e]-72 c d^8 \text{Sin}[e]-$
$46 \mathbb{i} d^9 \text{Sin}[e]-36 c^9 \text{Sin}[e+2 f x]-176 \mathbb{i} c^8 d \text{Sin}[e+2 f x]+216 c^7 d^2 \text{Sin}[e+2 f x]-$
$344 \mathbb{i} c^6 d^3 \text{Sin}[e+2 f x]+864 c^5 d^4 \text{Sin}[e+2 f x]+24 \mathbb{i} c^4 d^5 \text{Sin}[e+2 f x]+$
$936 c^3 d^6 \text{Sin}[e+2 f x]+376 \mathbb{i} c^2 d^7 \text{Sin}[e+2 f x]+324 c d^8 \text{Sin}[e+2 f x]+$
$184 \mathbb{i} d^9 \text{Sin}[e+2 f x]-36 c^9 \text{Sin}[3 e+2 f x]-96 \mathbb{i} c^8 d \text{Sin}[3 e+2 f x]-$
$72 c^7 d^2 \text{Sin}[3 e+2 f x]-472 \mathbb{i} c^6 d^3 \text{Sin}[3 e+2 f x]-840 \mathbb{i} c^4 d^5 \text{Sin}[3 e+2 f x]+$
$72 c^3 d^6 \text{Sin}[3 e+2 f x]-648 \mathbb{i} c^2 d^7 \text{Sin}[3 e+2 f x]+36 c d^8 \text{Sin}[3 e+2 f x]-$
$184 \mathbb{i} d^9 \text{Sin}[3 e+2 f x]-45 c^9 \text{Sin}[3 e+4 f x]-189 \mathbb{i} c^8 d \text{Sin}[3 e+4 f x]+$
$72 c^7 d^2 \text{Sin}[3 e+4 f x]-1008 \mathbb{i} c^6 d^3 \text{Sin}[3 e+4 f x]+486 c^5 d^4 \text{Sin}[3 e+4 f x]-$
$1890 \mathbb{i} c^4 d^5 \text{Sin}[3 e+4 f x]+576 c^3 d^6 \text{Sin}[3 e+4 f x]-1512 \mathbb{i} c^2 d^7 \text{Sin}[3 e+4 f x]+$
$207 c d^8 \text{Sin}[3 e+4 f x]-441 \mathbb{i} d^9 \text{Sin}[3 e+4 f x]+12 \mathbb{i} c^9 f x \text{Sin}[3 e+4 f x]-$
$108 c^8 d f x \text{Sin}[3 e+4 f x]-432 \mathbb{i} c^7 d^2 f x \text{Sin}[3 e+4 f x]+1008 c^6 d^3 f x \text{Sin}[3 e+4 f x]+$
$72 \mathbb{i} c^5 d^4 f x \text{Sin}[3 e+4 f x]+1080 c^4 d^5 f x \text{Sin}[3 e+4 f x]-1200 \mathbb{i} c^3 d^6 f x \text{Sin}[3 e+4 f x]+$

$$
\begin{aligned}
&2160\, c^2 d^7 f x \,\text{Sin}[3 e+4 f x]-180\, i\, c\, d^8 f x \,\text{Sin}[3 e+4 f x]+660\, d^9 f x \,\text{Sin}[3 e+4 f x]- \\
&45\, c^9 \,\text{Sin}[5 e+4 f x]-99\, i\, c^8 d \,\text{Sin}[5 e+4 f x]-216\, c^7 d^2 \,\text{Sin}[5 e+4 f x]- \\
&864\, i\, c^6 d^3 \,\text{Sin}[5 e+4 f x]-1386\, c^5 d^4 \,\text{Sin}[5 e+4 f x]+162\, i\, c^4 d^5 \,\text{Sin}[5 e+4 f x]- \\
&2880\, c^3 d^6 \,\text{Sin}[5 e+4 f x]+1944\, i\, c^2 d^7 \,\text{Sin}[5 e+4 f x]-1665\, c\, d^8 \,\text{Sin}[5 e+4 f x]+ \\
&1017\, i\, d^9 \,\text{Sin}[5 e+4 f x]+12\, i\, c^9 f x \,\text{Sin}[5 e+4 f x]-84\, c^8 d f x \,\text{Sin}[5 e+4 f x]- \\
&240\, i\, c^7 d^2 f x \,\text{Sin}[5 e+4 f x]+336\, c^6 d^3 f x \,\text{Sin}[5 e+4 f x]-1272\, i\, c^5 d^4 f x \,\text{Sin}[5 e+4 f x]- \\
&120\, c^4 d^5 f x \,\text{Sin}[5 e+4 f x]-2160\, i\, c^3 d^6 f x \,\text{Sin}[5 e+4 f x]-1200\, c^2 d^7 f x \,\text{Sin}[5 e+4 f x]- \\
&1140\, i\, c\, d^8 f x \,\text{Sin}[5 e+4 f x]-660\, d^9 f x \,\text{Sin}[5 e+4 f x]-18\, c^9 \,\text{Sin}[5 e+6 f x]- \\
&54\, i\, c^8 d \,\text{Sin}[5 e+6 f x]-72\, c^7 d^2 \,\text{Sin}[5 e+6 f x]-504\, i\, c^6 d^3 \,\text{Sin}[5 e+6 f x]- \\
&684\, c^5 d^4 \,\text{Sin}[5 e+6 f x]-1764\, i\, c^4 d^5 \,\text{Sin}[5 e+6 f x]-840\, c^3 d^6 \,\text{Sin}[5 e+6 f x]- \\
&1848\, i\, c^2 d^7 \,\text{Sin}[5 e+6 f x]-210\, c\, d^8 \,\text{Sin}[5 e+6 f x]-534\, i\, d^9 \,\text{Sin}[5 e+6 f x]+ \\
&24\, i\, c^9 f x \,\text{Sin}[5 e+6 f x]-168\, c^8 d f x \,\text{Sin}[5 e+6 f x]-480\, i\, c^7 d^2 f x \,\text{Sin}[5 e+6 f x]+ \\
&672\, c^6 d^3 f x \,\text{Sin}[5 e+6 f x]-2544\, i\, c^5 d^4 f x \,\text{Sin}[5 e+6 f x]-240\, c^4 d^5 f x \,\text{Sin}[5 e+6 f x]- \\
&4320\, i\, c^3 d^6 f x \,\text{Sin}[5 e+6 f x]-2400\, c^2 d^7 f x \,\text{Sin}[5 e+6 f x]-2280\, i\, c\, d^8 f x \,\text{Sin}[5 e+6 f x]- \\
&1320\, d^9 f x \,\text{Sin}[5 e+6 f x]-18\, c^9 \,\text{Sin}[7 e+6 f x]-18\, i\, c^8 d \,\text{Sin}[7 e+6 f x]- \\
&144\, c^7 d^2 \,\text{Sin}[7 e+6 f x]-288\, i\, c^6 d^3 \,\text{Sin}[7 e+6 f x]-1476\, c^5 d^4 \,\text{Sin}[7 e+6 f x]+ \\
&2700\, i\, c^4 d^5 \,\text{Sin}[7 e+6 f x]+1248\, c^3 d^6 \,\text{Sin}[7 e+6 f x]+2352\, i\, c^2 d^7 \,\text{Sin}[7 e+6 f x]+ \\
&2598\, c\, d^8 \,\text{Sin}[7 e+6 f x]-618\, i\, d^9 \,\text{Sin}[7 e+6 f x]+24\, i\, c^9 f x \,\text{Sin}[7 e+6 f x]- \\
&120\, c^8 d f x \,\text{Sin}[7 e+6 f x]-192\, i\, c^7 d^2 f x \,\text{Sin}[7 e+6 f x]-3216\, i\, c^5 d^4 f x \,\text{Sin}[7 e+6 f x]- \\
&6000\, c^4 d^5 f x \,\text{Sin}[7 e+6 f x]+1920\, i\, c^3 d^6 f x \,\text{Sin}[7 e+6 f x]- \\
&4800\, c^2 d^7 f x \,\text{Sin}[7 e+6 f x]+4920\, i\, c\, d^8 f x \,\text{Sin}[7 e+6 f x]+1320\, d^9 f x \,\text{Sin}[7 e+6 f x]- \\
&1152\, i\, c^4 d^5 \,\text{Sin}[7 e+8 f x]-1728\, c^3 d^6 \,\text{Sin}[7 e+8 f x]-576\, i\, c^2 d^7 \,\text{Sin}[7 e+8 f x]- \\
&1728\, c\, d^8 \,\text{Sin}[7 e+8 f x]+576\, i\, d^9 \,\text{Sin}[7 e+8 f x]+12\, i\, c^9 f x \,\text{Sin}[7 e+8 f x]- \\
&60\, c^8 d f x \,\text{Sin}[7 e+8 f x]-96\, i\, c^7 d^2 f x \,\text{Sin}[7 e+8 f x]-1608\, i\, c^5 d^4 f x \,\text{Sin}[7 e+8 f x]- \\
&3000\, c^4 d^5 f x \,\text{Sin}[7 e+8 f x]+960\, i\, c^3 d^6 f x \,\text{Sin}[7 e+8 f x]-2400\, c^2 d^7 f x \,\text{Sin}[7 e+8 f x]+ \\
&2460\, i\, c\, d^8 f x \,\text{Sin}[7 e+8 f x]+660\, d^9 f x \,\text{Sin}[7 e+8 f x]+12\, i\, c^9 f x \,\text{Sin}[9 e+8 f x]- \\
&36\, c^8 d f x \,\text{Sin}[9 e+8 f x]-96\, c^6 d^3 f x \,\text{Sin}[9 e+8 f x]-1512\, i\, c^5 d^4 f x \,\text{Sin}[9 e+8 f x]- \\
&6120\, c^4 d^5 f x \,\text{Sin}[9 e+8 f x]+10080\, i\, c^3 d^6 f x \,\text{Sin}[9 e+8 f x]+ \\
&8640\, c^2 d^7 f x \,\text{Sin}[9 e+8 f x]-3780\, i\, c\, d^8 f x \,\text{Sin}[9 e+8 f x]-660\, d^9 f x \,\text{Sin}[9 e+8 f x]\Big)\Big)\Big/ \\
&\Big((c-i\, d)^3 (c+i\, d)^6 f\, (c \,\text{Cos}[e]+d \,\text{Sin}[e])\, (c \,\text{Cos}[e+f x]+d \,\text{Sin}[e+f x])^2 \\
&\quad (a+i\, a \,\text{Tan}[e+f x])^3\Big)
\end{aligned}
$$

Problem 1101: Result more than twice size of optimal antiderivative.

$$\int (a+i\, a \,\text{Tan}[e+f x])^3 \sqrt{c+d \,\text{Tan}[e+f x]}\, dx$$

Optimal (type 3, 150 leaves, 6 steps):

$$
-\frac{8\, i\, a^3 \sqrt{c-i\, d}\ \text{ArcTanh}\left[\frac{\sqrt{c+d \,\text{Tan}[e+f x]}}{\sqrt{c-i\, d}}\right]}{f}+\frac{8\, i\, a^3 \sqrt{c+d \,\text{Tan}[e+f x]}}{f}+
$$

$$
\frac{4\, a^3\, (i\, c-6\, d)\, (c+d \,\text{Tan}[e+f x])^{3/2}}{15\, d^2 f}-\frac{2\, (a^3+i\, a^3 \,\text{Tan}[e+f x])\, (c+d \,\text{Tan}[e+f x])^{3/2}}{5\, d f}
$$

Result (type 3, 403 leaves):

$$-\left(\left(\left(4\,i\,\sqrt{c-i\,d}\,\operatorname{Cos}[e+f\,x]^3\,\operatorname{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\,e^{-2\,i\,e}\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]\left(\operatorname{Cos}[3\,e]-i\operatorname{Sin}[3\,e]\right)\left(a+i\,a\operatorname{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\left(\operatorname{Cos}[f\,x]+i\operatorname{Sin}[f\,x]\right)^3\right)\right)+$$

$$\frac{1}{f\left(\operatorname{Cos}[f\,x]+i\operatorname{Sin}[f\,x]\right)^3}\operatorname{Cos}[e+f\,x]^3\left(\operatorname{Sec}[e+f\,x]^2\left(-\frac{2}{5}\,i\operatorname{Cos}[3\,e]-\frac{2}{5}\operatorname{Sin}[3\,e]\right)+\operatorname{Sec}[e]\left(2\,c^2\operatorname{Cos}[e]+15\,i\,c\,d\operatorname{Cos}[e]+63\,d^2\operatorname{Cos}[e]-c\,d\operatorname{Sin}[e]+15\,i\,d^2\operatorname{Sin}[e]\right)\left(\frac{2\,i\operatorname{Cos}[3\,e]}{15\,d^2}+\frac{2\operatorname{Sin}[3\,e]}{15\,d^2}\right)+\operatorname{Sec}[e]\operatorname{Sec}[e+f\,x]\left(\frac{2\operatorname{Cos}[3\,e]}{15\,d}-\frac{2\,i\operatorname{Sin}[3\,e]}{15\,d}\right)\left(-i\,c\operatorname{Sin}[f\,x]-15\,d\operatorname{Sin}[f\,x]\right)\right)\sqrt{\operatorname{Sec}[e+f\,x]\left(c\operatorname{Cos}[e+f\,x]+d\operatorname{Sin}[e+f\,x]\right)}\left(a+i\,a\operatorname{Tan}[e+f\,x]\right)^3$$

Problem 1102: Result more than twice size of optimal antiderivative.

$$\int\left(a+i\,a\operatorname{Tan}[e+f\,x]\right)^2\sqrt{c+d\operatorname{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 100 leaves, 5 steps):

$$-\frac{4\,i\,a^2\sqrt{c-i\,d}\operatorname{ArcTanh}\left[\frac{\sqrt{c+d\operatorname{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{f}+\frac{4\,i\,a^2\sqrt{c+d\operatorname{Tan}[e+f\,x]}}{f}-\frac{2\,a^2\left(c+d\operatorname{Tan}[e+f\,x]\right)^{3/2}}{3\,d\,f}$$

Result (type 3, 214 leaves):

$$-\left(\left(2\,a^2\left(\operatorname{Cos}[2\,f\,x]+i\operatorname{Sin}[2\,f\,x]\right)\left(3\,i\sqrt{c-i\,d}\,d\operatorname{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]+\left(c-6\,i\,d\right)\sqrt{c+d\operatorname{Tan}[e+f\,x]}+d\operatorname{Tan}[e+f\,x]\sqrt{c+d\operatorname{Tan}[e+f\,x]}\right)\right)\Big/\left(3\,d\,f\left(\operatorname{Cos}[f\,x]+i\operatorname{Sin}[f\,x]\right)^2\right)\right)$$

Problem 1103: Result more than twice size of optimal antiderivative.

$$\int (a + i\, a \operatorname{Tan}[e + f x]) \sqrt{c + d \operatorname{Tan}[e + f x]}\, dx$$

Optimal (type 3, 69 leaves, 4 steps):

$$-\frac{2\, i\, a \sqrt{c - i\, d}\, \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-i\, d}}\right]}{f} + \frac{2\, i\, a \sqrt{c + d \operatorname{Tan}[e + f x]}}{f}$$

Result (type 3, 148 leaves):

$$\frac{1}{f} i\, a \left(-\sqrt{c - i\, d}\, \operatorname{Log}\left[\frac{1}{\sqrt{c - i\, d}} 2 \left(-i\, d\, e^{2 i (e+f x)} + c \left(1 + e^{2 i (e+f x)}\right) + \sqrt{c - i\, d}\, \left(1 + e^{2 i (e+f x)}\right) \sqrt{c - \frac{i\, d \left(-1 + e^{2 i (e+f x)}\right)}{1 + e^{2 i (e+f x)}}}\right)\right] + 2 \sqrt{c + d \operatorname{Tan}[e + f x]}\right)$$

Problem 1104: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c + d \operatorname{Tan}[e + f x]}}{a + i\, a \operatorname{Tan}[e + f x]}\, dx$$

Optimal (type 3, 140 leaves, 8 steps):

$$-\frac{i \sqrt{c - i\, d}\, \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-i\, d}}\right]}{2\, a\, f} + \frac{i\, c\, \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c+i\, d}}\right]}{2\, a \sqrt{c + i\, d}\, f} + \frac{i \sqrt{c + d \operatorname{Tan}[e + f x]}}{2\, f\, (a + i\, a \operatorname{Tan}[e + f x])}$$

Result (type 3, 339 leaves):

$$\left(\text{Sec}[e+f x] \left(\text{Cos}[f x]+i \text{Sin}[f x]\right)\right.$$
$$\left(-i \left(\sqrt{c-i d}\, \text{Log}\left[\frac{1}{\sqrt{c-i d}} 2 \left(-i d e^{2 i (e+f x)}+c \left(1+e^{2 i (e+f x)}\right)+\sqrt{c-i d} \left(1+e^{2 i (e+f x)}\right)\right.\right.\right.\right.$$
$$\left.\left.\sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]-\frac{1}{\sqrt{c+i d}} c\, \text{Log}\left[\frac{1}{c \sqrt{c+i d}} 8 i e^{-2 i f x}\right.$$
$$\left.\left.\left(i d+c \left(1+e^{2 i (e+f x)}\right)+\sqrt{c+i d} \left(1+e^{2 i (e+f x)}\right) \sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]\right)$$
$$\left(\text{Cos}[e]+i \text{Sin}[e]\right)+2 \text{Cos}[e+f x] \left(i \text{Cos}[f x]+\text{Sin}[f x]\right)$$
$$\left.\left.\sqrt{c+d \text{Tan}[e+f x]}\right)\right) \Big/ \left(4 f \left(a+i a \text{Tan}[e+f x]\right)\right)$$

Problem 1107: Result more than twice size of optimal antiderivative.

$$\int (a+i a \text{Tan}[e+f x])^3 (c+d \text{Tan}[e+f x])^{3/2} \, dx$$

Optimal (type 3, 181 leaves, 7 steps):

$$-\frac{8 i a^3 (c-i d)^{3/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{f}+$$
$$\frac{8 a^3 (i c+d) \sqrt{c+d \text{Tan}[e+f x]}}{f}+\frac{8 i a^3 (c+d \text{Tan}[e+f x])^{3/2}}{3 f}+$$
$$\frac{4 a^3 (i c-8 d) (c+d \text{Tan}[e+f x])^{5/2}}{35 d^2 f}-\frac{2 \left(a^3+i a^3 \text{Tan}[e+f x]\right) (c+d \text{Tan}[e+f x])^{5/2}}{7 d f}$$

Result (type 3, 499 leaves):

$$-\Bigg(\Bigg(4\,i\,(c-i\,d)^{3/2}\,\text{Cos}[e+f\,x]^3\,\text{Log}\Big[\frac{1}{\sqrt{c-i\,d}}2\,e^{-2\,i\,e}\Big(-i\,d\,e^{2\,i\,(e+f\,x)}+c\,\big(1+e^{2\,i\,(e+f\,x)}\big)+\sqrt{c-i\,d}\,\big(1+e^{2\,i\,(e+f\,x)}\big)\sqrt{c-\frac{i\,d\,\big(-1+e^{2\,i\,(e+f\,x)}\big)}{1+e^{2\,i\,(e+f\,x)}}}\Big)\Big]$$

$$(\text{Cos}[3\,e]-i\,\text{Sin}[3\,e])\,(a+i\,a\,\text{Tan}[e+f\,x])^3\Bigg)\Big/\Big(f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\Big)\Bigg)+$$

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3}\text{Cos}[e+f\,x]^3$$

$$\Big(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(8\,c\,\text{Cos}[e]-21\,i\,d\,\text{Cos}[e]+5\,d\,\text{Sin}[e])\Big(-\frac{2}{35}\,i\,\text{Cos}[3\,e]-\frac{2}{35}\,\text{Sin}[3\,e]\Big)+$$
$$\text{Sec}[e]\,\big(6\,i\,c^3\,\text{Cos}[e]-63\,c^2\,d\,\text{Cos}[e]+584\,i\,c\,d^2\,\text{Cos}[e]+483\,d^3\,\text{Cos}[e]-$$
$$3\,i\,c^2\,d\,\text{Sin}[e]-126\,c\,d^2\,\text{Sin}[e]+155\,i\,d^3\,\text{Sin}[e]\big)\Big(\frac{2\,\text{Cos}[3\,e]}{105\,d^2}-\frac{2\,i\,\text{Sin}[3\,e]}{105\,d^2}\Big)-$$
$$i\,d\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\Big(\frac{2}{7}\,\text{Cos}[3\,e]-\frac{2}{7}\,i\,\text{Sin}[3\,e]\Big)\,\text{Sin}[f\,x]+\text{Sec}[e]\,\text{Sec}[e+f\,x]$$
$$\Big(\frac{2\,\text{Cos}[3\,e]}{105\,d}-\frac{2\,i\,\text{Sin}[3\,e]}{105\,d}\Big)\big(-3\,i\,c^2\,\text{Sin}[f\,x]-126\,c\,d\,\text{Sin}[f\,x]+155\,i\,d^2\,\text{Sin}[f\,x]\big)\Big)$$
$$\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^3$$

Problem 1108: Result more than twice size of optimal antiderivative.

$$\int(a+i\,a\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 131 leaves, 6 steps):

$$-\frac{4\,i\,a^2\,(c-i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\Big]}{f}+\frac{4\,a^2\,(i\,c+d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+$$
$$\frac{4\,i\,a^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}-\frac{2\,a^2\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}{5\,d\,f}$$

Result (type 3, 392 leaves):

$$-\left(\left(2\,\mathrm{i}\,(c-\mathrm{i}\,d)^{3/2}\,\mathrm{Cos}[e+f\,x]^2\,\mathrm{Log}\Big[\frac{1}{\sqrt{c-\mathrm{i}\,d}}\,2\left(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+\sqrt{c-\mathrm{i}\,d}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\Big]\right.\right.$$

$$\left.\left(\mathrm{Cos}[2\,e]-\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)\Big/$$

$$\left.\left(f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\right)\right)+\frac{1}{f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2}$$

$$\mathrm{Cos}[e+f\,x]^2\,\Big(\mathrm{Sec}[e]\,\left(3\,c^2\,\mathrm{Cos}[e]-40\,\mathrm{i}\,c\,d\,\mathrm{Cos}[e]-33\,d^2\,\mathrm{Cos}[e]+6\,c\,d\,\mathrm{Sin}[e]-10\,\mathrm{i}\,d^2\,\mathrm{Sin}[e]\right)$$

$$\left(-\frac{2\,\mathrm{Cos}[2\,e]}{15\,d}+\frac{2\,\mathrm{i}\,\mathrm{Sin}[2\,e]}{15\,d}\right)+\mathrm{Sec}[e+f\,x]^2\,\left(-\frac{2}{5}\,d\,\mathrm{Cos}[2\,e]+\frac{2}{5}\,\mathrm{i}\,d\,\mathrm{Sin}[2\,e]\right)+$$

$$\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]\,\left(-\frac{4}{15}\,\mathrm{Cos}[2\,e]+\frac{4}{15}\,\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\,\left(3\,c\,\mathrm{Sin}[f\,x]-5\,\mathrm{i}\,d\,\mathrm{Sin}[f\,x]\right)\Big)$$

$$\sqrt{\mathrm{Sec}[e+f\,x]\,\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)}\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^2$$

Problem 1110: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 153 leaves, 8 steps):

$$-\frac{\mathrm{i}\,(c-\mathrm{i}\,d)^{3/2}\,\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\Big]}{2\,a\,f}+$$

$$\frac{\sqrt{c+\mathrm{i}\,d}\,\left(\mathrm{i}\,c+2\,d\right)\,\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\Big]}{2\,a\,f}+\frac{(\mathrm{i}\,c-d)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{2\,f\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 376 leaves):

$$\frac{1}{4\,f\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])}\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])\,\Bigg(\Bigg(\Bigg(-\mathrm{i}\,(c-\mathrm{i}\,d)^{3/2}\,\mathrm{Log}\Big[\frac{1}{\sqrt{c-\mathrm{i}\,d}}\,2\,\Big(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\,\big(1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)+\sqrt{c-\mathrm{i}\,d}\,\big(1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)\sqrt{c-\frac{\mathrm{i}\,d\,\big(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\Big)\Big]+\frac{1}{\sqrt{c+\mathrm{i}\,d}}\,(\mathrm{i}\,c^2+c\,d+2\,\mathrm{i}\,d^2)\,\mathrm{Log}\Big[\Big(8\,\mathrm{i}\,e^{-2\,\mathrm{i}\,f\,x}\,\Big(\mathrm{i}\,d+c\,\big(1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)+\sqrt{c+\mathrm{i}\,d}\,\big(1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)\sqrt{c-\frac{\mathrm{i}\,d\,\big(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\Big)\Big)\Big/\Big(\sqrt{c+\mathrm{i}\,d}\,\big(c^2-\mathrm{i}\,c\,d+2\,d^2\big)\Big)\Big]\Bigg)\,(\mathrm{Cos}[e]+\mathrm{i}\,\mathrm{Sin}[e])+2\,(c+\mathrm{i}\,d)\,\mathrm{Cos}[e+f\,x]\,(\mathrm{i}\,\mathrm{Cos}[f\,x]+\mathrm{Sin}[f\,x])\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Bigg)$$

Problem 1113: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 216 leaves, 8 steps):

$$-\frac{8\,\mathrm{i}\,a^3\,(c-\mathrm{i}\,d)^{5/2}\,\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\Big]}{f}+\frac{8\,\mathrm{i}\,a^3\,(c-\mathrm{i}\,d)^2\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{f}+\frac{8\,a^3\,(\mathrm{i}\,c+d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{3\,f}+\frac{8\,\mathrm{i}\,a^3\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}{5\,f}+\frac{4\,a^3\,(\mathrm{i}\,c-10\,d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{7/2}}{63\,d^2\,f}-\frac{2\,(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{7/2}}{9\,d\,f}$$

Result (type 3, 599 leaves):

$$-\left(\left(4\,\mathbb{i}\,\left(c-\mathbb{i}\,d\right)^{5/2}\,\text{Cos}[e+f\,x]^3\,\text{Log}\left[\frac{1}{\sqrt{c-\mathbb{i}\,d}}2\,e^{-2\,\mathbb{i}\,e}\left(-\mathbb{i}\,d\,e^{2\,\mathbb{i}\,(e+f\,x)}+c\,\left(1+e^{2\,\mathbb{i}\,(e+f\,x)}\right)+\sqrt{c-\mathbb{i}\,d}\,\left(1+e^{2\,\mathbb{i}\,(e+f\,x)}\right)\sqrt{c-\frac{\mathbb{i}\,d\,\left(-1+e^{2\,\mathbb{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathbb{i}\,(e+f\,x)}}}\right)\right]\right.\right.$$

$$\left.\left.(\text{Cos}[3\,e]-\mathbb{i}\,\text{Sin}[3\,e])\,\left(a+\mathbb{i}\,a\,\text{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,\left(\text{Cos}[f\,x]+\mathbb{i}\,\text{Sin}[f\,x]\right)^3\right)\right)+$$

$$\frac{1}{f\,\left(\text{Cos}[f\,x]+\mathbb{i}\,\text{Sin}[f\,x]\right)^3}\text{Cos}[e+f\,x]^3\,\left(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,\left(75\,c^2\,\text{Cos}[e]-405\,\mathbb{i}\,c\,d\,\text{Cos}[e]-\right.\right.$$

$$\left.322\,d^2\,\text{Cos}[e]+95\,c\,d\,\text{Sin}[e]-135\,\mathbb{i}\,d^2\,\text{Sin}[e]\right)\left(-\frac{2}{315}\,\mathbb{i}\,\text{Cos}[3\,e]-\frac{2}{315}\,\text{Sin}[3\,e]\right)+$$

$$\text{Sec}[e]\,\left(10\,\mathbb{i}\,c^4\,\text{Cos}[e]-135\,c^3\,d\,\text{Cos}[e]+2007\,\mathbb{i}\,c^2\,d^2\,\text{Cos}[e]+3345\,c\,d^3\,\text{Cos}[e]-\right.$$

$$\left.1547\,\mathbb{i}\,d^4\,\text{Cos}[e]-5\,\mathbb{i}\,c^3\,d\,\text{Sin}[e]-405\,c^2\,d^2\,\text{Sin}[e]+1019\,\mathbb{i}\,c\,d^3\,\text{Sin}[e]+555\,d^4\,\text{Sin}[e]\right)$$

$$\left(\frac{2\,\text{Cos}[3\,e]}{315\,d^2}-\frac{2\,\mathbb{i}\,\text{Sin}[3\,e]}{315\,d^2}\right)+\text{Sec}[e+f\,x]^4\,\left(-\frac{2}{9}\,\mathbb{i}\,d^2\,\text{Cos}[3\,e]-\frac{2}{9}\,d^2\,\text{Sin}[3\,e]\right)+$$

$$\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\,\left(\frac{2}{63}\,\text{Cos}[3\,e]-\frac{2}{63}\,\mathbb{i}\,\text{Sin}[3\,e]\right)\,\left(-19\,\mathbb{i}\,c\,d\,\text{Sin}[f\,x]-27\,d^2\,\text{Sin}[f\,x]\right)+$$

$$\text{Sec}[e]\,\text{Sec}[e+f\,x]\,\left(\frac{2\,\text{Cos}[3\,e]}{315\,d}-\frac{2\,\mathbb{i}\,\text{Sin}[3\,e]}{315\,d}\right)$$

$$\left.\left(-5\,\mathbb{i}\,c^3\,\text{Sin}[f\,x]-405\,c^2\,d\,\text{Sin}[f\,x]+1019\,\mathbb{i}\,c\,d^2\,\text{Sin}[f\,x]+555\,d^3\,\text{Sin}[f\,x]\right)\right)$$

$$\sqrt{\text{Sec}[e+f\,x]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)}\,\left(a+\mathbb{i}\,a\,\text{Tan}[e+f\,x]\right)^3$$

Problem 1114: Result more than twice size of optimal antiderivative.

$$\int\left(a+\mathbb{i}\,a\,\text{Tan}[e+f\,x]\right)^2\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{5/2}\,dx$$

Optimal (type 3, 166 leaves, 7 steps):

$$-\frac{4\,\mathbb{i}\,a^2\,\left(c-\mathbb{i}\,d\right)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathbb{i}\,d}}\right]}{f}+\frac{4\,\mathbb{i}\,a^2\,\left(c-\mathbb{i}\,d\right)^2\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+$$

$$\frac{4\,a^2\,\left(\mathbb{i}\,c+d\right)\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{3/2}}{3\,f}+\frac{4\,\mathbb{i}\,a^2\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{5/2}}{5\,f}-\frac{2\,a^2\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{7/2}}{7\,d\,f}$$

Result (type 3, 485 leaves):

$$-\left(\left(2\,i\,(c-i\,d)^{5/2}\,\text{Cos}[e+f\,x]^2\,\text{Log}\Big[\frac{1}{\sqrt{c-i\,d}}\right.\right.$$

$$2\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\,\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\Big]$$

$$\left.\left.(\text{Cos}[2\,e]-i\,\text{Sin}[2\,e])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\right)\Big/\left(f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\right)\right)+$$

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2}\text{Cos}[e+f\,x]^2$$

$$\Big(\text{Sec}[e]\,\left(15\,c^3\,\text{Cos}[e]-322\,i\,c^2\,d\,\text{Cos}[e]-535\,c\,d^2\,\text{Cos}[e]+252\,i\,d^3\,\text{Cos}[e]+45\,c^2\,d\,\text{Sin}[e]-\right.$$

$$\left.154\,i\,c\,d^2\,\text{Sin}[e]-85\,d^3\,\text{Sin}[e]\right)\left(-\frac{2\,\text{Cos}[2\,e]}{105\,d}+\frac{2\,i\,\text{Sin}[2\,e]}{105\,d}\right)+\text{Sec}[e]\,\text{Sec}[e+f\,x]^2$$

$$(15\,i\,c\,\text{Cos}[e]+14\,d\,\text{Cos}[e]+5\,i\,d\,\text{Sin}[e])\left(\frac{2}{35}\,i\,d\,\text{Cos}[2\,e]+\frac{2}{35}\,d\,\text{Sin}[2\,e]\right)+$$

$$d^2\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\left(-\frac{2}{7}\,\text{Cos}[2\,e]+\frac{2}{7}\,i\,\text{Sin}[2\,e]\right)\text{Sin}[f\,x]+\text{Sec}[e]\,\text{Sec}[e+f\,x]$$

$$\left.\left(-\frac{2}{105}\,\text{Cos}[2\,e]+\frac{2}{105}\,i\,\text{Sin}[2\,e]\right)\left(45\,c^2\,\text{Sin}[f\,x]-154\,i\,c\,d\,\text{Sin}[f\,x]-85\,d^2\,\text{Sin}[f\,x]\right)\right)$$

$$\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^2$$

Problem 1115: Result more than twice size of optimal antiderivative.

$$\int(a+i\,a\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 131 leaves, 6 steps):

$$-\frac{2\,i\,a\,(c-i\,d)^{5/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\Big]}{f}+\frac{2\,i\,a\,(c-i\,d)^2\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+$$

$$\frac{2\,a\,(i\,c+d)\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}+\frac{2\,i\,a\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}{5\,f}$$

Result (type 3, 268 leaves):

$$\frac{1}{f}\text{Cos}[e+f x]\left(\text{Cos}[f x]-i\,\text{Sin}[f x]\right)\left(a+i\,a\,\text{Tan}[e+f x]\right)$$
$$\left(-i\left(c-i\,d\right)^{5/2}\text{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\left(-i\,d\,e^{2 i (e+f x)}+c\left(1+e^{2 i (e+f x)}\right)+\sqrt{c-i\,d}\left(1+e^{2 i (e+f x)}\right)\sqrt{c-\frac{i\,d\left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]\left(\text{Cos}[e]-i\,\text{Sin}[e]\right)+\frac{1}{15}\text{Sec}[e+f x]^2\left(i\,\text{Cos}[e]+\text{Sin}[e]\right)\left(23 c^2-35 i\,c\,d-12 d^2+\left(23 c^2-35 i\,c\,d-18 d^2\right)\text{Cos}\left[2\left(e+f x\right)\right]+\left(11 c-5 i\,d\right)d\,\text{Sin}\left[2\left(e+f x\right)\right]\right)\sqrt{c+d\,\text{Tan}[e+f x]}\right)$$

Problem 1120: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+i\,a\,\text{Tan}[e+f x]\right)^2}{\sqrt{c+d\,\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 74 leaves, 4 steps):

$$-\frac{4\,i\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}\,f}-\frac{2\,a^2\sqrt{c+d\,\text{Tan}[e+f x]}}{d\,f}$$

Result (type 3, 153 leaves):

$$\frac{1}{f}2\,a^2\left(-\frac{1}{\sqrt{c-i\,d}}i\,\text{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\left(-i\,d\,e^{2 i (e+f x)}+c\left(1+e^{2 i (e+f x)}\right)+\sqrt{c-i\,d}\left(1+e^{2 i (e+f x)}\right)\sqrt{c-\frac{i\,d\left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]-\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{d}\right)$$

Problem 1121: Result more than twice size of optimal antiderivative.

$$\int\frac{a+i\,a\,\text{Tan}[e+f x]}{\sqrt{c+d\,\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 46 leaves, 3 steps):

$$-\frac{2\,i\,a\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}\,f}$$

Result (type 3, 129 leaves):

$$-\frac{1}{\sqrt{c-\mathrm{i}\,d}\,f}\mathrm{i}\,a\,\mathrm{Log}\Big[\frac{1}{\sqrt{c-\mathrm{i}\,d}}\,2\left(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+\sqrt{c-\mathrm{i}\,d}\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\Big]$$

Problem 1125: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 139 leaves, 5 steps):

$$-\frac{8\,\mathrm{i}\,a^3\,\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\Big]}{(c-\mathrm{i}\,d)^{3/2}\,f}+\frac{2\,(c+\mathrm{i}\,d)\,\left(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[e+f\,x]\right)}{(c-\mathrm{i}\,d)\,d\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}+\frac{4\,a^3\,c\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{d^2\,(\mathrm{i}\,c+d)\,f}$$

Result (type 3, 431 leaves):

$$-\Bigg(\Bigg(\Bigg(4\,\mathrm{i}\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Log}\Big[\frac{1}{\sqrt{c-\mathrm{i}\,d}}\,2\,e^{-2\,\mathrm{i}\,e}\left(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+\sqrt{c-\mathrm{i}\,d}\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\Big]$$
$$(\mathrm{Cos}[3\,e]-\mathrm{i}\,\mathrm{Sin}[3\,e])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\Bigg)\Bigg/\left((c-\mathrm{i}\,d)^{3/2}\,f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^3\right)\Bigg)+$$
$$\Bigg(\mathrm{Cos}[e+f\,x]^3\,\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])}$$
$$\Bigg(\Bigg(\left(-2\,\mathrm{i}\,c^2\,\mathrm{Cos}[e]+c\,d\,\mathrm{Cos}[e]+\mathrm{i}\,d^2\,\mathrm{Cos}[e]-\mathrm{i}\,c\,d\,\mathrm{Sin}[e]-d^2\,\mathrm{Sin}[e]\right)$$
$$\left(\frac{2\,\mathrm{Cos}[3\,e]}{d^2}-\frac{2\,\mathrm{i}\,\mathrm{Sin}[3\,e]}{d^2}\right)\Bigg)\Bigg/\left((c-\mathrm{i}\,d)\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\right)+$$
$$\Bigg(\left(\frac{2\,\mathrm{Cos}[3\,e]}{d}-\frac{2\,\mathrm{i}\,\mathrm{Sin}[3\,e]}{d}\right)\left(\mathrm{i}\,c^2\,\mathrm{Sin}[f\,x]-2\,c\,d\,\mathrm{Sin}[f\,x]-\mathrm{i}\,d^2\,\mathrm{Sin}[f\,x]\right)\Bigg)\Bigg/$$
$$\left((c-\mathrm{i}\,d)\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\Bigg)$$
$$(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\Bigg)\Bigg/\left(f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^3\right)$$

Problem 1126: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 92 leaves, 4 steps):

$$-\frac{4\,i\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{2\,a^2\,(i\,c-d)}{d\,(i\,c+d)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 240 leaves):

$$\left(2\,a^2\,(\text{Cos}[2\,e]-i\,\text{Sin}[2\,e])\,(\text{Cos}[e+f\,x]+i\,\text{Sin}[e+f\,x])^2\left(-\frac{1}{(c-i\,d)^{3/2}}i\,\text{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]+\frac{(c+i\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{(c-i\,d)\,d\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\right)\right)\Big/\left(f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\right)$$

Problem 1127: Result more than twice size of optimal antiderivative.

$$\int\frac{a+i\,a\,\text{Tan}[e+f\,x]}{(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 76 leaves, 4 steps):

$$-\frac{2\,i\,a\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{3/2}\,f}-\frac{2\,a}{(i\,c+d)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 230 leaves):

$$\frac{1}{f}\text{Cos}[e+f\,x]\,(\text{Cos}[f\,x]-i\,\text{Sin}[f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])\left(-\frac{1}{(c-i\,d)^{3/2}}i\,\text{Log}\left[\frac{1}{\sqrt{c-i\,d}}2\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right](\text{Cos}[e]-i\,\text{Sin}[e])+\frac{2\,\text{Cos}[e+f\,x]\,(i\,\text{Cos}[e]+\text{Sin}[e])\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{(c-i\,d)\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\right)$$

Problem 1129: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+i\, a\, \text{Tan}[e+f x])^2\, (c+d\, \text{Tan}[e+f x])^{3/2}}\, dx$$

Optimal (type 3, 281 leaves, 10 steps):

$$-\frac{i\, \text{ArcTanh}\left[\frac{\sqrt{c+d\, \text{Tan}[e+f x]}}{\sqrt{c-i\, d}}\right]}{4\, a^2\, (c-i\, d)^{3/2}\, f}+\frac{\left(2\, i\, c^2-10\, c\, d-23\, i\, d^2\right) \text{ArcTanh}\left[\frac{\sqrt{c+d\, \text{Tan}[e+f x]}}{\sqrt{c+i\, d}}\right]}{8\, a^2\, (c+i\, d)^{7/2}\, f}+$$

$$\frac{d\left(2\, c^2+7\, i\, c\, d+25\, d^2\right)}{8\, a^2\, (c-i\, d)\, (c+i\, d)^3\, f\, \sqrt{c+d\, \text{Tan}[e+f x]}}+$$

$$\frac{2\, i\, c-7\, d}{8\, a^2\, (c+i\, d)^2\, f\, (1+i\, \text{Tan}[e+f x])\, \sqrt{c+d\, \text{Tan}[e+f x]}}-$$

$$\frac{1}{4\, (i\, c-d)\, f\, (a+i\, a\, \text{Tan}[e+f x])^2\, \sqrt{c+d\, \text{Tan}[e+f x]}}$$

Result (type 3, 829 leaves):

$$\frac{1}{f\, (a+i\, a\, \text{Tan}[e+f x])^2}$$

$$\text{Sec}[e+f x]^2\, (\text{Cos}[f x]+i\, \text{Sin}[f x])^2\, \sqrt{\text{Sec}[e+f x]\, (c\, \text{Cos}[e+f x]+d\, \text{Sin}[e+f x])}$$

$$\left(\frac{i\, (4\, c+11\, i\, d)\, \text{Cos}[2\, f x]}{16\, (c+i\, d)^3}+\left(\left(3\, i\, c^3\, \text{Cos}[e]-7\, c^2\, d\, \text{Cos}[e]+10\, i\, c\, d^2\, \text{Cos}[e]+32\, d^3\, \text{Cos}[e]+\right.\right.\right.$$

$$\left.\left.3\, i\, c^2\, d\, \text{Sin}[e]-7\, c\, d^2\, \text{Sin}[e]+10\, i\, d^3\, \text{Sin}[e]\right)\left(\frac{1}{16}\, \text{Cos}[2\, e]+\frac{1}{16}\, i\, \text{Sin}[2\, e]\right)\right)\Big/$$

$$\left((c-i\, d)\, (c+i\, d)^3\, (c\, \text{Cos}[e]+d\, \text{Sin}[e])\right)+\frac{\text{Cos}[4\, f x]\left(\frac{1}{16}\, i\, \text{Cos}[2\, e]+\frac{1}{16}\, \text{Sin}[2\, e]\right)}{(c+i\, d)^2}+$$

$$\frac{(4\, c+11\, i\, d)\, \text{Sin}[2\, f x]}{16\, (c+i\, d)^3}+\frac{\left(\frac{1}{16}\, \text{Cos}[2\, e]-\frac{1}{16}\, i\, \text{Sin}[2\, e]\right) \text{Sin}[4\, f x]}{(c+i\, d)^2}-$$

$$\left(2\left(\frac{1}{2}\, i\, d^4\, \text{Cos}[2\, e-f x]-\frac{1}{2}\, i\, d^4\, \text{Cos}[2\, e+f x]-\frac{1}{2}\, d^4\, \text{Sin}[2\, e-f x]+\frac{1}{2}\, d^4\, \text{Sin}[2\, e+f x]\right)\right)\Big/$$

$$\left.\left((c-i\, d)\, (c+i\, d)^3\, (c\, \text{Cos}[e]+d\, \text{Sin}[e])\, (c\, \text{Cos}[e+f x]+d\, \text{Sin}[e+f x])\right)\right)+$$

$$\left(\text{Sec}[e+f x]^2\, (\text{Cos}[2\, e]+i\, \text{Sin}[2\, e])\, (\text{Cos}[f x]+i\, \text{Sin}[f x])^2\right.$$

$$\left(-\left(\left(\left(\mathrm{i}\,\left(4\,c^3+14\,\mathrm{i}\,c^2\,d-19\,c\,d^2+21\,\mathrm{i}\,d^3\right)\right.\right.\right.\right.$$

$$\left.\left(\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{\sqrt{-c-\mathrm{i}\,d}}-\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{\sqrt{-c+\mathrm{i}\,d}}\right)\text{Sec}[e+f\,x]\,\left(c+d\,\text{Tan}[e+f\,x]\right)\right)\Big/$$

$$\left.\left(\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)+$$

$$\left(2\,\left(2\,c^2\,d+7\,\mathrm{i}\,c\,d^2+25\,d^3\right)\,\left(\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{2\,\sqrt{-c-\mathrm{i}\,d}}+\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{2\,\sqrt{-c+\mathrm{i}\,d}}\right)\,\text{Sec}[e+f\,x]\right.$$

$$\left.\left.\left.\left(c+d\,\text{Tan}[e+f\,x]\right)\right)\Big/\left(\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)\right)\Big/$$

$$\left(16\,\left(c-\mathrm{i}\,d\right)\,\left(c+\mathrm{i}\,d\right)^3\,f\,\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^2\right)$$

Problem 1130: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 368 leaves, 11 steps):

$$-\frac{\mathrm{i}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{8\,a^3\,\left(c-\mathrm{i}\,d\right)^{3/2}\,f}+\frac{\left(2\,\mathrm{i}\,c^3-12\,c^2\,d-33\,\mathrm{i}\,c\,d^2+58\,d^3\right)\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{16\,a^3\,\left(c+\mathrm{i}\,d\right)^{9/2}\,f}+$$

$$\frac{d\,\left(2\,c^3+9\,\mathrm{i}\,c^2\,d-17\,c\,d^2+60\,\mathrm{i}\,d^3\right)}{16\,a^3\,\left(c-\mathrm{i}\,d\right)\,\left(c+\mathrm{i}\,d\right)^4\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-$$

$$\frac{1}{6\,\left(\mathrm{i}\,c-d\right)\,f\,\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^3\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{3\,\mathrm{i}\,c-10\,d}{24\,a\,\left(c+\mathrm{i}\,d\right)^2\,f\,\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^2\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{6\,c^2+27\,\mathrm{i}\,c\,d-56\,d^2}{48\,\left(\mathrm{i}\,c-d\right)^3\,f\,\left(a^3+\mathrm{i}\,a^3\,\text{Tan}[e+f\,x]\right)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 989 leaves):

$$\frac{1}{f\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3}\mathrm{Sec}[e+f\,x]^3\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^3\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])}$$

$$\left(\frac{(18\,c^2+79\,i\,c\,d-118\,d^2)\,\mathrm{Cos}[2\,f\,x]\left(\frac{1}{96}\,i\,\mathrm{Cos}[e]-\frac{\mathrm{Sin}[e]}{96}\right)}{(c+i\,d)^4}+\right.$$

$$\frac{(9\,c+20\,i\,d)\,\mathrm{Cos}[4\,f\,x]\left(\frac{1}{96}\,i\,\mathrm{Cos}[e]+\frac{\mathrm{Sin}[e]}{96}\right)}{(c+i\,d)^3}+$$

$$\Big(\big(11\,c^4\,\mathrm{Cos}[e]+43\,i\,c^3\,d\,\mathrm{Cos}[e]-46\,c^2\,d^2\,\mathrm{Cos}[e]+100\,i\,c\,d^3\,\mathrm{Cos}[e]+192\,d^4\,\mathrm{Cos}[e]+$$

$$11\,c^3\,d\,\mathrm{Sin}[e]+43\,i\,c^2\,d^2\,\mathrm{Sin}[e]-46\,c\,d^3\,\mathrm{Sin}[e]+100\,i\,d^4\,\mathrm{Sin}[e]\big)$$

$$\left(\frac{1}{96}\,\mathrm{Cos}[3\,e]+\frac{1}{96}\,i\,\mathrm{Sin}[3\,e]\right)\Big)\Big/\left((c-i\,d)\,(c+i\,d)^4\,(-i\,c\,\mathrm{Cos}[e]-i\,d\,\mathrm{Sin}[e])\right)+$$

$$\frac{\mathrm{Cos}[6\,f\,x]\left(\frac{1}{48}\,i\,\mathrm{Cos}[3\,e]+\frac{1}{48}\,\mathrm{Sin}[3\,e]\right)}{(c+i\,d)^2}+$$

$$\frac{(18\,c^2+79\,i\,c\,d-118\,d^2)\left(\frac{\mathrm{Cos}[e]}{96}+\frac{1}{96}\,i\,\mathrm{Sin}[e]\right)\mathrm{Sin}[2\,f\,x]}{(c+i\,d)^4}+$$

$$\frac{(9\,c+20\,i\,d)\left(\frac{\mathrm{Cos}[e]}{96}-\frac{1}{96}\,i\,\mathrm{Sin}[e]\right)\mathrm{Sin}[4\,f\,x]}{(c+i\,d)^3}+\frac{\left(\frac{1}{48}\,\mathrm{Cos}[3\,e]-\frac{1}{48}\,i\,\mathrm{Sin}[3\,e]\right)\mathrm{Sin}[6\,f\,x]}{(c+i\,d)^2}+$$

$$\left(2\left(\frac{1}{2}\,d^5\,\mathrm{Cos}[3\,e-f\,x]-\frac{1}{2}\,d^5\,\mathrm{Cos}[3\,e+f\,x]+\frac{1}{2}\,i\,d^5\,\mathrm{Sin}[3\,e-f\,x]-\frac{1}{2}\,i\,d^5\,\mathrm{Sin}[3\,e+f\,x]\right)\right)\Big/$$

$$\left.\left((c-i\,d)\,(c+i\,d)^4\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\right)+$$

$$\Bigg(\mathrm{Sec}[e+f\,x]^3\,(\mathrm{Cos}[3\,e]+i\,\mathrm{Sin}[3\,e])\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^3$$

$$\Bigg(-\Bigg(\Bigg(i\,(4\,c^4+18\,i\,c^3\,d-33\,c^2\,d^2-33\,i\,c\,d^3-56\,d^4)$$

$$\left(\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c-i\,d}}\right]}{\sqrt{-c-i\,d}}-\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c+i\,d}}\right]}{\sqrt{-c+i\,d}}\right)\mathrm{Sec}[e+f\,x]\,(c+d\,\mathrm{Tan}[e+f\,x])\Bigg)\Big/$$

$$\left((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,(1+\mathrm{Tan}[e+f\,x]^2)\right)\Bigg)+$$

$$\left(2\left(2c^3 d+9 i c^2 d^2-17 c d^3+60 i d^4\right)\left(\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{-c-i d}}\right]}{2\sqrt{-c-i d}}+\frac{\text{ArcTan}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{-c+i d}}\right]}{2\sqrt{-c+i d}}\right)\right.$$

$$\left.\text{Sec}[e+f x]\left(c+d\,\text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)\Bigg)\Big/$$

$$\left(32\left(c-i d\right)\left(c+i d\right)^4 f\left(a+i a\,\text{Tan}[e+f x]\right)^3\right)$$

Problem 1131: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+i a\,\text{Tan}[e+f x]\right)^3}{\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 158 leaves, 5 steps):

$$-\frac{8 i a^3\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{\left(c-i d\right)^{5/2} f}+\frac{2\left(c+i d\right)\left(a^3+i a^3\,\text{Tan}[e+f x]\right)}{3\left(c-i d\right) d f\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}}+\frac{4 a^3\left(i c-d\right)\left(c-4 i d\right)}{3\left(c-i d\right)^2 d^2 f\sqrt{c+d\,\text{Tan}[e+f x]}}$$

Result (type 3, 482 leaves):

$$-\left(\left(4\,i\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Log}\Big[\frac{1}{\sqrt{c-i\,d}}2\,e^{-2\,i\,e}\right.\right.$$

$$\left(-i\,d\,e^{2\,i\,(e+f\,x)}+c\,\left(1+e^{2\,i\,(e+f\,x)}\right)+\sqrt{c-i\,d}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\Big]$$

$$\left.\left.(\mathrm{Cos}[3\,e]-i\,\mathrm{Sin}[3\,e])\,(a+i\,a\,\mathrm{Tan}[e+f\,x])^3\right)\Big/\left(\left(c-i\,d\right)^{5/2}f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^3\right)\right)+$$

$$\left(\mathrm{Cos}[e+f\,x]^3\,\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])}\right.$$

$$\left(\left((c+i\,d)\,(2\,i\,c\,\mathrm{Cos}[e]+9\,d\,\mathrm{Cos}[e]+i\,d\,\mathrm{Sin}[e])\,\left(\frac{2\,\mathrm{Cos}[3\,e]}{3\,d^2}-\frac{2\,i\,\mathrm{Sin}[3\,e]}{3\,d^2}\right)\right)\Big/\right.$$

$$\left((c-i\,d)^2\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\right)+\frac{(-i\,c+d)\,\left(\frac{2}{3}\,\mathrm{Cos}[3\,e]-\frac{2}{3}\,i\,\mathrm{Sin}[3\,e]\right)}{(c-i\,d)^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2}+$$

$$\left(\left(\frac{2\,\mathrm{Cos}[3\,e]}{3\,d}-\frac{2\,i\,\mathrm{Sin}[3\,e]}{3\,d}\right)\left(-i\,c^2\,\mathrm{Sin}[f\,x]-8\,c\,d\,\mathrm{Sin}[f\,x]-9\,i\,d^2\,\mathrm{Sin}[f\,x]\right)\right)\Big/$$

$$\left.\left((c-i\,d)^2\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\right)$$

$$\left.(a+i\,a\,\mathrm{Tan}[e+f\,x])^3\right)\Big/\left(f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^3\right)$$

Problem 1132: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\mathrm{Tan}[e+f\,x])^2}{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 127 leaves, 5 steps):

$$-\frac{4\,i\,a^2\,\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\Big]}{(c-i\,d)^{5/2}\,f}+\frac{2\,a^2\,(i\,c-d)}{3\,d\,(i\,c+d)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}+\frac{4\,i\,a^2}{(c-i\,d)^2\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 269 leaves):

$$\left(2\,a^2\,\left(\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]\right)\,\left(\text{Cos}[e+f\,x]+\mathrm{i}\,\text{Sin}[e+f\,x]\right)^2\right.$$

$$\left(-\frac{1}{\left(c-\mathrm{i}\,d\right)^{5/2}}3\,\mathrm{i}\,\text{Log}\left[\frac{1}{\sqrt{c-\mathrm{i}\,d}}2\,\left(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+\right.\right.\right.$$

$$\left.\left.\sqrt{c-\mathrm{i}\,d}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\,\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\right]+$$

$$\left(\text{Cos}[e+f\,x]\,\left(\left(c^2+6\,\mathrm{i}\,c\,d+d^2\right)\,\text{Cos}[e+f\,x]+6\,\mathrm{i}\,d^2\,\text{Sin}[e+f\,x]\right)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/$$

$$\left.\left.\left(\left(c-\mathrm{i}\,d\right)^2\,d\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right)\right)\right)\Big/\left(3\,f\,\left(\text{Cos}[f\,x]+\mathrm{i}\,\text{Sin}[f\,x]\right)^2\right)$$

Problem 1133: Result more than twice size of optimal antiderivative.

$$\int \frac{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}{\left(c+d\,\text{Tan}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 109 leaves, 5 steps):

$$-\frac{2\,\mathrm{i}\,a\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\left(c-\mathrm{i}\,d\right)^{5/2}\,f}-\frac{2\,a}{3\,\left(\mathrm{i}\,c+d\right)\,f\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{3/2}}+\frac{2\,\mathrm{i}\,a}{\left(c-\mathrm{i}\,d\right)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 250 leaves):

$$\frac{1}{3\,f}\text{Cos}[e+f\,x]\,\left(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e]\right)\,\left(\text{Cos}[f\,x]-\mathrm{i}\,\text{Sin}[f\,x]\right)$$

$$\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)\,\left(-\frac{1}{\left(c-\mathrm{i}\,d\right)^{5/2}}3\,\mathrm{i}\,\text{Log}\left[\frac{1}{\sqrt{c-\mathrm{i}\,d}}\right.\right.$$

$$\left.2\,\left(-\mathrm{i}\,d\,e^{2\,\mathrm{i}\,(e+f\,x)}+c\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+\sqrt{c-\mathrm{i}\,d}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\,\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\right]+$$

$$\left(2\,\text{Cos}[e+f\,x]\,\left(\left(4\,\mathrm{i}\,c+d\right)\,\text{Cos}[e+f\,x]+3\,\mathrm{i}\,d\,\text{Sin}[e+f\,x]\right)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/$$

$$\left.\left(\left(c-\mathrm{i}\,d\right)^2\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right)\right)$$

Problem 1134: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+i\,a\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 267 leaves, 10 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{2\,a\,(c-i\,d)^{5/2}\,f}+\frac{(i\,c-6\,d)\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{2\,a\,(c+i\,d)^{7/2}\,f}+$$
$$\frac{d\,(3\,i\,c+7\,d)}{6\,a\,(i\,c-d)\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-$$
$$\frac{1}{2\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$
$$\frac{d\,(c^2-14\,i\,c\,d-5\,d^2)}{2\,a\,(c-i\,d)^2\,(c+i\,d)^3\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 863 leaves):

$$\frac{1}{f\left(a+i a \operatorname{Tan}[e+f x]\right)}\operatorname{Sec}[e+f x]\left(\operatorname{Cos}[f x]+i \operatorname{Sin}[f x]\right)\sqrt{\operatorname{Sec}[e+f x]\left(c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]\right)}$$

$$\left(\frac{\operatorname{Cos}[2 f x]\left(\frac{1}{4} i \operatorname{Cos}[e]+\frac{\operatorname{Sin}[e]}{4}\right)}{(c+i d)^3}+\left(\left(\frac{\operatorname{Cos}[e]}{12}+\frac{1}{12} i \operatorname{Sin}[e]\right)\left(3 i c^3 \operatorname{Cos}[e]+6 c^2 d \operatorname{Cos}[e]-\right.\right.\right.$$

$$\left.\left.83 i c d^2 \operatorname{Cos}[e]-24 d^3 \operatorname{Cos}[e]+3 i c^2 d \operatorname{Sin}[e]+6 c d^2 \operatorname{Sin}[e]+5 i d^3 \operatorname{Sin}[e]\right)\right)\Big/$$

$$\left(\left(c-i d\right)^2\left(c+i d\right)^3\left(c \operatorname{Cos}[e]+d \operatorname{Sin}[e]\right)\right)+\frac{\left(\frac{\operatorname{Cos}[e]}{4}-\frac{1}{4} i \operatorname{Sin}[e]\right)\operatorname{Sin}[2 f x]}{(c+i d)^3}+$$

$$\frac{-\frac{2}{3} i d^4 \operatorname{Cos}[e]+\frac{2}{3} d^4 \operatorname{Sin}[e]}{(c-i d)^2(c+i d)^3\left(c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]\right)^2}+$$

$$\left(2\left(-\frac{11}{2} c d^3 \operatorname{Cos}[e-f x]+\frac{3}{2} i d^4 \operatorname{Cos}[e-f x]+\frac{11}{2} c d^3 \operatorname{Cos}[e+f x]-\frac{3}{2} i d^4 \operatorname{Cos}[e+f x]-\right.\right.$$

$$\left.\left.\frac{11}{2} i c d^3 \operatorname{Sin}[e-f x]-\frac{3}{2} d^4 \operatorname{Sin}[e-f x]+\frac{11}{2} i c d^3 \operatorname{Sin}[e+f x]+\frac{3}{2} d^4 \operatorname{Sin}[e+f x]\right)\right)\Big/$$

$$\left.\left(3\left(c-i d\right)^2\left(c+i d\right)^3\left(c \operatorname{Cos}[e]+d \operatorname{Sin}[e]\right)\left(c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]\right)\right)\right)+$$

$$\left(\operatorname{Sec}[e+f x]\left(\operatorname{Cos}[e]+i \operatorname{Sin}[e]\right)\left(\operatorname{Cos}[f x]+i \operatorname{Sin}[f x]\right)\right.$$

$$\left(-\left(\left(i\left(2 c^3+7 i c^2 d+8 c d^2-7 i d^3\right)\left(\frac{\operatorname{ArcTan}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{-c-i d}}\right]}{\sqrt{-c-i d}}-\frac{\operatorname{ArcTan}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{-c+i d}}\right]}{\sqrt{-c+i d}}\right)\operatorname{Sec}[\right.\right.\right.$$

$$\left.\left.e+f x]\left(c+d \operatorname{Tan}[e+f x]\right)\right)\Big/\left(\left(c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]\right)\left(1+\operatorname{Tan}[e+f x]^2\right)\right)\right)+$$

$$\left(2\left(c^2 d-14 i c d^2-5 d^3\right)\left(\frac{\operatorname{ArcTan}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{-c-i d}}\right]}{2\sqrt{-c-i d}}+\frac{\operatorname{ArcTan}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{-c+i d}}\right]}{2\sqrt{-c+i d}}\right)\operatorname{Sec}[e+f x]\right.$$

$$\left.\left.\left.\left(c+d \operatorname{Tan}[e+f x]\right)\right)\Big/\left(\left(c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]\right)\left(1+\operatorname{Tan}[e+f x]^2\right)\right)\right)\right)\Big/$$

$$\left(4\left(c-i d\right)^2\left(c+i d\right)^3 f\left(a+i a \operatorname{Tan}[e+f x]\right)\right)$$

Problem 1135: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+i a \operatorname{Tan}[e+f x])^2 (c+d \operatorname{Tan}[e+f x])^{5/2}} \, dx$$

Optimal (type 3, 351 leaves, 11 steps):

$$-\frac{i \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{4 a^2 (c-i d)^{5/2} f}+\frac{\left(2 i c^2-14 c d-47 i d^2\right) \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{8 a^2 (c+i d)^{9/2} f}+$$
$$\frac{d \left(6 c^2+27 i c d+49 d^2\right)}{24 a^2 (c-i d) (c+i d)^3 f (c+d \operatorname{Tan}[e+f x])^{3/2}}+$$
$$\frac{2 i c-9 d}{8 a^2 (c+i d)^2 f (1+i \operatorname{Tan}[e+f x]) (c+d \operatorname{Tan}[e+f x])^{3/2}}-$$
$$\frac{1}{4 (i c-d) f (a+i a \operatorname{Tan}[e+f x])^2 (c+d \operatorname{Tan}[e+f x])^{3/2}}+$$
$$\frac{d \left(2 c^3+9 i c^2 d+88 c d^2-45 i d^3\right)}{8 a^2 (c-i d)^2 (c+i d)^4 f \sqrt{c+d \operatorname{Tan}[e+f x]}}$$

Result (type 3, 1004 leaves):

$$\frac{1}{f (a+i a \operatorname{Tan}[e+f x])^2} \operatorname{Sec}[e+f x]^2 (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^2$$
$$\sqrt{\operatorname{Sec}[e+f x] (c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x])} \left(\frac{i (4 c+15 i d) \operatorname{Cos}[2 f x]}{16 (c+i d)^4}+\right.$$
$$\left(\left(9 i c^4 \operatorname{Cos}[e]-24 c^3 d \operatorname{Cos}[e]+75 i c^2 d^2 \operatorname{Cos}[e]+458 c d^3 \operatorname{Cos}[e]-192 i d^4 \operatorname{Cos}[e]+\right.\right.$$
$$\left.9 i c^3 d \operatorname{Sin}[e]-24 c^2 d^2 \operatorname{Sin}[e]+75 i c d^3 \operatorname{Sin}[e]+10 d^4 \operatorname{Sin}[e]\right)$$
$$\left.\left(\frac{1}{48} \operatorname{Cos}[2 e]+\frac{1}{48} i \operatorname{Sin}[2 e]\right)\right) \Big/ \left((c-i d)^2 (c+i d)^4 (c \operatorname{Cos}[e]+d \operatorname{Sin}[e])\right)+$$
$$\frac{\operatorname{Cos}[4 f x] \left(\frac{1}{16} i \operatorname{Cos}[2 e]+\frac{1}{16} \operatorname{Sin}[2 e]\right)}{(c+i d)^3}+\frac{(4 c+15 i d) \operatorname{Sin}[2 f x]}{16 (c+i d)^4}+$$
$$\frac{\left(\frac{1}{16} \operatorname{Cos}[2 e]-\frac{1}{16} i \operatorname{Sin}[2 e]\right) \operatorname{Sin}[4 f x]}{(c+i d)^3}+$$
$$\frac{\frac{2}{3} d^5 \operatorname{Cos}[2 e]+\frac{2}{3} i d^5 \operatorname{Sin}[2 e]}{(c-i d)^2 (c+i d)^4 (c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x])^2}-$$
$$\left(4 \left(\frac{7}{2} i c d^4 \operatorname{Cos}[2 e-f x]+\frac{3}{2} d^5 \operatorname{Cos}[2 e-f x]-\right.\right.$$
$$\frac{7}{2} i c d^4 \operatorname{Cos}[2 e+f x]-\frac{3}{2} d^5 \operatorname{Cos}[2 e+f x]-\frac{7}{2} c d^4 \operatorname{Sin}[2 e-f x]+$$
$$\left.\left.\frac{3}{2} i d^5 \operatorname{Sin}[2 e-f x]+\frac{7}{2} c d^4 \operatorname{Sin}[2 e+f x]-\frac{3}{2} i d^5 \operatorname{Sin}[2 e+f x]\right)\right) \Big/$$

$$\left(3\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^4\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\Bigg)+$$

$$\Bigg(\mathrm{Sec}[e+f\,x]^2\,(\mathrm{Cos}[2\,e]+\mathrm{i}\,\mathrm{Sin}[2\,e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{i}\,(4\,c^4+18\,\mathrm{i}\,c^3\,d-33\,c^2\,d^2+72\,\mathrm{i}\,c\,d^3+49\,d^4)$$

$$\left(\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{\sqrt{-c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{\sqrt{-c+\mathrm{i}\,d}}\right)\mathrm{Sec}[e+f\,x]\,(c+d\,\mathrm{Tan}[e+f\,x])\Bigg)\Big/$$

$$\left((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,(1+\mathrm{Tan}[e+f\,x]^2)\right)\Bigg)+$$

$$\Bigg(2\,(2\,c^3\,d+9\,\mathrm{i}\,c^2\,d^2+88\,c\,d^3-45\,\mathrm{i}\,d^4)\left(\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{2\,\sqrt{-c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{2\,\sqrt{-c+\mathrm{i}\,d}}\right)$$

$$\mathrm{Sec}[e+f\,x]\,(c+d\,\mathrm{Tan}[e+f\,x])\Bigg)\Big/$$

$$\left((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,(1+\mathrm{Tan}[e+f\,x]^2)\right)\Bigg)\Bigg)\Big/$$

$$\left(16\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^4\,f\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)$$

Problem 1136: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 446 leaves, 12 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{8\,a^3\,(c-i\,d)^{5/2}\,f}+\frac{\left(2\,i\,c^3-16\,c^2\,d-61\,i\,c\,d^2+152\,d^3\right)\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{16\,a^3\,(c+i\,d)^{11/2}\,f}+$$

$$\frac{d\,\left(6\,c^3+33\,i\,c^2\,d-83\,c\,d^2+154\,i\,d^3\right)}{48\,a^3\,(c-i\,d)\,(c+i\,d)^4\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-$$

$$\frac{1}{6\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{i\,c-4\,d}{8\,a\,(c+i\,d)^2\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{2\,c^2+11\,i\,c\,d-30\,d^2}{16\,(i\,c-d)^3\,f\,\left(a^3+i\,a^3\,\text{Tan}[e+f\,x]\right)\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{d\,\left(2\,c^4+11\,i\,c^3\,d-26\,c^2\,d^2+253\,i\,c\,d^3+150\,d^4\right)}{16\,a^3\,(c-i\,d)^2\,(c+i\,d)^5\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 1160 leaves):

$$\frac{1}{f\,(a+i\,a\,\text{Tan}[e+f\,x])^3}$$

$$\text{Sec}[e+f\,x]^3\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}$$

$$\left(\frac{\left(18\,c^2+103\,i\,c\,d-208\,d^2\right)\,\text{Cos}[2\,f\,x]\,\left(\frac{1}{96}\,i\,\text{Cos}[e]-\frac{\text{Sin}[e]}{96}\right)}{(c+i\,d)^5}+\right.$$

$$\frac{(9\,c+26\,i\,d)\,\text{Cos}[4\,f\,x]\,\left(\frac{1}{96}\,i\,\text{Cos}[e]+\frac{\text{Sin}[e]}{96}\right)}{(c+i\,d)^4}+$$

$$\left(\left(11\,i\,c^5\,\text{Cos}[e]-50\,c^4\,d\,\text{Cos}[e]-51\,i\,c^3\,d^2\,\text{Cos}[e]-296\,c^2\,d^3\,\text{Cos}[e]+1208\,i\,c\,d^4\,\text{Cos}[e]+\right.\right.$$

$$576\,d^5\,\text{Cos}[e]+11\,i\,c^4\,d\,\text{Sin}[e]-50\,c^3\,d^2\,\text{Sin}[e]-51\,i\,c^2\,d^3\,\text{Sin}[e]-$$

$$\left.\left.296\,c\,d^4\,\text{Sin}[e]+120\,i\,d^5\,\text{Sin}[e]\right)\,\left(\frac{1}{96}\,\text{Cos}[3\,e]+\frac{1}{96}\,i\,\text{Sin}[3\,e]\right)\right)\Big/$$

$$\left((c-i\,d)^2\,(c+i\,d)^5\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])\right)+\frac{\text{Cos}[6\,f\,x]\,\left(\frac{1}{48}\,i\,\text{Cos}[3\,e]+\frac{1}{48}\,\text{Sin}[3\,e]\right)}{(c+i\,d)^3}+$$

$$\frac{\left(18\,c^2+103\,i\,c\,d-208\,d^2\right)\,\left(\frac{\text{Cos}[e]}{96}+\frac{1}{96}\,i\,\text{Sin}[e]\right)\,\text{Sin}[2\,f\,x]}{(c+i\,d)^5}+$$

$$\frac{(9\,c+26\,i\,d)\,\left(\frac{\text{Cos}[e]}{96}-\frac{1}{96}\,i\,\text{Sin}[e]\right)\,\text{Sin}[4\,f\,x]}{(c+i\,d)^4}+\frac{\left(\frac{1}{48}\,\text{Cos}[3\,e]-\frac{1}{48}\,i\,\text{Sin}[3\,e]\right)\,\text{Sin}[6\,f\,x]}{(c+i\,d)^3}+$$

$$\frac{\frac{2}{3}\,i\,d^6\,\text{Cos}[3\,e]-\frac{2}{3}\,d^6\,\text{Sin}[3\,e]}{(c-i\,d)^2\,(c+i\,d)^5\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2}+$$

$$\left(2\,\left(\frac{17}{2}\,c\,d^5\,\text{Cos}[3\,e-f\,x]-\frac{9}{2}\,i\,d^6\,\text{Cos}[3\,e-f\,x]-\right.\right.$$

$$\frac{17}{2}\,c\,d^5\,\mathrm{Cos}[3\,e+f\,x]+\frac{9}{2}\,\mathrm{i}\,d^6\,\mathrm{Cos}[3\,e+f\,x]+\frac{17}{2}\,\mathrm{i}\,c\,d^5\,\mathrm{Sin}[3\,e-f\,x]+$$
$$\left.\left.\frac{9}{2}\,d^6\,\mathrm{Sin}[3\,e-f\,x]-\frac{17}{2}\,\mathrm{i}\,c\,d^5\,\mathrm{Sin}[3\,e+f\,x]-\frac{9}{2}\,d^6\,\mathrm{Sin}[3\,e+f\,x]\right)\right)\Big/$$
$$\left.\left(3\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^5\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\right)+$$
$$\Big(\mathrm{Sec}[e+f\,x]^3\,(\mathrm{Cos}[3\,e]+\mathrm{i}\,\mathrm{Sin}[3\,e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^3$$
$$\Big(-\Big(\Big(\Big(\mathrm{i}\,\left(4\,c^5+22\,\mathrm{i}\,c^4\,d-51\,c^3\,d^2-66\,\mathrm{i}\,c^2\,d^3-233\,c\,d^4+154\,\mathrm{i}\,d^5\right)$$
$$\left.\left(\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{\sqrt{-c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{\sqrt{-c+\mathrm{i}\,d}}\right)\mathrm{Sec}[e+f\,x]\,(c+d\,\mathrm{Tan}[e+f\,x])\right)\Big/$$
$$\left.\left((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)\right)+$$
$$\Big(2\,\left(2\,c^4\,d+11\,\mathrm{i}\,c^3\,d^2-26\,c^2\,d^3+253\,\mathrm{i}\,c\,d^4+150\,d^5\right)$$
$$\left.\left(\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c-\mathrm{i}\,d}}\right]}{2\,\sqrt{-c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTan}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{-c+\mathrm{i}\,d}}\right]}{2\,\sqrt{-c+\mathrm{i}\,d}}\right)\mathrm{Sec}[e+f\,x]\,(c+d\,\mathrm{Tan}[e+f\,x])\right)\Big/$$
$$\left.\left.\left((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)\right)\right)\Big/$$
$$\left(32\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^5\,f\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^3\right)$$

Problem 1137: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,\mathrm{d}x$$

Optimal (type 3, 263 leaves, 9 steps):

$$-\frac{(-1)^{1/4}\, a^{5/2}\, \left(c^2+10\, i\, c\, d+23\, d^2\right)\, \text{ArcTanh}\left[\frac{(-1)^{3/4}\, \sqrt{d}\, \sqrt{a+i\, a\, \text{Tan}[e+f\, x]}}{\sqrt{a}\, \sqrt{c+d\, \text{Tan}[e+f\, x]}}\right]}{4\, d^{3/2}\, f}-$$

$$\frac{4\, i\, \sqrt{2}\, a^{5/2}\, \sqrt{c-i\, d}\, \text{ArcTanh}\left[\frac{\sqrt{2}\, \sqrt{a}\, \sqrt{c+d\, \text{Tan}[e+f\, x]}}{\sqrt{c-i\, d}\, \sqrt{a+i\, a\, \text{Tan}[e+f\, x]}}\right]}{f}+$$

$$\frac{a^2\, (c+9\, i\, d)\, \sqrt{a+i\, a\, \text{Tan}[e+f\, x]}\, \sqrt{c+d\, \text{Tan}[e+f\, x]}}{4\, d\, f}-$$

$$\frac{a^2\, \sqrt{a+i\, a\, \text{Tan}[e+f\, x]}\, (c+d\, \text{Tan}[e+f\, x])^{3/2}}{2\, d\, f}$$

Result (type 3, 589 leaves) :

$$\frac{1}{f\,\big(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\big)^2}$$

$$\Big(\frac{1}{8}+\frac{\mathrm{i}}{8}\Big)\,\mathrm{Cos}[e+f\,x]^2\,\big(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\big)^{5/2}\,\Bigg(-\frac{1}{d^{3/2}\,\sqrt{1+\mathrm{Cos}\big[2\,(e+f\,x)\big]+\mathrm{i}\,\mathrm{Sin}\big[2\,(e+f\,x)\big]}}$$

$$\mathrm{Cos}[e+f\,x]\,\Bigg(\big(c^2+10\,\mathrm{i}\,c\,d+23\,d^2\big)\,\Bigg(\mathrm{Log}\Bigg[\Bigg(\big(2+2\,\mathrm{i}\big)\,e^{\frac{\mathrm{i}\,e}{2}}\,\Bigg(-\mathrm{i}\,d+d\,e^{\mathrm{i}\,(e+f\,x)}+\mathrm{i}\,c\,\big(\mathrm{i}+e^{\mathrm{i}\,(e+f\,x)}\big)-$$

$$\big(1+\mathrm{i}\big)\,\sqrt{d}\,\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\,\sqrt{c-\frac{\mathrm{i}\,d\,\big(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,\Bigg)\Bigg)\Bigg/\Big(\sqrt{d}$$

$$\big(c^2+10\,\mathrm{i}\,c\,d+23\,d^2\big)\,\big(\mathrm{i}+e^{\mathrm{i}\,(e+f\,x)}\big)\Big)\Bigg]-\mathrm{Log}\Bigg[\Bigg(\big(2+2\,\mathrm{i}\big)\,e^{\frac{\mathrm{i}\,e}{2}}\,\Bigg(c+\mathrm{i}\,d+\mathrm{i}\,c\,e^{\mathrm{i}\,(e+f\,x)}+$$

$$d\,e^{\mathrm{i}\,(e+f\,x)}+\big(1+\mathrm{i}\big)\,\sqrt{d}\,\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\,\sqrt{c-\frac{\mathrm{i}\,d\,\big(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\big)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,\Bigg)\Bigg)\Bigg/$$

$$\Big(\sqrt{d}\,\big(c^2+10\,\mathrm{i}\,c\,d+23\,d^2\big)\,\big(-\mathrm{i}+e^{\mathrm{i}\,(e+f\,x)}\big)\Big)\Bigg]\Bigg)+\big(32+32\,\mathrm{i}\big)$$

$$\sqrt{c-\mathrm{i}\,d}\,d^{3/2}\,\mathrm{Log}\Big[2\,\Big(\sqrt{c-\mathrm{i}\,d}\,\mathrm{Cos}[e+f\,x]+\mathrm{i}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{Sin}[e+f\,x]+$$

$$\sqrt{1+\mathrm{Cos}\big[2\,(e+f\,x)\big]+\mathrm{i}\,\mathrm{Sin}\big[2\,(e+f\,x)\big]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big]\Bigg)$$

$$\big(\mathrm{Cos}[2\,e]-\mathrm{i}\,\mathrm{Sin}[2\,e]\big)+\frac{1}{d}\big(1+\mathrm{i}\big)\,\big(\mathrm{i}\,\mathrm{Cos}[2\,e]+\mathrm{Sin}[2\,e]\big)$$

$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,\big(c-9\,\mathrm{i}\,d+2\,d\,\mathrm{Tan}[e+f\,x]\big)\Bigg)$$

Problem 1138: Result more than twice size of optimal antiderivative.

$$\int\big(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\big)^{3/2}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 250 leaves, 9 steps):

$$-\frac{(-1)^{1/4} a^{3/2} (i c+3 d) \text{ArcTanh}\left[\frac{(-1)^{3/4} \sqrt{d} \sqrt{a+i a \text{Tan}[e+f x]}}{\sqrt{a} \sqrt{c+d \text{Tan}[e+f x]}}\right]}{\sqrt{d} f}-\frac{2 i \sqrt{2} a^{3/2} \sqrt{c-i d} \text{ArcTanh}\left[\frac{\sqrt{2} \sqrt{a} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d} \sqrt{a+i a \text{Tan}[e+f x]}}\right]}{f}+\frac{a^2 (c+i d) \sqrt{c+d \text{Tan}[e+f x]}}{d f \sqrt{a+i a \text{Tan}[e+f x]}}-\frac{a^2 (c+d \text{Tan}[e+f x])^{3/2}}{d f \sqrt{a+i a \text{Tan}[e+f x]}}$$

Result (type 3, 559 leaves):

$$\frac{1}{f}\left(\frac{1}{2}+\frac{i}{2}\right) \text{Cos}[e+f x] (\text{Cos}[f x]-i \text{Sin}[f x]) (a+i a \text{Tan}[e+f x])^{3/2} \left(\frac{1}{\sqrt{d} \sqrt{1+\text{Cos}[2 (e+f x)]+i \text{Sin}[2 (e+f x)]}} \text{Cos}[e+f x] \left((-i c-3 d) \text{Log}\left[\left((2+2 i) e^{\frac{i e}{2}} \left(-i d+d e^{i (e+f x)}+i c \left(i+e^{i (e+f x)}\right)-(1+i) \sqrt{d} \sqrt{1+e^{2 i (e+f x)}} \sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right)\Big/\left(\sqrt{d} (i c+3 d) \left(i+e^{i (e+f x)}\right)\right)\right]+(i c+3 d) \text{Log}\left[\left((2+2 i) e^{\frac{i e}{2}} \left(c+i d+i c e^{i (e+f x)}+d e^{i (e+f x)}+(1+i) \sqrt{d} \sqrt{1+e^{2 i (e+f x)}} \sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right)\Big/\left(\sqrt{d} (i c+3 d) \left(-i+e^{i (e+f x)}\right)\right)\right]-(4+4 i) \sqrt{c-i d} \sqrt{d} \text{Log}\left[2 \left(\sqrt{c-i d} \text{Cos}[e+f x]+i \sqrt{c-i d} \text{Sin}[e+f x]+\sqrt{1+\text{Cos}[2 (e+f x)]+i \text{Sin}[2 (e+f x)]} \sqrt{c+d \text{Tan}[e+f x]}\right)\right]\right)(\text{Cos}[e]-i \text{Sin}[e])+(1+i) \text{Cos}[e] \sqrt{c+d \text{Tan}[e+f x]}+(1-i) \text{Sin}[e] \sqrt{c+d \text{Tan}[e+f x]}\right)$$

Problem 1139: Result more than twice size of optimal antiderivative.

$$\int \sqrt{a+i a \text{Tan}[e+f x]} \sqrt{c+d \text{Tan}[e+f x]} \, dx$$

Optimal (type 3, 151 leaves, 7 steps):

$$-\frac{2\left(-1\right)^{1/4}\sqrt{a}\sqrt{d}\,\text{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\sqrt{a+i a\,\text{Tan}[e+f x]}}{\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{f}-\frac{i\sqrt{2}\sqrt{a}\sqrt{c-i d}\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i d}\sqrt{a+i a\,\text{Tan}[e+f x]}}\right]}{f}$$

Result (type 3, 442 leaves):

$$-\frac{1}{f}\left(\frac{1}{2}+\frac{i}{2}\right)e^{-i(e+f x)}\sqrt{1+e^{2 i(e+f x)}}\left(\left(1+i\right)\sqrt{c-i d}\,\text{Log}\left[2\left(\sqrt{c-i d}\,e^{i(e+f x)}+\sqrt{1+e^{2 i(e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\right)\right]+\right.$$
$$\sqrt{d}\left(\text{Log}\left[\left(\left(1+i\right)e^{\frac{i e}{2}}\left(-i d+d e^{i(e+f x)}+i c\left(i+e^{i(e+f x)}\right)-\right.\right.\right.\right.$$
$$\left.\left.\left.\left(1+i\right)\sqrt{d}\sqrt{1+e^{2 i(e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\right)\right)\Big/\left(d^{3/2}\left(i+e^{i(e+f x)}\right)\right)\right]-$$
$$\text{Log}\left[\left(\left(1+i\right)e^{\frac{i e}{2}}\left(c+i d+i c\,e^{i(e+f x)}+d\,e^{i(e+f x)}+\left(1+i\right)\sqrt{d}\sqrt{1+e^{2 i(e+f x)}}\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\right)\right)\Big/\left(d^{3/2}\left(-i+e^{i(e+f x)}\right)\right)\right]\right)\right)\sqrt{a+i a\,\text{Tan}[e+f x]}$$

Problem 1143: Result more than twice size of optimal antiderivative.

$$\int\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}dx$$

Optimal (type 3, 329 leaves, 10 steps):

$$-\frac{1}{8\,d^{3/2}\,f}(-1)^{1/4}\,a^{5/2}\,(c-3\,i\,d)\,\left(c^2+18\,i\,c\,d+15\,d^2\right)\,\text{ArcTanh}\Big[\frac{(-1)^{3/4}\,\sqrt{d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]-$$

$$\frac{4\,i\,\sqrt{2}\,a^{5/2}\,(c-i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\Big]}{f}+$$

$$\frac{a^2\,\left(c^2+14\,i\,c\,d+19\,d^2\right)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{8\,d\,f}+$$

$$\frac{a^2\,(c+13\,i\,d)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{12\,d\,f}-$$

$$\frac{a^2\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}{3\,d\,f}$$

Result (type 3, 758 leaves) :

$$\left(\left(\frac{1}{16}-\frac{\mathrm{i}}{16}\right)\mathrm{Cos}[e+f x]^3\right.$$

$$\left(\left(-\mathrm{i}\, c^3+15 c^2 d-69\,\mathrm{i}\, c d^2-45 d^3\right)\left(\mathrm{Log}\left[\left(\left(2+2\,\mathrm{i}\right)e^{\frac{\mathrm{i} e}{2}}\left(-\mathrm{i}\, d+d\, e^{\mathrm{i}(e+f x)}+\mathrm{i}\, c\right.\right.\right.\right.\right.$$

$$\left.\left.\left(\mathrm{i}+e^{\mathrm{i}(e+f x)}\right)-\left(1+\mathrm{i}\right)\sqrt{d}\,\sqrt{1+e^{2\mathrm{i}(e+f x)}}\,\sqrt{c-\frac{\mathrm{i}\, d\left(-1+e^{2\mathrm{i}(e+f x)}\right)}{1+e^{2\mathrm{i}(e+f x)}}}\right)\right)\Big/$$

$$\left.\left(\sqrt{d}\left(\mathrm{i}\, c^3-15 c^2 d+69\,\mathrm{i}\, c d^2+45 d^3\right)\left(\mathrm{i}+e^{\mathrm{i}(e+f x)}\right)\right)\right]-\mathrm{Log}\left[\left(\left(2+2\,\mathrm{i}\right)e^{\frac{\mathrm{i} e}{2}}\left(c+\mathrm{i}\, d+\mathrm{i}\, c\right.\right.\right.$$

$$\left.\left.e^{\mathrm{i}(e+f x)}+d\, e^{\mathrm{i}(e+f x)}+\left(1+\mathrm{i}\right)\sqrt{d}\,\sqrt{1+e^{2\mathrm{i}(e+f x)}}\,\sqrt{c-\frac{\mathrm{i}\, d\left(-1+e^{2\mathrm{i}(e+f x)}\right)}{1+e^{2\mathrm{i}(e+f x)}}}\right)\right)\Big/$$

$$\left.\left.\left(\sqrt{d}\left(\mathrm{i}\, c^3-15 c^2 d+69\,\mathrm{i}\, c d^2+45 d^3\right)\left(-\mathrm{i}+e^{\mathrm{i}(e+f x)}\right)\right)\right]\right)+$$

$$\left(64-64\,\mathrm{i}\right)\left(c-\mathrm{i}\, d\right)^{3/2}d^{3/2}\,\mathrm{Log}\left[2\left(\sqrt{c-\mathrm{i}\, d}\,\mathrm{Cos}[e+f x]+\mathrm{i}\sqrt{c-\mathrm{i}\, d}\,\mathrm{Sin}[e+f x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\mathrm{Cos}[2 e+2 f x]+\mathrm{i}\,\mathrm{Sin}[2 e+2 f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)\right]\right)$$

$$\left.\left(\mathrm{Cos}[2 e]-\mathrm{i}\,\mathrm{Sin}[2 e]\right)\left(a+\mathrm{i}\, a\,\mathrm{Tan}[e+f x]\right)^{5/2}\right)\Big/\left(d^{3/2}\right.$$

$$f$$

$$\left(\mathrm{Cos}[f x]+\mathrm{i}\,\mathrm{Sin}[f x]\right)^2$$

$$\left.\sqrt{1+\mathrm{Cos}\left[2\left(e+f x\right)\right]+\mathrm{i}\,\mathrm{Sin}\left[2\left(e+f x\right)\right]}\right)+$$

$$\left(\mathrm{Cos}[e+f x]^2\sqrt{\mathrm{Sec}[e+f x]\left(c\,\mathrm{Cos}[e+f x]+d\,\mathrm{Sin}[e+f x]\right)}\right.$$

$$\left(\left(-3 c^2+82\,\mathrm{i}\, c d+91 d^2\right)\left(\frac{\mathrm{Cos}[2 e]}{24 d}-\frac{\mathrm{i}\,\mathrm{Sin}[2 e]}{24 d}\right)+\right.$$

$$\mathrm{Sec}[e+f x]^2\left(-\frac{1}{3}d\,\mathrm{Cos}[2 e]+\frac{1}{3}\mathrm{i}\, d\,\mathrm{Sin}[2 e]\right)+$$

$$\left.\left(7 c-13\,\mathrm{i}\, d\right)\mathrm{Sec}[e+f x]\left(-\frac{1}{12}\mathrm{i}\,\mathrm{Cos}[3 e+f x]-\frac{1}{12}\mathrm{Sin}[3 e+f x]\right)\right)$$

$$\left.\left(a+\mathrm{i}\, a\,\mathrm{Tan}[e+f x]\right)^{5/2}\right)\Big/\left(f\left(\mathrm{Cos}[f x]+\mathrm{i}\,\mathrm{Sin}[f x]\right)^2\right)$$

Problem 1145: Result more than twice size of optimal antiderivative.

$$\int \sqrt{a+\mathrm{i}\, a \operatorname{Tan}[e+f x]}\ (c+d \operatorname{Tan}[e+f x])^{3/2}\, dx$$

Optimal (type 3, 196 leaves, 8 steps):

$$-\frac{(-1)^{1/4}\sqrt{a}\,(3c-\mathrm{i}\,d)\sqrt{d}\ \operatorname{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\,\sqrt{a+\mathrm{i}\,a\operatorname{Tan}[e+fx]}}{\sqrt{a}\,\sqrt{c+d\operatorname{Tan}[e+fx]}}\right]}{f}-\frac{\mathrm{i}\sqrt{2}\,\sqrt{a}\,(c-\mathrm{i}\,d)^{3/2}\operatorname{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\operatorname{Tan}[e+fx]}}{\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+\mathrm{i}\,a\operatorname{Tan}[e+fx]}}\right]}{f}+\frac{d\sqrt{a+\mathrm{i}\,a\operatorname{Tan}[e+fx]}\,\sqrt{c+d\operatorname{Tan}[e+fx]}}{f}$$

Result (type 3, 507 leaves):

$$\frac{1}{f}\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\sqrt{a+\mathrm{i}\,a\operatorname{Tan}[e+fx]}$$

$$\left(-\frac{1}{\sqrt{1+\operatorname{Cos}[2(e+fx)]+\mathrm{i}\operatorname{Sin}[2(e+fx)]}}\operatorname{Cos}[e+fx]\left((3c-\mathrm{i}\,d)\sqrt{d}\right.\right.$$

$$\operatorname{Log}\left[\left((2+2\,\mathrm{i})\,e^{\frac{\mathrm{i}\,e}{2}}\left(d+\mathrm{i}\,d\,e^{\mathrm{i}(e+fx)}-c\left(\mathrm{i}+e^{\mathrm{i}(e+fx)}\right)+(1-\mathrm{i})\sqrt{d}\,\sqrt{1+e^{2\mathrm{i}(e+fx)}}\right.\right.\right.$$

$$\left.\left.\left.\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\mathrm{i}(e+fx)}\right)}{1+e^{2\mathrm{i}(e+fx)}}}\right)\right)\Big/\left(d^{3/2}\,(3\,\mathrm{i}\,c+d)\left(\mathrm{i}+e^{\mathrm{i}(e+fx)}\right)\right)\right]+$$

$$\mathrm{i}\sqrt{d}\,(3\,\mathrm{i}\,c+d)\operatorname{Log}\left[\left((2+2\,\mathrm{i})\,e^{\frac{\mathrm{i}\,e}{2}}\left(c+\mathrm{i}\,d+\mathrm{i}\,c\,e^{\mathrm{i}(e+fx)}+d\,e^{\mathrm{i}(e+fx)}+\right.\right.\right.$$

$$\left.\left.(1+\mathrm{i})\sqrt{d}\,\sqrt{1+e^{2\mathrm{i}(e+fx)}}\,\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\mathrm{i}(e+fx)}\right)}{1+e^{2\mathrm{i}(e+fx)}}}\right)\right)\Big/$$

$$\left.\left.\left((3c-\mathrm{i}\,d)\,d^{3/2}\left(-\mathrm{i}+e^{\mathrm{i}(e+fx)}\right)\right)\right]+(2+2\,\mathrm{i})\,(c-\mathrm{i}\,d)^{3/2}\operatorname{Log}\left[2\left(\sqrt{c-\mathrm{i}\,d}\right.\right.$$

$$\operatorname{Cos}[e+fx]+\mathrm{i}\sqrt{c-\mathrm{i}\,d}\operatorname{Sin}[e+fx]+\sqrt{1+\operatorname{Cos}[2(e+fx)]+\mathrm{i}\operatorname{Sin}[2(e+fx)]}$$

$$\left.\left.\left.\sqrt{c+d\operatorname{Tan}[e+fx]}\right)\right]\right)+(1-\mathrm{i})\,d\sqrt{c+d\operatorname{Tan}[e+fx]}\Bigg)$$

Problem 1146: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\text{Tan}[e+f\,x])^{3/2}}{\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 195 leaves, 8 steps):

$$\frac{2\,(-1)^{3/4}\,d^{3/2}\,\text{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{a}\,f}-\frac{i\,(c-i\,d)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{2}\,\sqrt{a}\,f}+\frac{(i\,c-d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 518 leaves):

$$\frac{1}{2\,f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\sqrt{\text{Sec}[e+f\,x]}\left(\sqrt{2}\,\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\right.$$
$$\left(-i\,(c-i\,d)^{3/2}\,\text{Log}\left[2\left(\sqrt{c-i\,d}\,e^{i\,(e+f\,x)}+\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]-\right.$$
$$(1-i)\,d^{3/2}\left(\text{Log}\left[\left(\left(\frac{1}{2}+\frac{i}{2}\right)e^{\frac{i\,e}{2}}\left(d+i\,d\,e^{i\,(e+f\,x)}-c\left(i+e^{i\,(e+f\,x)}\right)+(1-i)\,\sqrt{d}\right.\right.\right.$$
$$\left.\left.\left.\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right)\Big/\left(d^{5/2}\left(i+e^{i\,(e+f\,x)}\right)\right)\right]-$$
$$\text{Log}\left[-\left(\left(\left(\frac{1}{2}-\frac{i}{2}\right)e^{\frac{i\,e}{2}}\left(c+i\,d+i\,c\,e^{i\,(e+f\,x)}+d\,e^{i\,(e+f\,x)}+(1+i)\,\sqrt{d}\right.\right.\right.\right.$$
$$\left.\left.\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right)\Big/$$
$$\left.\left.\left.\left.\left(d^{5/2}\left(-i+e^{i\,(e+f\,x)}\right)\right)\right)\right]\right)\right)+\frac{2\,i\,(c+i\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{\text{Sec}[e+f\,x]}}\right)$$

Problem 1149: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 415 leaves, 11 steps):

$$-\frac{1}{64 d^{3/2} f}(-1)^{1/4} a^{5/2} \left(5 c^4+100 i c^3 d+690 c^2 d^2-900 i c d^3-363 d^4\right) \text{ArcTanh}\left[\frac{(-1)^{3/4} \sqrt{d} \sqrt{a+i a \text{Tan}[e+f x]}}{\sqrt{a} \sqrt{c+d \text{Tan}[e+f x]}}\right]-\frac{4 i \sqrt{2} a^{5/2} (c-i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{2} \sqrt{a} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d} \sqrt{a+i a \text{Tan}[e+f x]}}\right]}{f}+\frac{1}{64 d f} a^2 \left(5 c^3+95 i c^2 d+273 c d^2-149 i d^3\right) \sqrt{a+i a \text{Tan}[e+f x]} \sqrt{c+d \text{Tan}[e+f x]}+\frac{1}{96 d f} a^2 \left(5 c^2+90 i c d+107 d^2\right) \sqrt{a+i a \text{Tan}[e+f x]} (c+d \text{Tan}[e+f x])^{3/2}+\frac{a^2 (c+17 i d) \sqrt{a+i a \text{Tan}[e+f x]} (c+d \text{Tan}[e+f x])^{5/2}}{24 d f}-\frac{a^2 \sqrt{a+i a \text{Tan}[e+f x]} (c+d \text{Tan}[e+f x])^{7/2}}{4 d f}$$

Result (type 3, 849 leaves):

$$-\left(\left(\left(\left(\frac{1}{128}+\frac{i}{128}\right) \text{Cos}[e+f x]^3 \left(\left(5 c^4+100 i c^3 d+690 c^2 d^2-900 i c d^3-363 d^4\right) \left(\text{Log}\left[\left((2+2 i) e^{\frac{i e}{2}} \left(c+i d-i c e^{i (e+f x)}-d e^{i (e+f x)}+(1+i) \sqrt{d} \sqrt{1+e^{2 i (e+f x)}} \sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right)\Big/\left(\sqrt{d} \left(-5 c^4-100 i c^3 d-690 c^2 d^2+900 i c d^3+363 d^4\right) \left(i+e^{i (e+f x)}\right)\right)\right]-\text{Log}\left[-\left(\left(\left((2+2 i) e^{\frac{i e}{2}} \left(c+i d+i c e^{i (e+f x)}+d e^{i (e+f x)}+(1+i) \sqrt{d} \sqrt{1+e^{2 i (e+f x)}} \sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right)\Big/\left(\sqrt{d} \left(-5 c^4-100 i c^3 d-690 c^2 d^2+900 i c d^3+363 d^4\right) \left(-i+e^{i (e+f x)}\right)\right)\right)\right]\right)+$$

$$(512+512 i) (c-i d)^{5/2} d^{3/2} \text{Log}\left[2 \left(\sqrt{c-i d} \text{Cos}[e+f x]+i \sqrt{c-i d} \text{Sin}[e+f x]+\right.\right.$$

$$\sqrt{1+\text{Cos}[2\,e+2\,f\,x]+\mathrm{i}\,\text{Sin}[2\,e+2\,f\,x]}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}\,\Big)\Big]\Bigg)$$

$$\left(\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]\right)\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^{5/2}\Bigg)\Big/\Bigg(d^{3/2}$$

$$f$$

$$\left(\text{Cos}[f\,x]+\mathrm{i}\,\text{Sin}[f\,x]\right)^2$$

$$\sqrt{1+\text{Cos}\left[2\,(e+f\,x)\right]+\mathrm{i}\,\text{Sin}\left[2\,(e+f\,x)\right]}\,\Bigg)\Bigg)+$$

$$\frac{1}{f\left(\text{Cos}[f\,x]+\mathrm{i}\,\text{Sin}[f\,x]\right)^2}\,\text{Cos}[e+f\,x]^2\,\sqrt{\text{Sec}[e+f\,x]\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)}$$

$$\Bigg(\left(-15\,c^3+719\,\mathrm{i}\,c^2\,d+1621\,c\,d^2-845\,\mathrm{i}\,d^3\right)\left(\frac{\text{Cos}[2\,e]}{192\,d}-\frac{\mathrm{i}\,\text{Sin}[2\,e]}{192\,d}\right)+$$

$$\left(17\,\mathrm{i}\,c+23\,d\right)\text{Sec}[e+f\,x]^2\left(\frac{1}{24}\,\mathrm{i}\,d\,\text{Cos}[2\,e]+\frac{1}{24}\,d\,\text{Sin}[2\,e]\right)+$$

$$\left(59\,c^2-226\,\mathrm{i}\,c\,d-131\,d^2\right)\text{Sec}[e+f\,x]$$

$$\left(-\frac{1}{96}\,\mathrm{i}\,\text{Cos}[3\,e+f\,x]-\frac{1}{96}\,\text{Sin}[3\,e+f\,x]\right)+$$

$$\text{Sec}[e+f\,x]^3\left(-\frac{1}{4}\,\mathrm{i}\,d^2\,\text{Cos}[3\,e+f\,x]-\frac{1}{4}\,d^2\,\text{Sin}[3\,e+f\,x]\right)\Bigg)$$

$$\left(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]\right)^{5/2}$$

Problem 1151: Result more than twice size of optimal antiderivative.

$$\int\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{5/2}\,\mathrm{d}x$$

Optimal (type 3, 257 leaves, 9 steps):

$$-\frac{1}{4f}(-1)^{1/4}\sqrt{a}\sqrt{d}\left(15c^2-10\,\mathrm{i}\,c\,d-7d^2\right)\mathrm{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}}{\sqrt{a}\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]-$$

$$\frac{\mathrm{i}\sqrt{2}\sqrt{a}\,(c-\mathrm{i}\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\,d}\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}}\right]}{f}+$$

$$\frac{(7c-\mathrm{i}\,d)\,d\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{4f}+$$

$$\frac{d\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}\,(c+d\,\mathrm{Tan}[e+f x])^{3/2}}{2f}$$

Result (type 3, 539 leaves):

$$\frac{1}{f}\left(\frac{1}{8}+\frac{\mathrm{i}}{8}\right)\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}$$

$$\left(-\frac{1}{\sqrt{1+\mathrm{Cos}[2(e+f x)]+\mathrm{i}\,\mathrm{Sin}[2(e+f x)]}}\mathrm{Cos}[e+f x]\left(\sqrt{d}\left(15c^2-10\,\mathrm{i}\,c\,d-7d^2\right)\right.\right.$$

$$\left(\mathrm{Log}\left[\left((2+2\,\mathrm{i})\,e^{\frac{\mathrm{i}\,e}{2}}\left(c+\mathrm{i}\,d-\mathrm{i}\,c\,e^{\mathrm{i}(e+f x)}-d\,e^{\mathrm{i}(e+f x)}+(1+\mathrm{i})\sqrt{d}\sqrt{1+e^{2\mathrm{i}(e+f x)}}\right.\right.\right.$$

$$\left.\left.\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\mathrm{i}(e+f x)}\right)}{1+e^{2\mathrm{i}(e+f x)}}}\right)\right)\Big/\left(d^{3/2}\left(-15c^2+10\,\mathrm{i}\,c\,d+7d^2\right)\right.$$

$$\left.\left.\left(\mathrm{i}+e^{\mathrm{i}(e+f x)}\right)\right)\right]-\mathrm{Log}\left[-\left(\left((2+2\,\mathrm{i})\,e^{\frac{\mathrm{i}\,e}{2}}\left(c+\mathrm{i}\,d+\mathrm{i}\,c\,e^{\mathrm{i}(e+f x)}+\right.\right.\right.\right.$$

$$\left.\left.d\,e^{\mathrm{i}(e+f x)}+(1+\mathrm{i})\sqrt{d}\sqrt{1+e^{2\mathrm{i}(e+f x)}}\sqrt{c-\frac{\mathrm{i}\,d\left(-1+e^{2\mathrm{i}(e+f x)}\right)}{1+e^{2\mathrm{i}(e+f x)}}}\right)\right)\Big/$$

$$\left.\left.\left.\left(d^{3/2}\left(-15c^2+10\,\mathrm{i}\,c\,d+7d^2\right)\left(-\mathrm{i}+e^{\mathrm{i}(e+f x)}\right)\right)\right)\right]\right)+$$

$$(8+8\,\mathrm{i})\,(c-\mathrm{i}\,d)^{5/2}\,\mathrm{Log}\left[2\left(\sqrt{c-\mathrm{i}\,d}\,\mathrm{Cos}[e+f x]+\mathrm{i}\sqrt{c-\mathrm{i}\,d}\,\mathrm{Sin}[e+f x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\mathrm{Cos}[2(e+f x)]+\mathrm{i}\,\mathrm{Sin}[2(e+f x)]}\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)\right]\right)+$$

$$\left.(1-\mathrm{i})\,d\sqrt{c+d\,\mathrm{Tan}[e+f x]}\,(9c-\mathrm{i}\,d+2d\,\mathrm{Tan}[e+f x])\right)$$

Problem 1152: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}{\sqrt{a+i\,a\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 250 leaves, 9 steps):

$$\frac{(-1)^{1/4}\,(5\,i\,c-d)\,d^{3/2}\,\mathrm{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\,\sqrt{a+i\,a\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{a}\,f}-\frac{i\,(c-i\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{2}\,\sqrt{a}\,f}-\frac{(c+2\,i\,d)\,d\,\sqrt{a+i\,a\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{a\,f}+\frac{(i\,c-d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{f\,\sqrt{a+i\,a\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 549 leaves):

$$\frac{1}{f\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\left(\frac{1}{2}+\frac{i}{2}\right)(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])\left(-\frac{1}{\sqrt{1+\text{Cos}[2\,(e+f\,x)]+i\,\text{Sin}[2\,(e+f\,x)]}}\left(d^{3/2}\,(-5\,i\,c+d)\right.\right.$$

$$\left(\text{Log}\left[\left((1+i)\,e^{\frac{i\,e}{2}}\left(-i\,d+d\,e^{i\,(e+f\,x)}+i\,c\,(i+e^{i\,(e+f\,x)})-(1+i)\,\sqrt{d}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{c-\frac{i\,d\,(-1+e^{2\,i\,(e+f\,x)})}{1+e^{2\,i\,(e+f\,x)}}}\right)\right)\Big/\left(d^{5/2}\,(-5\,i\,c+d)\,(i+e^{i\,(e+f\,x)})\right)\right]-$$

$$\text{Log}\left[\left((1+i)\,e^{\frac{i\,e}{2}}\left(c+i\,d+i\,c\,e^{i\,(e+f\,x)}+d\,e^{i\,(e+f\,x)}+(1+i)\,\sqrt{d}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\right.\right.\right.$$

$$\left.\left.\left.\left.\sqrt{c-\frac{i\,d\,(-1+e^{2\,i\,(e+f\,x)})}{1+e^{2\,i\,(e+f\,x)}}}\right)\right)\Big/\left(d^{5/2}\,(-5\,i\,c+d)\,(-i+e^{i\,(e+f\,x)})\right)\right]\right)+$$

$$(1+i)\,(c-i\,d)^{5/2}\,\text{Log}\left[2\left(\sqrt{c-i\,d}\,\text{Cos}[e+f\,x]+i\,\sqrt{c-i\,d}\,\text{Sin}[e+f\,x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\text{Cos}[2\,(e+f\,x)]+i\,\text{Sin}[2\,(e+f\,x)]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\right]\right)$$

$$(\text{Cos}[e]+i\,\text{Sin}[e])+(1+i)\,(\text{Cos}[f\,x]-i\,\text{Sin}[f\,x])\,\sqrt{c+d\,\text{Tan}[e+f\,x]}$$

$$\left.(c^2+2\,i\,c\,d-2\,d^2-i\,d^2\,\text{Tan}[e+f\,x])\right)$$

Problem 1153: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^{5/2}}{(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 257 leaves, 9 steps):

$$\frac{2\,(-1)^{1/4}\,d^{5/2}\,\text{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{a^{3/2}\,f}-\frac{i\,(c-i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,f}+$$

$$\frac{(c+i\,d)\,(i\,c+3\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{2\,a\,f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}+\frac{(i\,c-d)\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}$$

Result (type 3, 560 leaves):

$$\frac{1}{2\,f\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{3/2}}$$

$$\mathrm{Sec}[e+f\,x]\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^2\left(\frac{1}{\sqrt{1+\mathrm{Cos}[2\,(e+f\,x)]+\mathrm{i}\,\mathrm{Sin}[2\,(e+f\,x)]}}\right.$$

$$\left(\left(2+2\,\mathrm{i}\right)d^{5/2}\,\mathrm{Log}\left[\left(\left(\frac{1}{4}+\frac{\mathrm{i}}{4}\right)e^{\frac{\mathrm{i}\,e}{2}}\left(c+\mathrm{i}\,d-\mathrm{i}\,c\,e^{\mathrm{i}\,(e+f\,x)}-d\,e^{\mathrm{i}\,(e+f\,x)}+\left(1+\mathrm{i}\right)\sqrt{d}\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\,\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\right)\Big/\left(d^{7/2}\left(\mathrm{i}+e^{\mathrm{i}\,(e+f\,x)}\right)\right)\right]-$$

$$\left(2+2\,\mathrm{i}\right)d^{5/2}\,\mathrm{Log}\left[-\left(\left(\left(\frac{1}{4}+\frac{\mathrm{i}}{4}\right)e^{\frac{\mathrm{i}\,e}{2}}\left(c+\mathrm{i}\,d+\mathrm{i}\,c\,e^{\mathrm{i}\,(e+f\,x)}+d\,e^{\mathrm{i}\,(e+f\,x)}+\left(1+\mathrm{i}\right)\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\sqrt{d}\,\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\,\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\right)\Big/\left(d^{7/2}\left(-\mathrm{i}+e^{\mathrm{i}\,(e+f\,x)}\right)\right)\right)\right]-$$

$$\mathrm{i}\,\left(c-\mathrm{i}\,d\right)^{5/2}\,\mathrm{Log}\left[2\left(\sqrt{c-\mathrm{i}\,d}\,\mathrm{Cos}[e+f\,x]+\mathrm{i}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{Sin}[e+f\,x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\mathrm{Cos}[2\,(e+f\,x)]+\mathrm{i}\,\mathrm{Sin}[2\,(e+f\,x)]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\right]\right)$$

$$\left(\mathrm{Cos}[2\,e]+\mathrm{i}\,\mathrm{Sin}[2\,e]\right)+\frac{1}{3}\left(c+\mathrm{i}\,d\right)\left(\mathrm{i}\,\mathrm{Cos}[2\,f\,x]+\mathrm{Sin}[2\,f\,x]\right)$$

$$\left(\left(5\,c-9\,\mathrm{i}\,d\right)\mathrm{Cos}[e+f\,x]+\left(3\,\mathrm{i}\,c+11\,d\right)\mathrm{Sin}[e+f\,x]\right)$$

$$\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)$$

Problem 1155: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{5/2}}{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 200 leaves, 8 steps):

$$-\frac{\left(-1\right)^{1/4}a^{5/2}\left(c+5\,\mathrm{i}\,d\right)\mathrm{ArcTanh}\left[\frac{\left(-1\right)^{3/4}\sqrt{d}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{d^{3/2}\,f}-$$

$$\frac{4\,\mathrm{i}\,\sqrt{2}\,a^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{c-\mathrm{i}\,d}\,f}-\frac{a^2\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{d\,f}$$

Result (type 3, 602 leaves):

$$\frac{1}{d^{3/2} f \left(\text{Cos}[f x] + i \,\text{Sin}[f x]\right)^2} \left(\frac{1}{2} + \frac{i}{2}\right) \text{Cos}[e + f x]^2 \left(a + i\, a\, \text{Tan}[e + f x]\right)^{5/2} \left(\frac{1}{\sqrt{c - i d} \sqrt{1 + \text{Cos}[2 (e + f x)] + i\, \text{Sin}[2 (e + f x)]}}\right.$$

$$\text{Cos}[e + f x] \left(\sqrt{c - i d}\, (c + 5 i d)\, \text{Log}\left[\left((2 + 2 i)\, e^{\frac{i e}{2}} \left(-i d + d\, e^{i (e+f x)} + i c \left(i + e^{i (e+f x)}\right) - (1 + i) \sqrt{d} \sqrt{1 + e^{2 i (e+f x)}} \sqrt{c - \frac{i d \left(-1 + e^{2 i (e+f x)}\right)}{1 + e^{2 i (e+f x)}}}\right)\right)\right/$$

$$\left.\left(\sqrt{d}\, (-i c + 5 d) \left(i + e^{i (e+f x)}\right)\right)\right] - \sqrt{c - i d}\, (c + 5 i d)$$

$$\text{Log}\left[\left((2 + 2 i)\, e^{\frac{i e}{2}} \left(c + i d + i c\, e^{i (e+f x)} + d\, e^{i (e+f x)} + (1 + i) \sqrt{d} \sqrt{1 + e^{2 i (e+f x)}}\right.\right.\right.$$

$$\left.\left.\left.\sqrt{c - \frac{i d \left(-1 + e^{2 i (e+f x)}\right)}{1 + e^{2 i (e+f x)}}}\right)\right) \middle/ \left(\sqrt{d}\, (-i c + 5 d) \left(-i + e^{i (e+f x)}\right)\right)\right] +$$

$$(8 + 8 i)\, d^{3/2}\, \text{Log}\left[2 \left(\sqrt{c - i d}\, \text{Cos}[e + f x] + i \sqrt{c - i d}\, \text{Sin}[e + f x] + \right.\right.$$

$$\left.\left.\left.\sqrt{1 + \text{Cos}[2 (e + f x)] + i\, \text{Sin}[2 (e + f x)]} \sqrt{c + d\, \text{Tan}[e + f x]}\right)\right]\right)$$

$$\left(-\text{Cos}[2 e] + i\, \text{Sin}[2 e]\right) - (1 - i) \sqrt{d}\, \text{Cos}[2 e] \sqrt{c + d\, \text{Tan}[e + f x]} +$$

$$\left.(1 + i) \sqrt{d}\, \text{Sin}[2 e] \sqrt{c + d\, \text{Tan}[e + f x]}\right)$$

Problem 1156: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a + i\, a\, \text{Tan}[e + f x]\right)^{3/2}}{\sqrt{c + d\, \text{Tan}[e + f x]}}\, dx$$

Optimal (type 3, 151 leaves, 7 steps):

$$-\frac{2 (-1)^{3/4} a^{3/2}\, \text{ArcTanh}\left[\frac{(-1)^{3/4} \sqrt{d} \sqrt{a + i\, a\, \text{Tan}[e+f x]}}{\sqrt{a} \sqrt{c + d\, \text{Tan}[e+f x]}}\right]}{\sqrt{d}\, f} - \frac{2 i \sqrt{2}\, a^{3/2}\, \text{ArcTanh}\left[\frac{\sqrt{2} \sqrt{a} \sqrt{c + d\, \text{Tan}[e+f x]}}{\sqrt{c - i d} \sqrt{a + i\, a\, \text{Tan}[e+f x]}}\right]}{\sqrt{c - i d}\, f}$$

Result (type 3, 505 leaves):

$$\frac{1}{\sqrt{c-i d}\,\sqrt{d}\,f}\left(\frac{1}{2}-\frac{i}{2}\right)\text{Cos}[e+f x]\left(\sqrt{c-i d}\,\text{Log}\left[\left((2-2 i)\,e^{\frac{3 i e}{2}}\left(-i d+d e^{i(e+f x)}+i c\left(i+e^{i(e+f x)}\right)-\right.\right.\right.\right.$$

$$\left.\left.\left.(1+i)\sqrt{d}\sqrt{1+e^{2 i(e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\right)\right)\Big/\left(\sqrt{d}\left(i+e^{i(e+f x)}\right)\right)\right]-$$

$$\sqrt{c-i d}\,\text{Log}\left[\left((2+2 i)\,e^{\frac{3 i e}{2}}\left(d-i d e^{i(e+f x)}+c\left(-i+e^{i(e+f x)}\right)+\right.\right.\right.$$

$$\left.\left.\left.(1-i)\sqrt{d}\sqrt{1+e^{2 i(e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\right)\right)\Big/\left(\sqrt{d}\left(-i+e^{i(e+f x)}\right)\right)\right]+$$

$$(2-2 i)\sqrt{d}\,\text{Log}\left[2\left(\sqrt{c-i d}\,\text{Cos}[e+f x]+i\sqrt{c-i d}\,\text{Sin}[e+f x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\text{Cos}[2(e+f x)]+i\,\text{Sin}[2(e+f x)]}\,\sqrt{c+d\,\text{Tan}[e+f x]}\right)\right]\right)$$

$$\left(\text{Cos}[f x]-i\,\text{Sin}[f x]\right)\sqrt{1+\text{Cos}[2(e+f x)]+i\,\text{Sin}[2(e+f x)]}$$
$$\left(\text{Cos}[2 e+f x]-i\,\text{Sin}[2 e+f x]\right)$$
$$\left(a+i a\,\text{Tan}[e+f x]\right)^{3/2}$$

Problem 1161: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}}\,dx$$

Optimal (type 3, 209 leaves, 8 steps):

$$\frac{2(-1)^{1/4}a^{5/2}\,\text{ArcTanh}\left[\frac{(-1)^{3/4}\sqrt{d}\sqrt{a+i a\,\text{Tan}[e+f x]}}{\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{d^{3/2}f}-$$

$$\frac{4 i\sqrt{2}\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i d}\sqrt{a+i a\,\text{Tan}[e+f x]}}\right]}{(c-i d)^{3/2}f}+\frac{2 a^2(c+i d)\sqrt{a+i a\,\text{Tan}[e+f x]}}{(c-i d)\,d\,f\sqrt{c+d\,\text{Tan}[e+f x]}}$$

Result (type 3, 718 leaves):

$$\left(\mathrm{Cos}[e+f x]^2 \sqrt{\mathrm{Sec}[e+f x]\,(c\,\mathrm{Cos}[e+f x]+d\,\mathrm{Sin}[e+f x])}\right.$$

$$\left(\frac{(c+i d)\,\mathrm{Cos}[e]\left(\frac{2\,\mathrm{Cos}[2e]}{d}-\frac{2\,i\,\mathrm{Sin}[2e]}{d}\right)}{(c-i d)\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])}+\right.$$

$$((-2\,\mathrm{Cos}[2e]+2\,i\,\mathrm{Sin}[2e])\,(c\,\mathrm{Sin}[f x]+i\,d\,\mathrm{Sin}[f x]))\Big/$$

$$\left.((c-i d)\,(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e])\,(c\,\mathrm{Cos}[e+f x]+d\,\mathrm{Sin}[e+f x]))\right)$$

$$\left.(a+i\,a\,\mathrm{Tan}[e+f x])^{5/2}\right)\Big/\left(f\,(\mathrm{Cos}[f x]+i\,\mathrm{Sin}[f x])^2\right)+$$

$$\left((1+i)\,\mathrm{Cos}[e+f x]^3\left((c-i d)^{3/2}\,\mathrm{Log}\left[\left((2-2i)\,e^{\frac{i e}{2}}\left(-i d+d\,e^{i(e+f x)}+i c\,(i+e^{i(e+f x)})-(1+i)\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{d}\,\sqrt{1+e^{2i(e+f x)}}\,\sqrt{c-\frac{i d\,(-1+e^{2i(e+f x)})}{1+e^{2i(e+f x)}}}\right)\right)\Big/\left(\sqrt{d}\,(i c+d)\,(i+e^{i(e+f x)})\right)\right]-$$

$$(c-i d)^{3/2}\,\mathrm{Log}\left[\left((2+2i)\,e^{\frac{i e}{2}}\left(c+i d+i c\,e^{i(e+f x)}+d\,e^{i(e+f x)}+(1+i)\,\sqrt{d}\right.\right.\right.$$

$$\left.\left.\left.\sqrt{1+e^{2i(e+f x)}}\,\sqrt{c-\frac{i d\,(-1+e^{2i(e+f x)})}{1+e^{2i(e+f x)}}}\right)\right)\Big/\left(\sqrt{d}\,(i c+d)\,(1+i\,e^{i(e+f x)})\right)\right]-$$

$$(4+4i)\,d^{3/2}\,\mathrm{Log}\left[2\left(\sqrt{c-i d}\,\mathrm{Cos}[e+f x]+i\sqrt{c-i d}\,\mathrm{Sin}[e+f x]+\right.\right.$$

$$\left.\left.\left.\sqrt{1+\mathrm{Cos}[2e+2f x]+i\,\mathrm{Sin}[2e+2f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)\right]\right)$$

$$\left.(\mathrm{Cos}[2e]-i\,\mathrm{Sin}[2e])\,(a+i\,a\,\mathrm{Tan}[e+f x])^{5/2}\right)\Big/\left((c-i d)^{3/2}\,d^{3/2}\,f\right.$$

$$\left.\frac{(\mathrm{Cos}[f x]+i\,\mathrm{Sin}[f x])^2}{\sqrt{1+\mathrm{Cos}[2e+2f x]+i\,\mathrm{Sin}[2e+2f x]}}\right)$$

Problem 1163: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+i\,a\,\mathrm{Tan}[e+f x]}}{(c+d\,\mathrm{Tan}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 129 leaves, 3 steps):

$$-\frac{\mathrm{i}\sqrt{2}\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}}\right]}{(c-\mathrm{i}\,d)^{3/2}\,f}-\frac{2\,d\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}}{(c^2+d^2)\,f\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 337 leaves):

$$\left(\sqrt{2}\sqrt{e^{\mathrm{i}\,f\,x}}\sqrt{\frac{e^{\mathrm{i}\,(e+f\,x)}}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\right.$$

$$\left(-\frac{2\,d\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}}{(c-\mathrm{i}\,d)\,(c+\mathrm{i}\,d)\,\left(-\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)+c\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)\right)}-\frac{1}{(c-\mathrm{i}\,d)^{3/2}}\right.$$

$$\left.\mathrm{i}\,e^{-\mathrm{i}\,(e+f\,x)}\,\text{Log}\left[2\left(\sqrt{c-\mathrm{i}\,d}\;e^{\mathrm{i}\,(e+f\,x)}+\sqrt{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\sqrt{c-\frac{\mathrm{i}\,d\,\left(-1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\right)\right]\right)$$

$$\left.\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\right)\Big/\left(f\sqrt{\text{Sec}[e+f\,x]}\sqrt{\text{Cos}[f\,x]+\mathrm{i}\,\text{Sin}[f\,x]}\right)$$

Problem 1165: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^{3/2}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 269 leaves, 6 steps):

$$-\frac{\mathrm{i}\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}}\right]}{2\sqrt{2}\,a^{3/2}\,(c-\mathrm{i}\,d)^{3/2}\,f}-\frac{1}{3\,(\mathrm{i}\,c-d)\,f\,(a+\mathrm{i}\,a\,\text{Tan}[e+f\,x])^{3/2}\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{3\,\mathrm{i}\,c-11\,d}{6\,a\,(c+\mathrm{i}\,d)^2\,f\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{(3\,c-5\,\mathrm{i}\,d)\,(c+5\,\mathrm{i}\,d)\,d\sqrt{a+\mathrm{i}\,a\,\text{Tan}[e+f\,x]}}{6\,a^2\,(c-\mathrm{i}\,d)\,(c+\mathrm{i}\,d)^3\,f\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 642 leaves):

$$- \left(\left(\left(\mathrm{i}\, e^{2\,\mathrm{i}\,e} \sqrt{e^{\mathrm{i}\,f\,x}}\, \mathrm{Log}\left[2 \left(\sqrt{c - \mathrm{i}\,d}\; e^{\mathrm{i}\,(e+f\,x)} + \sqrt{1 + e^{2\,\mathrm{i}\,(e+f\,x)}}\, \sqrt{c - \frac{\mathrm{i}\,d\,\left(-1 + e^{2\,\mathrm{i}\,(e+f\,x)}\right)}{1 + e^{2\,\mathrm{i}\,(e+f\,x)}}} \right) \right] \right.\right.\right.$$

$$\left. \mathrm{Sec}[e + f\,x]^{3/2} \left(\mathrm{Cos}[f\,x] + \mathrm{i}\,\mathrm{Sin}[f\,x]\right)^{3/2} \right) \Big/$$

$$\left.\left. \left(2\sqrt{2}\, \left(c - \mathrm{i}\,d\right)^{3/2} \sqrt{\frac{e^{\mathrm{i}\,(e+f\,x)}}{1 + e^{2\,\mathrm{i}\,(e+f\,x)}}}\, \sqrt{1 + e^{2\,\mathrm{i}\,(e+f\,x)}}\; f\, \left(a + \mathrm{i}\,a\,\mathrm{Tan}[e + f\,x]\right)^{3/2} \right) \right) +$$

$$\frac{1}{f\,\left(a + \mathrm{i}\,a\,\mathrm{Tan}[e + f\,x]\right)^{3/2}}\, \mathrm{Sec}[e + f\,x]^2 \left(\mathrm{Cos}[f\,x] + \mathrm{i}\,\mathrm{Sin}[f\,x]\right)^2$$

$$\sqrt{\mathrm{Sec}[e + f\,x]\, \left(c\,\mathrm{Cos}[e + f\,x] + d\,\mathrm{Sin}[e + f\,x]\right)}$$

$$\left(\frac{5\,\mathrm{i}\,\left(c + 3\,\mathrm{i}\,d\right)\,\mathrm{Cos}[2\,f\,x]}{12\,\left(c + \mathrm{i}\,d\right)^3} + \left(\left(2\,\mathrm{i}\,c^3\,\mathrm{Cos}[e] - 5\,c^2\,d\,\mathrm{Cos}[e] + 7\,\mathrm{i}\,c\,d^2\,\mathrm{Cos}[e] + 12\,d^3\,\mathrm{Cos}[e] + \right.\right.\right.$$

$$\left.\left. 2\,\mathrm{i}\,c^2\,d\,\mathrm{Sin}[e] - 5\,c\,d^2\,\mathrm{Sin}[e] + 7\,\mathrm{i}\,d^3\,\mathrm{Sin}[e]\right) \left(\frac{1}{6}\,\mathrm{Cos}[2\,e] + \frac{1}{6}\,\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\right) \Big/$$

$$\left(\left(c - \mathrm{i}\,d\right)\,\left(c + \mathrm{i}\,d\right)^3\,\left(c\,\mathrm{Cos}[e] + d\,\mathrm{Sin}[e]\right)\right) + \frac{\mathrm{Cos}[4\,f\,x]\,\left(\frac{1}{12}\,\mathrm{i}\,\mathrm{Cos}[2\,e] + \frac{1}{12}\,\mathrm{Sin}[2\,e]\right)}{\left(c + \mathrm{i}\,d\right)^2} +$$

$$\frac{5\,\left(c + 3\,\mathrm{i}\,d\right)\,\mathrm{Sin}[2\,f\,x]}{12\,\left(c + \mathrm{i}\,d\right)^3} + \frac{\left(\frac{1}{12}\,\mathrm{Cos}[2\,e] - \frac{1}{12}\,\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\,\mathrm{Sin}[4\,f\,x]}{\left(c + \mathrm{i}\,d\right)^2} -$$

$$\left(2\,\left(\frac{1}{2}\,\mathrm{i}\,d^4\,\mathrm{Cos}[2\,e - f\,x] - \frac{1}{2}\,\mathrm{i}\,d^4\,\mathrm{Cos}[2\,e + f\,x] - \frac{1}{2}\,d^4\,\mathrm{Sin}[2\,e - f\,x] + \frac{1}{2}\,d^4\,\mathrm{Sin}[2\,e + f\,x]\right)\right) \Big/$$

$$\left.\left(\left(c - \mathrm{i}\,d\right)\,\left(c + \mathrm{i}\,d\right)^3\,\left(c\,\mathrm{Cos}[e] + d\,\mathrm{Sin}[e]\right)\,\left(c\,\mathrm{Cos}[e + f\,x] + d\,\mathrm{Sin}[e + f\,x]\right)\right)\right)$$

Problem 1166: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\left(a + \mathrm{i}\,a\,\mathrm{Tan}[e + f\,x]\right)^{5/2}\,\left(c + d\,\mathrm{Tan}[e + f\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 349 leaves, 7 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{4\,\sqrt{2}\,a^{5/2}\,(c-i\,d)^{3/2}\,f}-\frac{1}{5\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{5\,i\,c-17\,d}{30\,a\,(c+i\,d)^2\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{15\,c^2+70\,i\,c\,d-151\,d^2}{60\,a^2\,(i\,c-d)^3\,f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+$$

$$\frac{d\,(15\,c^3+65\,i\,c^2\,d-117\,c\,d^2+317\,i\,d^3)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{60\,a^3\,(c-i\,d)\,(c+i\,d)^4\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 788 leaves) :

$$-\left(\left(\left(i\, e^{3 i e}\sqrt{e^{i f x}}\, \text{Log}\left[2\left(\sqrt{c-i d}\; e^{i (e+f x)}+\sqrt{1+e^{2 i (e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]\right.\right.\right.$$

$$\left.\text{Sec}[e+f x]^{5/2}\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^{5/2}\right)\Big/$$

$$\left.\left(4\sqrt{2}\,(c-i d)^{3/2}\sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}}\sqrt{1+e^{2 i (e+f x)}}\; f\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}\right)\right)+$$

$$\frac{1}{f\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}\text{Sec}[e+f x]^3\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^3$$

$$\sqrt{\text{Sec}[e+f x]\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)}$$

$$\left(\frac{\left(17 c^2+77 i c d-126 d^2\right)\text{Cos}[2 f x]\left(\frac{1}{60} i\,\text{Cos}[e]-\frac{\text{Sin}[e]}{60}\right)}{(c+i d)^4}+\right.$$

$$\frac{(7 c+16 i d)\,\text{Cos}[4 f x]\left(\frac{1}{60} i\,\text{Cos}[e]+\frac{\text{Sin}[e]}{60}\right)}{(c+i d)^3}+$$

$$\left(\left(23 c^4\,\text{Cos}[e]+91 i c^3 d\,\text{Cos}[e]-109 c^2 d^2\,\text{Cos}[e]+223 i c d^3\,\text{Cos}[e]+240 d^4\,\text{Cos}[e]+\right.\right.$$

$$\left.23 c^3 d\,\text{Sin}[e]+91 i c^2 d^2\,\text{Sin}[e]-109 c d^3\,\text{Sin}[e]+223 i d^4\,\text{Sin}[e]\right)$$

$$\left.\left(\frac{1}{120}\text{Cos}[3 e]+\frac{1}{120} i\,\text{Sin}[3 e]\right)\right)\Big/\left((c-i d)(c+i d)^4\left(-i c\,\text{Cos}[e]-i d\,\text{Sin}[e]\right)\right)+$$

$$\frac{\text{Cos}[6 f x]\left(\frac{1}{40} i\,\text{Cos}[3 e]+\frac{1}{40}\text{Sin}[3 e]\right)}{(c+i d)^2}+$$

$$\frac{\left(17 c^2+77 i c d-126 d^2\right)\left(\frac{\text{Cos}[e]}{60}+\frac{1}{60} i\,\text{Sin}[e]\right)\text{Sin}[2 f x]}{(c+i d)^4}+$$

$$\frac{(7 c+16 i d)\left(\frac{\text{Cos}[e]}{60}-\frac{1}{60} i\,\text{Sin}[e]\right)\text{Sin}[4 f x]}{(c+i d)^3}+\frac{\left(\frac{1}{40}\text{Cos}[3 e]-\frac{1}{40} i\,\text{Sin}[3 e]\right)\text{Sin}[6 f x]}{(c+i d)^2}+$$

$$\left(2\left(\frac{1}{2} d^5\,\text{Cos}[3 e-f x]-\frac{1}{2} d^5\,\text{Cos}[3 e+f x]+\frac{1}{2} i d^5\,\text{Sin}[3 e-f x]-\frac{1}{2} i d^5\,\text{Sin}[3 e+f x]\right)\right)\Big/$$

$$\left.\left((c-i d)(c+i d)^4\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\right)\right)$$

Problem 1167: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 181 leaves, 4 steps):

$$-\frac{4\,i\,\sqrt{2}\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}-\frac{2\,a\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{3\,(i\,c+d)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{4\,i\,a^2\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{(c-i\,d)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 481 leaves) :

$$-\left(\left(4\,i\,\sqrt{2}\,e^{-2\,i\,e}\,\sqrt{e^{i\,f\,x}}\,\text{Log}\left[2\,e^{-i\,e}\left(\sqrt{c-i\,d}\,e^{i\,(e+f\,x)}+\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\sqrt{c-\frac{i\,d\,\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]\,(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\right)\Big/\left((c-i\,d)^{5/2}\,\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\,f\,\text{Sec}[e+f\,x]^{5/2}\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^{5/2}\right)\right)+$$

$$\left(\text{Cos}[e+f\,x]^2\,\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\right.$$

$$\left(\frac{(7\,\text{Cos}[e]+i\,\text{Sin}[e])\,\left(\frac{2}{3}\,\text{Cos}[2\,e]-\frac{2}{3}\,i\,\text{Sin}[2\,e]\right)}{(c-i\,d)^2\,(-i\,c\,\text{Cos}[e]-i\,d\,\text{Sin}[e])}+\frac{\frac{2}{3}\,d\,\text{Cos}[2\,e]-\frac{2}{3}\,i\,d\,\text{Sin}[2\,e]}{(c-i\,d)^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2}+\right.$$

$$\left.\left(\left(-\frac{2}{3}\,\text{Cos}[2\,e]+\frac{2}{3}\,i\,\text{Sin}[2\,e]\right)\,(c\,\text{Sin}[f\,x]+7\,i\,d\,\text{Sin}[f\,x])\right)\Big/\left((c-i\,d)^2\,(c\,\text{Cos}[e]+d\,\text{Sin}[e])\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\right)\right)$$

$$\left.(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\right)\Big/\left(f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\right)$$

Problem 1168: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 179 leaves, 4 steps):

$$-\frac{2\, i \sqrt{2}\, a^{3/2}\, \text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\, f}-\frac{2\,d\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{3\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{2\,i\,a\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{(c-i\,d)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 481 leaves):

$$-\left(\left(\left(2\,i\sqrt{2}\,\left(e^{i\,f\,x}\right)^{3/2}\text{Log}\left[2\,e^{-i\,e}\left(\sqrt{c-i\,d}\;e^{i\,(e+f\,x)}+\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\sqrt{c-\frac{i\,d\left(-1+e^{2\,i\,(e+f\,x)}\right)}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^{3/2}\right)\Big/\left(\left(c-i\,d\right)^{5/2}\left(\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}\right)^{3/2}\left(1+e^{2\,i\,(e+f\,x)}\right)^{3/2} f\,\text{Sec}[e+f\,x]^{3/2}\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^{3/2}\right)+\left(\text{Cos}[e+f\,x]\sqrt{\text{Sec}[e+f\,x]\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)}\left(\frac{\left(\frac{2\,\text{Cos}[e]}{3}-\frac{2}{3}\,i\,\text{Sin}[e]\right)\left(3\,c\,\text{Cos}[e]+4\,i\,d\,\text{Cos}[e]-d\,\text{Sin}[e]\right)}{(c-i\,d)^2\,(c+i\,d)\left(-i\,c\,\text{Cos}[e]-i\,d\,\text{Sin}[e]\right)}+\frac{\frac{2}{3}\,i\,d^2\,\text{Cos}[e]+\frac{2}{3}\,d^2\,\text{Sin}[e]}{(c-i\,d)^2\,(c+i\,d)\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2}-\left(i\,d\left(\frac{8\,\text{Cos}[e]}{3}-\frac{8}{3}\,i\,\text{Sin}[e]\right)\text{Sin}[f\,x]\right)\Big/\left((c-i\,d)^2\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)\right)\right)\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^{3/2}\right)\Big/\left(f\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)\right)$$

Problem 1169: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 188 leaves, 5 steps):

$$-\frac{i\sqrt{2}\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}-\frac{2\,d\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{3\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{2\,(5\,c+i\,d)\,d\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{3\,(c^2+d^2)^2\,f\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 394 leaves):

$$\left(\sqrt{2}\sqrt{e^{i\,f\,x}}\left(-\left(\left(4\,d\,e^{i\,(e+f\,x)}\sqrt{1+e^{2\,i\,(e+f\,x)}}\sqrt{c-\frac{i\,d\,(-1+e^{2\,i\,(e+f\,x)})}{1+e^{2\,i\,(e+f\,x)}}}\left(d^2\,e^{2\,i\,(e+f\,x)}+3\,c^2\,(1+e^{2\,i\,(e+f\,x)})-i\,c\,d\,(-3+2\,e^{2\,i\,(e+f\,x)})\right)\right)\Big/\left(3\,(c-i\,d)^2\,(c+i\,d)^2\,\left(-i\,d\,(-1+e^{2\,i\,(e+f\,x)})+c\,(1+e^{2\,i\,(e+f\,x)})\right)^2\right)\right)-\frac{1}{(c-i\,d)^{5/2}}\,i\,\text{Log}\left[2\left(\sqrt{c-i\,d}\,e^{i\,(e+f\,x)}+\sqrt{1+e^{2\,i\,(e+f\,x)}}\sqrt{c-\frac{i\,d\,(-1+e^{2\,i\,(e+f\,x)})}{1+e^{2\,i\,(e+f\,x)}}}\right)\right]\right)\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\sqrt{1+e^{2\,i\,(e+f\,x)}}\;f\sqrt{\text{Sec}[e+f\,x]}\sqrt{\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]}\right)$$

Problem 1170: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 277 leaves, 6 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{2}\sqrt{a}\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{2}\sqrt{a}\,(c-i\,d)^{5/2}\,f}-\frac{1}{(i\,c-d)\,f\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{d\,(3\,i\,c+5\,d)\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{3\,a\,(i\,c-d)\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{(3\,c-i\,d)\,(c-7\,i\,d)\,d\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{3\,a\,(c-i\,d)^2\,(c+i\,d)^3\,f\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 687 leaves):

$$-\left(\left(\left(\mathrm{i}\, e^{\mathrm{i}\, e}\sqrt{e^{\mathrm{i}\, f\, x}}\, \mathrm{Log}\left[2\left(\sqrt{c-\mathrm{i}\, d}\; e^{\mathrm{i}\,(e+f\, x)}+\sqrt{1+e^{2\,\mathrm{i}\,(e+f\, x)}}\;\sqrt{c-\frac{\mathrm{i}\, d\left(-1+e^{2\,\mathrm{i}\,(e+f\, x)}\right)}{1+e^{2\,\mathrm{i}\,(e+f\, x)}}}\right)\right]\right.\right.\right.$$

$$\left.\sqrt{\mathrm{Sec}[e+f\, x]}\;\sqrt{\mathrm{Cos}[f\, x]+\mathrm{i}\,\mathrm{Sin}[f\, x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{2}\,\left(c-\mathrm{i}\, d\right)^{5/2}\sqrt{\frac{e^{\mathrm{i}\,(e+f\, x)}}{1+e^{2\,\mathrm{i}\,(e+f\, x)}}}\;\sqrt{1+e^{2\,\mathrm{i}\,(e+f\, x)}}\; f\sqrt{a+\mathrm{i}\, a\,\mathrm{Tan}[e+f\, x]}\right)\right)\right)+$$

$$\frac{1}{f\sqrt{a+\mathrm{i}\, a\,\mathrm{Tan}[e+f\, x]}}\,\mathrm{Sec}[e+f\, x]\,\left(\mathrm{Cos}[f\, x]+\mathrm{i}\,\mathrm{Sin}[f\, x]\right)$$

$$\sqrt{\mathrm{Sec}[e+f\, x]\,\left(c\,\mathrm{Cos}[e+f\, x]+d\,\mathrm{Sin}[e+f\, x]\right)}$$

$$\left(\frac{\mathrm{Cos}[2\, f\, x]\,\left(\frac{1}{2}\,\mathrm{i}\,\mathrm{Cos}[e]+\frac{\mathrm{Sin}[e]}{2}\right)}{\left(c+\mathrm{i}\, d\right)^{3}}+\left(\left(\frac{\mathrm{Cos}[e]}{6}+\frac{1}{6}\,\mathrm{i}\,\mathrm{Sin}[e]\right)\,\left(3\,\mathrm{i}\, c^{3}\,\mathrm{Cos}[e]+6\, c^{2}\, d\,\mathrm{Cos}[e]-\right.\right.\right.$$

$$\left.\left.39\,\mathrm{i}\, c\, d^{2}\,\mathrm{Cos}[e]-8\, d^{3}\,\mathrm{Cos}[e]+3\,\mathrm{i}\, c^{2}\, d\,\mathrm{Sin}[e]+6\, c\, d^{2}\,\mathrm{Sin}[e]+\mathrm{i}\, d^{3}\,\mathrm{Sin}[e]\right)\right)\Big/$$

$$\left(\left(c-\mathrm{i}\, d\right)^{2}\,\left(c+\mathrm{i}\, d\right)^{3}\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)\right)+\frac{\left(\frac{\mathrm{Cos}[e]}{2}-\frac{1}{2}\,\mathrm{i}\,\mathrm{Sin}[e]\right)\,\mathrm{Sin}[2\, f\, x]}{\left(c+\mathrm{i}\, d\right)^{3}}+$$

$$\frac{-\frac{2}{3}\,\mathrm{i}\, d^{4}\,\mathrm{Cos}[e]+\frac{2}{3}\, d^{4}\,\mathrm{Sin}[e]}{\left(c-\mathrm{i}\, d\right)^{2}\,\left(c+\mathrm{i}\, d\right)^{3}\,\left(c\,\mathrm{Cos}[e+f\, x]+d\,\mathrm{Sin}[e+f\, x]\right)^{2}}+$$

$$\left(4\left(-\frac{5}{2}\, c\, d^{3}\,\mathrm{Cos}[e-f\, x]+\frac{1}{2}\,\mathrm{i}\, d^{4}\,\mathrm{Cos}[e-f\, x]+\frac{5}{2}\, c\, d^{3}\,\mathrm{Cos}[e+f\, x]-\frac{1}{2}\,\mathrm{i}\, d^{4}\,\mathrm{Cos}[e+f\, x]-\right.\right.$$

$$\left.\left.\frac{5}{2}\,\mathrm{i}\, c\, d^{3}\,\mathrm{Sin}[e-f\, x]-\frac{1}{2}\, d^{4}\,\mathrm{Sin}[e-f\, x]+\frac{5}{2}\,\mathrm{i}\, c\, d^{3}\,\mathrm{Sin}[e+f\, x]+\frac{1}{2}\, d^{4}\,\mathrm{Sin}[e+f\, x]\right)\right)\Big/$$

$$\left.\left(3\,\left(c-\mathrm{i}\, d\right)^{2}\,\left(c+\mathrm{i}\, d\right)^{3}\,\left(c\,\mathrm{Cos}[e]+d\,\mathrm{Sin}[e]\right)\,\left(c\,\mathrm{Cos}[e+f\, x]+d\,\mathrm{Sin}[e+f\, x]\right)\right)\right)$$

Problem 1171: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+\mathrm{i}\, a\,\mathrm{Tan}[e+f\, x]\right)^{3/2}\,\left(c+d\,\mathrm{Tan}[e+f\, x]\right)^{5/2}}\,dx$$

Optimal (type 3, 354 leaves, 7 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,(c-i\,d)^{5/2}\,f}-\frac{1}{3\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{i\,c-5\,d}{2\,a\,(c+i\,d)^2\,f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{d\,(3\,c^2+14\,i\,c\,d+21\,d^2)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{6\,a^2\,(c-i\,d)\,(c+i\,d)^3\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$

$$\frac{(c-3\,i\,d)\,d\,(3\,c^2+22\,i\,c\,d+13\,d^2)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{6\,a^2\,(c-i\,d)^2\,(c+i\,d)^4\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 803 leaves) :

$$-\Bigg(\Bigg(\bigg(i\,e^{2 i e}\sqrt{e^{i f x}}\,\text{Log}\Big[2\Big(\sqrt{c-i d}\;e^{i(e+f x)}+\sqrt{1+e^{2 i(e+f x)}}\sqrt{c-\frac{i d\left(-1+e^{2 i(e+f x)}\right)}{1+e^{2 i(e+f x)}}}\Big)\Big]$$

$$\text{Sec}[e+f x]^{3/2}\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^{3/2}\bigg)\Big/$$

$$\left(2\sqrt{2}\left(c-i d\right)^{5/2}\sqrt{\frac{e^{i(e+f x)}}{1+e^{2 i(e+f x)}}}\sqrt{1+e^{2 i(e+f x)}}\;f\left(a+i\,a\,\text{Tan}[e+f x]\right)^{3/2}\right)\Bigg)\Bigg)+$$

$$\frac{1}{f\left(a+i\,a\,\text{Tan}[e+f x]\right)^{3/2}}\,\text{Sec}[e+f x]^2\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^2$$

$$\sqrt{\text{Sec}[e+f x]\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)}\;\Bigg(\frac{i\left(5 c+21 i d\right)\text{Cos}[2 f x]}{12\left(c+i d\right)^4}+$$

$$\Big(\Big(i c^4\,\text{Cos}[e]-3 c^3 d\,\text{Cos}[e]+9 i c^2 d^2\,\text{Cos}[e]+29 c d^3\,\text{Cos}[e]-10 i d^4\,\text{Cos}[e]+i c^3 d\,\text{Sin}[e]-$$

$$3 c^2 d^2\,\text{Sin}[e]+9 i c d^3\,\text{Sin}[e]+3 d^4\,\text{Sin}[e]\Big)\left(\frac{1}{3}\text{Cos}[2 e]+\frac{1}{3}i\,\text{Sin}[2 e]\right)\Big)\Big/$$

$$\left(\left(c-i d\right)^2\left(c+i d\right)^4\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\right)+\frac{\text{Cos}[4 f x]\left(\frac{1}{12}i\,\text{Cos}[2 e]+\frac{1}{12}\text{Sin}[2 e]\right)}{\left(c+i d\right)^3}+$$

$$\frac{\left(5 c+21 i d\right)\text{Sin}[2 f x]}{12\left(c+i d\right)^4}+\frac{\left(\frac{1}{12}\text{Cos}[2 e]-\frac{1}{12}i\,\text{Sin}[2 e]\right)\text{Sin}[4 f x]}{\left(c+i d\right)^3}+$$

$$\frac{\frac{2}{3}d^5\,\text{Cos}[2 e]+\frac{2}{3}i\,d^5\,\text{Sin}[2 e]}{\left(c-i d\right)^2\left(c+i d\right)^4\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2}-\Big(2\Big(\frac{13}{2}i\,c\,d^4\,\text{Cos}[2 e-f x]+$$

$$\frac{5}{2}d^5\,\text{Cos}[2 e-f x]-\frac{13}{2}i\,c\,d^4\,\text{Cos}[2 e+f x]-\frac{5}{2}d^5\,\text{Cos}[2 e+f x]-\frac{13}{2}c\,d^4\,\text{Sin}[2 e-f x]+$$

$$\frac{5}{2}i\,d^5\,\text{Sin}[2 e-f x]+\frac{13}{2}c\,d^4\,\text{Sin}[2 e+f x]-\frac{5}{2}i\,d^5\,\text{Sin}[2 e+f x]\Big)\Big)\Big/$$

$$\left(3\left(c-i d\right)^2\left(c+i d\right)^4\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\right)\Bigg)$$

Problem 1172: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+i\,a\,\text{Tan}[e+f x]\right)^{5/2}\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 444 leaves, 8 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{a}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}\right]}{4\,\sqrt{2}\,a^{5/2}\,(c-i\,d)^{5/2}\,f}-\frac{1}{5\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$
$$\frac{5\,i\,c-21\,d}{30\,a\,(c+i\,d)^2\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$
$$\frac{5\,c^2+30\,i\,c\,d-89\,d^2}{20\,a^2\,(i\,c-d)^3\,f\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$
$$\frac{d\,(15\,c^3+85\,i\,c^2\,d-221\,c\,d^2+361\,i\,d^3)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{60\,a^3\,(c-i\,d)\,(c+i\,d)^4\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+$$
$$\left(d\,(15\,c^4+80\,i\,c^3\,d-182\,c^2\,d^2+1224\,i\,c\,d^3+707\,d^4)\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\right)\Big/$$
$$\left(60\,a^3\,(c-i\,d)^2\,(c+i\,d)^5\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)$$

Result (type 3, 928 leaves) :

$$-\left(\left(\left(i\, e^{3 i e}\sqrt{e^{i f x}}\, \text{Log}\left[2\left(\sqrt{c-i d}\, e^{i (e+f x)}+\sqrt{1+e^{2 i (e+f x)}}\sqrt{c-\frac{i d \left(-1+e^{2 i (e+f x)}\right)}{1+e^{2 i (e+f x)}}}\right)\right]\right.\right.\right.$$

$$\left.\text{Sec}[e+f x]^{5/2}\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^{5/2}\right)\Big/$$

$$\left.\left(4\sqrt{2}\,(c-i d)^{5/2}\sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}}\sqrt{1+e^{2 i (e+f x)}}\, f\left(a+i\, a\,\text{Tan}[e+f x]\right)^{5/2}\right)\right)+$$

$$\frac{1}{f\left(a+i\, a\,\text{Tan}[e+f x]\right)^{5/2}}\text{Sec}[e+f x]^3\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^3$$

$$\sqrt{\text{Sec}[e+f x]\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)}$$

$$\left(\frac{\left(17 c^2+102 i c d-231 d^2\right)\text{Cos}[2 f x]\left(\frac{1}{60} i\,\text{Cos}[e]-\frac{\text{Sin}[e]}{60}\right)}{(c+i d)^5}+\right.$$

$$\frac{(c+3 i d)\,\text{Cos}[4 f x]\left(\frac{7}{60} i\,\text{Cos}[e]+\frac{7\,\text{Sin}[e]}{60}\right)}{(c+i d)^4}+$$

$$\left(\left(23 i c^5\,\text{Cos}[e]-108 c^4 d\,\text{Cos}[e]-138 i c^3 d^2\,\text{Cos}[e]-692 c^2 d^3\,\text{Cos}[e]+1623 i c d^4\,\text{Cos}[e]+\right.\right.$$

$$640 d^5\,\text{Cos}[e]+23 i c^4 d\,\text{Sin}[e]-108 c^3 d^2\,\text{Sin}[e]-138 i c^2 d^3\,\text{Sin}[e]-$$

$$\left.\left.692 c d^4\,\text{Sin}[e]+343 i d^5\,\text{Sin}[e]\right)\left(\frac{1}{120}\text{Cos}[3 e]+\frac{1}{120} i\,\text{Sin}[3 e]\right)\right)\Big/$$

$$\left((c-i d)^2 (c+i d)^5\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\right)+\frac{\text{Cos}[6 f x]\left(\frac{1}{40} i\,\text{Cos}[3 e]+\frac{1}{40}\text{Sin}[3 e]\right)}{(c+i d)^3}+$$

$$\frac{\left(17 c^2+102 i c d-231 d^2\right)\left(\frac{\text{Cos}[e]}{60}+\frac{1}{60} i\,\text{Sin}[e]\right)\text{Sin}[2 f x]}{(c+i d)^5}+$$

$$\frac{(c+3 i d)\left(\frac{7\,\text{Cos}[e]}{60}-\frac{7}{60} i\,\text{Sin}[e]\right)\text{Sin}[4 f x]}{(c+i d)^4}+\frac{\left(\frac{1}{40}\text{Cos}[3 e]-\frac{1}{40} i\,\text{Sin}[3 e]\right)\text{Sin}[6 f x]}{(c+i d)^3}+$$

$$\frac{\frac{2}{3} i d^6\,\text{Cos}[3 e]-\frac{2}{3} d^6\,\text{Sin}[3 e]}{(c-i d)^2 (c+i d)^5\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2}+$$

$$\left(16\left(c d^5\,\text{Cos}[3 e-f x]-\frac{1}{2} i d^6\,\text{Cos}[3 e-f x]-c d^5\,\text{Cos}[3 e+f x]+\frac{1}{2} i d^6\,\text{Cos}[3 e+f x]+\right.\right.$$

$$\left.\left.i c d^5\,\text{Sin}[3 e-f x]+\frac{1}{2} d^6\,\text{Sin}[3 e-f x]-i c d^5\,\text{Sin}[3 e+f x]-\frac{1}{2} d^6\,\text{Sin}[3 e+f x]\right)\right)\Big/$$

$$\left.\left(3 (c-i d)^2 (c+i d)^5\left(c\,\text{Cos}[e]+d\,\text{Sin}[e]\right)\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\right)\right)$$

Problem 1173: Unable to integrate problem.

$$\int (a + i\, a \,\text{Tan}[e + f x])^m \,(c + d \,\text{Tan}[e + f x])^n \, dx$$

Optimal (type 6, 114 leaves, 3 steps):

$$-\frac{1}{2 f m} i \,\text{AppellF1}\left[m, -n, 1, 1 + m, -\frac{d\,(1 + i \,\text{Tan}[e + f x])}{i\, c - d}, \frac{1}{2}\,(1 + i \,\text{Tan}[e + f x])\right] (a + i\, a \,\text{Tan}[e + f x])^m \,(c + d \,\text{Tan}[e + f x])^n \left(\frac{c + d \,\text{Tan}[e + f x]}{c + i\, d}\right)^{-n}$$

Result (type 8, 30 leaves):

$$\int (a + i\, a \,\text{Tan}[e + f x])^m \,(c + d \,\text{Tan}[e + f x])^n \, dx$$

Problem 1174: Unable to integrate problem.

$$\int (a + i\, a \,\text{Tan}[e + f x])^3 \,(c + d \,\text{Tan}[e + f x])^n \, dx$$

Optimal (type 5, 157 leaves, 4 steps):

$$\frac{a^3\,(i\, c - d\,(5 + 2 n))\,(c + d \,\text{Tan}[e + f x])^{1+n}}{d^2 f\,(1 + n)\,(2 + n)} + \left(4 a^3 \,\text{Hypergeometric2F1}\left[1, 1 + n, 2 + n, \frac{c + d \,\text{Tan}[e + f x]}{c - i\, d}\right] (c + d \,\text{Tan}[e + f x])^{1+n}\right) \Big/ \left((i\, c + d)\, f\,(1 + n)\right) - \frac{(a^3 + i\, a^3 \,\text{Tan}[e + f x])\,(c + d \,\text{Tan}[e + f x])^{1+n}}{d f\,(2 + n)}$$

Result (type 8, 30 leaves):

$$\int (a + i\, a \,\text{Tan}[e + f x])^3 \,(c + d \,\text{Tan}[e + f x])^n \, dx$$

Problem 1175: Unable to integrate problem.

$$\int (a + i\, a \,\text{Tan}[e + f x])^2 \,(c + d \,\text{Tan}[e + f x])^n \, dx$$

Optimal (type 5, 95 leaves, 3 steps):

$$-\frac{a^2\,(c + d \,\text{Tan}[e + f x])^{1+n}}{d f\,(1 + n)} + \left(2 a^2 \,\text{Hypergeometric2F1}\left[1, 1 + n, 2 + n, \frac{c + d \,\text{Tan}[e + f x]}{c - i\, d}\right] (c + d \,\text{Tan}[e + f x])^{1+n}\right) \Big/ \left((i\, c + d)\, f\,(1 + n)\right)$$

Result (type 8, 30 leaves):

$$\int (a + i a \operatorname{Tan}[e + f x])^2 (c + d \operatorname{Tan}[e + f x])^n \, dx$$

Problem 1176: Unable to integrate problem.

$$\int (a + i a \operatorname{Tan}[e + f x]) (c + d \operatorname{Tan}[e + f x])^n \, dx$$

Optimal (type 5, 61 leaves, 2 steps):

$$\left(a \operatorname{Hypergeometric2F1}\left[1, 1 + n, 2 + n, \frac{c + d \operatorname{Tan}[e + f x]}{c - i d}\right] (c + d \operatorname{Tan}[e + f x])^{1+n}\right) \Big/ \left((i c + d) f (1 + n)\right)$$

Result (type 8, 28 leaves):

$$\int (a + i a \operatorname{Tan}[e + f x]) (c + d \operatorname{Tan}[e + f x])^n \, dx$$

Problem 1177: Unable to integrate problem.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^n}{a + i a \operatorname{Tan}[e + f x]} \, dx$$

Optimal (type 5, 193 leaves, 6 steps):

$$\frac{\operatorname{Hypergeometric2F1}\left[1, 1 + n, 2 + n, \frac{c+d \operatorname{Tan}[e+f x]}{c-i d}\right] (c + d \operatorname{Tan}[e + f x])^{1+n}}{4 a (i c + d) f (1 + n)} +$$
$$\left((i c - d + 2 d n) \operatorname{Hypergeometric2F1}\left[1, 1 + n, 2 + n, \frac{c + d \operatorname{Tan}[e + f x]}{c + i d}\right] (c + d \operatorname{Tan}[e + f x])^{1+n}\right) \Big/$$
$$\left(4 a (c + i d)^2 f (1 + n)\right) - \frac{(c + d \operatorname{Tan}[e + f x])^{1+n}}{2 (i c - d) f (a + i a \operatorname{Tan}[e + f x])}$$

Result (type 8, 30 leaves):

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^n}{a + i a \operatorname{Tan}[e + f x]} \, dx$$

Problem 1178: Unable to integrate problem.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^n}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 5, 273 leaves, 7 steps):

$$\frac{\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{c+d\,\text{Tan}[e+f\,x]}{c-i\,d}\right]\,(c+d\,\text{Tan}[e+f\,x])^{1+n}}{8\,a^2\,(i\,c+d)\,f\,(1+n)}+$$
$$\left(\left(c^2+2\,i\,c\,d\,(1-n)-d^2\,\left(1-4\,n+2\,n^2\right)\right)\,\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{c+d\,\text{Tan}[e+f\,x]}{c+i\,d}\right]\right.$$
$$\left.(c+d\,\text{Tan}[e+f\,x])^{1+n}\right)\bigg/\left(8\,a^2\,(i\,c-d)^3\,f\,(1+n)\right)+$$
$$\frac{(i\,c-d\,(2-n))\,(c+d\,\text{Tan}[e+f\,x])^{1+n}}{4\,a^2\,(c+i\,d)^2\,f\,(1+i\,\text{Tan}[e+f\,x])}-\frac{(c+d\,\text{Tan}[e+f\,x])^{1+n}}{4\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2}$$

Result (type 8, 30 leaves):

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^2}\,dx$$

Problem 1179: Unable to integrate problem.

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 5, 381 leaves, 8 steps):

$$\frac{\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{c+d\,\text{Tan}[e+f\,x]}{c-i\,d}\right]\,(c+d\,\text{Tan}[e+f\,x])^{1+n}}{16\,a^3\,(i\,c+d)\,f\,(1+n)}+$$
$$\left(\left(3\,i\,c^3-c^2\,d\,(9-6\,n)-3\,i\,c\,d^2\,\left(3-6\,n+2\,n^2\right)+d^3\,\left(3-20\,n+18\,n^2-4\,n^3\right)\right)\right.$$
$$\left.\text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{c+d\,\text{Tan}[e+f\,x]}{c+i\,d}\right]\,(c+d\,\text{Tan}[e+f\,x])^{1+n}\right)\bigg/$$
$$\left(48\,a^3\,(c+i\,d)^4\,f\,(1+n)\right)-\frac{(c+d\,\text{Tan}[e+f\,x])^{1+n}}{6\,(i\,c-d)\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^3}+$$
$$\frac{(3\,i\,c-d\,(7-2\,n))\,(c+d\,\text{Tan}[e+f\,x])^{1+n}}{24\,a\,(c+i\,d)^2\,f\,(a+i\,a\,\text{Tan}[e+f\,x])^2}+$$
$$\frac{\left(3\,i\,c^2-3\,c\,d\,(3-n)-i\,d^2\,\left(10-9\,n+2\,n^2\right)\right)\,(c+d\,\text{Tan}[e+f\,x])^{1+n}}{24\,(c+i\,d)^3\,f\,\left(a^3+i\,a^3\,\text{Tan}[e+f\,x]\right)}$$

Result (type 8, 30 leaves):

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Problem 1180: Result more than twice size of optimal antiderivative.

$$\int(a+i\,a\,\text{Tan}[e+f\,x])^m\,(c+d\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 5, 192 leaves, 5 steps):

$$-\frac{2\,d\,\left(d^2+\mathrm{i}\,c\,d\,m-c^2\,(3+m)\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m}{f\,m\,(2+m)}+\frac{1}{2\,f\,m}$$
$$(\mathrm{i}\,c+d)^3\,\mathrm{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,(1+\mathrm{i}\,\mathrm{Tan}[e+f\,x])\right]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m-$$
$$\frac{d^2\,(d\,m+\mathrm{i}\,c\,(4+m))\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{1+m}}{a\,f\,(1+m)\,(2+m)}+\frac{d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m\,(c+d\,\mathrm{Tan}[e+f\,x])^2}{f\,(2+m)}$$

Result (type 5, 834 leaves):

$$\frac{1}{f}\,2^{-1+m}\,e^{-2\,\mathrm{i}\,f\,m\,x}\,\left(e^{\mathrm{i}\,f\,x}\right)^m\,\left(\frac{e^{\mathrm{i}\,(e+f\,x)}}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}\right)^m$$
$$\left(\frac{1}{m}(\mathrm{i}\,c-d)^3\,e^{2\,\mathrm{i}\,f\,m\,x}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^m\,\mathrm{Hypergeometric2F1}\left[m,\,3+m,\,1+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]-\right.$$
$$\frac{1}{\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^2\,(1+m)\,(2+m)\,(3+m)}$$
$$e^{2\,\mathrm{i}\,e}\,\Big(3\,\mathrm{i}\,c^3\,e^{2\,\mathrm{i}\,(e+f\,(2+m)\,x)}\,(1+m)\,(3+m)+3\,c^2\,d\,e^{2\,\mathrm{i}\,(e+f\,(2+m)\,x)}\,(1+m)\,(3+m)+$$
$$3\,\mathrm{i}\,c\,d^2\,e^{2\,\mathrm{i}\,(e+f\,(2+m)\,x)}\,(1+m)\,(3+m)+3\,d^3\,e^{2\,\mathrm{i}\,(e+f\,(2+m)\,x)}\,(1+m)\,(3+m)+3\,\mathrm{i}\,c^3\,e^{2\,\mathrm{i}\,f\,(1+m)\,x}$$
$$\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(2+m)\,(3+m)\,\mathrm{Hypergeometric2F1}\left[1+m,\,3+m,\,2+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]-$$
$$3\,c^2\,d\,e^{2\,\mathrm{i}\,f\,(1+m)\,x}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(2+m)\,(3+m)\,\mathrm{Hypergeometric2F1}\Big[1+m,$$
$$3+m,\,2+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\Big]+3\,\mathrm{i}\,c\,d^2\,e^{2\,\mathrm{i}\,f\,(1+m)\,x}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(2+m)\,(3+m)$$
$$\mathrm{Hypergeometric2F1}\left[1+m,\,3+m,\,2+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]-3\,d^3\,e^{2\,\mathrm{i}\,f\,(1+m)\,x}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}$$
$$(2+m)\,(3+m)\,\mathrm{Hypergeometric2F1}\left[1+m,\,3+m,\,2+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]+\mathrm{i}\,c^3\,e^{2\,\mathrm{i}\,(2\,e+f\,(3+m)\,x)}$$
$$\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(1+m)\,(2+m)\,\mathrm{Hypergeometric2F1}\left[3+m,\,3+m,\,4+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]+$$
$$3\,c^2\,d\,e^{2\,\mathrm{i}\,(2\,e+f\,(3+m)\,x)}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(1+m)\,(2+m)\,\mathrm{Hypergeometric2F1}\Big[3+m,$$
$$3+m,\,4+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\Big]-3\,\mathrm{i}\,c\,d^2\,e^{2\,\mathrm{i}\,(2\,e+f\,(3+m)\,x)}\,\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(1+m)$$
$$(2+m)\,\mathrm{Hypergeometric2F1}\left[3+m,\,3+m,\,4+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]-d^3\,e^{2\,\mathrm{i}\,(2\,e+f\,(3+m)\,x)}$$
$$\left.\left(1+e^{2\,\mathrm{i}\,(e+f\,x)}\right)^{2+m}\,(1+m)\,(2+m)\,\mathrm{Hypergeometric2F1}\left[3+m,\,3+m,\,4+m,\,-e^{2\,\mathrm{i}\,(e+f\,x)}\right]\Big)\right)$$
$$\mathrm{Sec}[e+f\,x]^{-m}\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^{-m}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m$$

Problem 1181: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m\,(c+d\,\mathrm{Tan}[e+f\,x])^2\,dx$$

Optimal (type 5, 119 leaves, 4 steps):

$$\frac{2\,c\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m}{f\,m}-\frac{1}{2\,f\,m}$$
$$\mathrm{i}\,(c-\mathrm{i}\,d)^2\,\mathrm{Hypergeometric2F1}\left[1,\,m,\,1+m,\,\frac{1}{2}\,(1+\mathrm{i}\,\mathrm{Tan}[e+f\,x])\right]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^m-$$
$$\frac{\mathrm{i}\,d^2\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{1+m}}{a\,f\,(1+m)}$$

Result (type 5, 422 leaves):

$$\frac{1}{f} 2^{-1+m} e^{-2 i f m x} \left(e^{i f x}\right)^m \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^m \left(-\frac{1}{m} i (c+i d)^2 e^{2 i f m x} \left(1+e^{2 i (e+f x)}\right)^m \text{Hypergeometric2F1}\left[m, 2+m, 1+m, -e^{2 i (e+f x)}\right] - \frac{1}{\left(1+e^{2 i (e+f x)}\right) (1+m) (2+m)} i e^{2 i e} \left(2 c^2 e^{2 i f (1+m) x} (2+m) + 2 d^2 e^{2 i f (1+m) x} (2+m) + c^2 e^{2 i (e+f (2+m) x)} \left(1+e^{2 i (e+f x)}\right)^{1+m} (1+m) \text{Hypergeometric2F1}\left[2+m, 2+m, 3+m, -e^{2 i (e+f x)}\right] - 2 i c d e^{2 i (e+f (2+m) x)} \left(1+e^{2 i (e+f x)}\right)^{1+m} (1+m) \text{Hypergeometric2F1}\left[2+m, 2+m, 3+m, -e^{2 i (e+f x)}\right] - d^2 e^{2 i (e+f (2+m) x)} \left(1+e^{2 i (e+f x)}\right)^{1+m} (1+m) \text{Hypergeometric2F1}\left[2+m, 2+m, 3+m, -e^{2 i (e+f x)}\right]\right)\right) \text{Sec}[e+f x]^{-m} (\text{Cos}[f x] + i \text{Sin}[f x])^{-m} (a + i a \text{Tan}[e+f x])^m$$

Problem 1182: Result more than twice size of optimal antiderivative.

$$\int (a + i a \text{Tan}[e+f x])^m (c + d \text{Tan}[e+f x]) \, dx$$

Optimal (type 5, 78 leaves, 3 steps):

$$\frac{d (a + i a \text{Tan}[e+f x])^m}{f m} - \frac{1}{2 f m} (i c + d) \text{Hypergeometric2F1}\left[1, m, 1+m, \frac{1}{2} (1 + i \text{Tan}[e+f x])\right] (a + i a \text{Tan}[e+f x])^m$$

Result (type 5, 171 leaves):

$$\frac{1}{f m (1+m)} 2^{-1+m} \left(e^{i f x}\right)^m \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^m \left((-i c + d) (1+m) - i (c - i d) e^{2 i (e+f x)} \left(1+e^{2 i (e+f x)}\right)^m m \text{Hypergeometric2F1}\left[1+m, 1+m, 2+m, -e^{2 i (e+f x)}\right]\right) \text{Sec}[e+f x]^{-m} (\text{Cos}[f x] + i \text{Sin}[f x])^{-m} (a + i a \text{Tan}[e+f x])^m$$

Problem 1183: Unable to integrate problem.

$$\int \frac{(a + i a \text{Tan}[e+f x])^m}{c + d \text{Tan}[e+f x]} \, dx$$

Optimal (type 5, 122 leaves, 5 steps):

$$\frac{1}{2 (i c + d) f m} \text{Hypergeometric2F1}\left[1, m, 1+m, \frac{1}{2} (1 + i \text{Tan}[e+f x])\right] (a + i a \text{Tan}[e+f x])^m - \frac{1}{(c^2 + d^2) f m} d \, \text{Hypergeometric2F1}\left[1, m, 1+m, -\frac{d (1 + i \text{Tan}[e+f x])}{i c - d}\right] (a + i a \text{Tan}[e+f x])^m$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \text{Tan}[e+f x])^m}{c + d \text{Tan}[e+f x]} \, dx$$

Problem 1184: Unable to integrate problem.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 5, 180 leaves, 6 steps):

$$-\frac{1}{2 (c - i d)^2 f m} i \, \text{Hypergeometric2F1}\left[1, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m - \frac{1}{(c^2 + d^2)^2 f m} d (c (2 - m) + i d m) \, \text{Hypergeometric2F1}\left[1, m, 1 + m, -\frac{d (1 + i \operatorname{Tan}[e + f x])}{i c - d}\right] (a + i a \operatorname{Tan}[e + f x])^m - \frac{d (a + i a \operatorname{Tan}[e + f x])^m}{(c^2 + d^2) f (c + d \operatorname{Tan}[e + f x])}$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^2} \, dx$$

Problem 1185: Unable to integrate problem.

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 5, 264 leaves, 7 steps):

$$-\frac{1}{2 (i c + d)^3 f m} \text{Hypergeometric2F1}\left[1, m, 1 + m, \frac{1}{2} (1 + i \operatorname{Tan}[e + f x])\right] (a + i a \operatorname{Tan}[e + f x])^m - \frac{1}{2 (c^2 + d^2)^3 f m} d \left(2 i c d (3 - m) m + c^2 (6 - 5 m + m^2) - d^2 (2 - m + m^2)\right) \text{Hypergeometric2F1}\left[1, m, 1 + m, -\frac{d (1 + i \operatorname{Tan}[e + f x])}{i c - d}\right] (a + i a \operatorname{Tan}[e + f x])^m - \frac{d (a + i a \operatorname{Tan}[e + f x])^m}{2 (c^2 + d^2) f (c + d \operatorname{Tan}[e + f x])^2} - \frac{d (c (4 - m) + i d m) (a + i a \operatorname{Tan}[e + f x])^m}{2 (c^2 + d^2)^2 f (c + d \operatorname{Tan}[e + f x])}$$

Result (type 8, 30 leaves):

$$\int \frac{(a + i a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^3} \, dx$$

Problem 1186: Unable to integrate problem.

$$\int (a + i a \operatorname{Tan}[e + f x])^m (c + d \operatorname{Tan}[e + f x])^{3/2} \, dx$$

Optimal (type 6, 123 leaves, 3 steps):

$$-\left(\left((\mathrm{i}\, c-d)\, \text{AppellF1}\left[m,-\frac{3}{2},1,1+m,-\frac{d\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])}{\mathrm{i}\, c-d},\frac{1}{2}\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])\right]\right.\right.$$
$$\left.\left.(a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,f\,m\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{c+\mathrm{i}\, d}}\right)\right)$$

Result (type 8, 32 leaves):

$$\int (a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Problem 1187: Unable to integrate problem.

$$\int (a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 6, 116 leaves, 3 steps):

$$-\left(\left(\mathrm{i}\,\text{AppellF1}\left[m,-\frac{1}{2},1,1+m,-\frac{d\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])}{\mathrm{i}\, c-d},\frac{1}{2}\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])\right]\right.\right.$$
$$\left.\left.(a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,f\,m\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{c+\mathrm{i}\, d}}\right)\right)$$

Result (type 8, 32 leaves):

$$\int (a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Problem 1188: Unable to integrate problem.

$$\int \frac{(a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}\,dx$$

Optimal (type 6, 116 leaves, 3 steps):

$$-\left(\left(\mathrm{i}\,\text{AppellF1}\left[m,\frac{1}{2},1,1+m,-\frac{d\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])}{\mathrm{i}\, c-d},\frac{1}{2}\,(1+\mathrm{i}\,\text{Tan}[e+f\,x])\right]\right.\right.$$
$$\left.\left.(a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{c+\mathrm{i}\, d}}\right)\Big/\left(2\,f\,m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\right)$$

Result (type 8, 32 leaves):

$$\int \frac{(a+\mathrm{i}\, a\,\text{Tan}[e+f\,x])^m}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}\,dx$$

Problem 1189: Unable to integrate problem.

$$\int \frac{(a + i\, a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^{3/2}} \, dx$$

Optimal (type 6, 125 leaves, 3 steps):

$$\left(\text{AppellF1}\left[m, \frac{3}{2}, 1, 1 + m, -\frac{d\,(1 + i \operatorname{Tan}[e + f x])}{i\, c - d}, \frac{1}{2}\,(1 + i \operatorname{Tan}[e + f x])\right] (a + i\, a \operatorname{Tan}[e + f x])^m \sqrt{\frac{c + d \operatorname{Tan}[e + f x]}{c + i\, d}}\right) \Big/ \left(2\,(i\, c - d)\, f\, m \sqrt{c + d \operatorname{Tan}[e + f x]}\right)$$

Result (type 8, 32 leaves):

$$\int \frac{(a + i\, a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^{3/2}} \, dx$$

Problem 1190: Unable to integrate problem.

$$\int \frac{(a + i\, a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^{5/2}} \, dx$$

Optimal (type 6, 125 leaves, 3 steps):

$$-\left(\left(i\, \text{AppellF1}\left[m, \frac{5}{2}, 1, 1 + m, -\frac{d\,(1 + i \operatorname{Tan}[e + f x])}{i\, c - d}, \frac{1}{2}\,(1 + i \operatorname{Tan}[e + f x])\right] (a + i\, a \operatorname{Tan}[e + f x])^m \sqrt{\frac{c + d \operatorname{Tan}[e + f x]}{c + i\, d}}\right) \Big/ \left(2\,(c + i\, d)^2 f\, m \sqrt{c + d \operatorname{Tan}[e + f x]}\right)\right)$$

Result (type 8, 32 leaves):

$$\int \frac{(a + i\, a \operatorname{Tan}[e + f x])^m}{(c + d \operatorname{Tan}[e + f x])^{5/2}} \, dx$$

Problem 1195: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{c + d \operatorname{Tan}[e + f x]}{(a + b \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 111 leaves, 3 steps):

$$\frac{\left(a^2 c - b^2 c + 2 a b d\right) x}{\left(a^2 + b^2\right)^2} + \frac{\left(2 a b c - a^2 d + b^2 d\right) \text{Log}[a \text{Cos}[e + f x] + b \text{Sin}[e + f x]]}{\left(a^2 + b^2\right)^2 f} - \frac{b c - a d}{\left(a^2 + b^2\right) f \left(a + b \text{Tan}[e + f x]\right)}$$

Result (type 3, 257 leaves):

$$\frac{1}{2 a \left(a^2 + b^2\right)^2 f \left(a + b \text{Tan}[e + f x]\right)} \left(a^2 \left(2 (a + i b)^2 (c - i d) (e + f x) + \left(2 a b c - a^2 d + b^2 d\right) \text{Log}\left[(a \text{Cos}[e + f x] + b \text{Sin}[e + f x])^2\right]\right) + b \left(2 (a + i b) \left(-i b^2 c + a^2 (c (e + f x) - i d (-i + e + f x)) + a b (c (1 + i e + i f x) + d (i + e + f x))\right) + a \left(2 a b c - a^2 d + b^2 d\right) \text{Log}\left[(a \text{Cos}[e + f x] + b \text{Sin}[e + f x])^2\right]\right) \text{Tan}[e + f x] + 2 i a \left(-2 a b c + a^2 d - b^2 d\right) \text{ArcTan}[\text{Tan}[e + f x]] (a + b \text{Tan}[e + f x])\right)$$

Problem 1196: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{c + d \text{Tan}[e + f x]}{(a + b \text{Tan}[e + f x])^3} \, dx$$

Optimal (type 3, 175 leaves, 4 steps):

$$\frac{\left(a^3 c - 3 a b^2 c + 3 a^2 b d - b^3 d\right) x}{\left(a^2 + b^2\right)^3} + \frac{\left(3 a^2 b c - b^3 c - a^3 d + 3 a b^2 d\right) \text{Log}[a \text{Cos}[e + f x] + b \text{Sin}[e + f x]]}{\left(a^2 + b^2\right)^3 f} - \frac{b c - a d}{2 \left(a^2 + b^2\right) f (a + b \text{Tan}[e + f x])^2} - \frac{2 a b c - a^2 d + b^2 d}{\left(a^2 + b^2\right)^2 f (a + b \text{Tan}[e + f x])}$$

Result (type 3, 854 leaves):

$$\left(b^2 \left(-b c + a d\right) \operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right) \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(2 \left(a - i b\right)^2 \left(a + i b\right)^2 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right) +$$
$$\left(\left(a^3 c - 3 a b^2 c + 3 a^2 b d - b^3 d\right) \left(e + f x\right) \operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^3 \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(\left(a - i b\right)^3 \left(a + i b\right)^3 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right) +$$
$$\left(\left(3 i a^9 b c + 3 a^8 b^2 c + 5 i a^7 b^3 c + 5 a^6 b^4 c + i a^5 b^5 c + a^4 b^6 c - i a^3 b^7 c - a^2 b^8 c - i a^{10} d - a^9 b d + i a^8 b^2 d + a^7 b^3 d + 5 i a^6 b^4 d + 5 a^5 b^5 d + 3 i a^4 b^6 d + 3 a^3 b^7 d\right) \left(e + f x\right) \operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^3 \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(a^2 \left(a - i b\right)^6 \left(a + i b\right)^5 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right) -$$
$$\left(i \left(3 a^2 b c - b^3 c - a^3 d + 3 a b^2 d\right) \operatorname{ArcTan}[\operatorname{Tan}[e+f x]] \operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^3 \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(\left(a^2 + b^2\right)^3 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right) +$$
$$\left(\left(3 a^2 b c - b^3 c - a^3 d + 3 a b^2 d\right) \operatorname{Log}\left[\left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^2\right] \operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^3 \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(2 \left(a^2 + b^2\right)^3 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right) +$$
$$\left(\operatorname{Sec}[e+f x]^2 \left(a \operatorname{Cos}[e+f x] + b \operatorname{Sin}[e+f x]\right)^2 \left(3 a b^2 c \operatorname{Sin}[e+f x] - 2 a^2 b d \operatorname{Sin}[e+f x] + b^3 d \operatorname{Sin}[e+f x]\right) \left(c + d \operatorname{Tan}[e+f x]\right)\right) \Big/ \left(a \left(a - i b\right)^2 \left(a + i b\right)^2 f \left(c \operatorname{Cos}[e+f x] + d \operatorname{Sin}[e+f x]\right) \left(a + b \operatorname{Tan}[e+f x]\right)^3\right)$$

Problem 1197: Result more than twice size of optimal antiderivative.

$$\int \left(a + b \operatorname{Tan}[e+f x]\right)^3 \left(c + d \operatorname{Tan}[e+f x]\right)^2 dx$$

Optimal (type 3, 215 leaves, 5 steps):

$$-\left(6 a^2 b c d - 2 b^3 c d - a^3 \left(c^2 - d^2\right) + 3 a b^2 \left(c^2 - d^2\right)\right) x - \frac{\left(2 a^3 c d - 6 a b^2 c d + 3 a^2 b \left(c^2 - d^2\right) - b^3 \left(c^2 - d^2\right)\right) \operatorname{Log}[\operatorname{Cos}[e+f x]]}{f} + \frac{2 b \left(b c + a d\right) \left(a c - b d\right) \operatorname{Tan}[e+f x]}{f} + \frac{\left(2 a c d + b \left(c^2 - d^2\right)\right) \left(a + b \operatorname{Tan}[e+f x]\right)^2}{2 f} + \frac{2 c d \left(a + b \operatorname{Tan}[e+f x]\right)^3}{3 f} + \frac{d^2 \left(a + b \operatorname{Tan}[e+f x]\right)^4}{4 b f}$$

Result (type 3, 800 leaves):

$$\left(\left(-3 a^2 b c^2+b^3 c^2-2 a^3 c d+6 a b^2 c d+3 a^2 b d^2-b^3 d^2\right) \text{Cos}[e+f x]^5 \text{Log}[\text{Cos}[e+f x]] (a+b \text{Tan}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right) \Big/ \left(f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)+\left(1\Big/\left(24 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)\right) \text{Cos}[e+f x] \left(6 b^3 c^2+36 a b^2 c d+18 a^2 b d^2-6 b^3 d^2+9 a^3 c^2 (e+f x)-27 a b^2 c^2 (e+f x)-54 a^2 b c d (e+f x)+18 b^3 c d (e+f x)-9 a^3 d^2 (e+f x)+27 a b^2 d^2 (e+f x)+6 b^3 c^2 \text{Cos}[2 (e+f x)]+36 a b^2 c d \text{Cos}[2 (e+f x)]+18 a^2 b d^2 \text{Cos}[2 (e+f x)]-12 b^3 d^2 \text{Cos}[2 (e+f x)]+12 a^3 c^2 (e+f x) \text{Cos}[2 (e+f x)]-36 a b^2 c^2 (e+f x) \text{Cos}[2 (e+f x)]-72 a^2 b c d (e+f x) \text{Cos}[2 (e+f x)]+24 b^3 c d (e+f x) \text{Cos}[2 (e+f x)]-12 a^3 d^2 (e+f x) \text{Cos}[2 (e+f x)]+36 a b^2 d^2 (e+f x) \text{Cos}[2 (e+f x)]+3 a^3 c^2 (e+f x) \text{Cos}[4 (e+f x)]-9 a b^2 c^2 (e+f x) \text{Cos}[4 (e+f x)]-18 a^2 b c d (e+f x) \text{Cos}[4 (e+f x)]+6 b^3 c d (e+f x) \text{Cos}[4 (e+f x)]-3 a^3 d^2 (e+f x) \text{Cos}[4 (e+f x)]+9 a b^2 d^2 (e+f x) \text{Cos}[4 (e+f x)]+18 a b^2 c^2 \text{Sin}[2 (e+f x)]+36 a^2 b c d \text{Sin}[2 (e+f x)]-8 b^3 c d \text{Sin}[2 (e+f x)]+6 a^3 d^2 \text{Sin}[2 (e+f x)]-12 a b^2 d^2 \text{Sin}[2 (e+f x)]+9 a b^2 c^2 \text{Sin}[4 (e+f x)]+18 a^2 b c d \text{Sin}[4 (e+f x)]-8 b^3 c d \text{Sin}[4 (e+f x)]+3 a^3 d^2 \text{Sin}[4 (e+f x)]-12 a b^2 d^2 \text{Sin}[4 (e+f x)]\right) (a+b \text{Tan}[e+f x])^3 (c+d \text{Tan}[e+f x])^2$$

Problem 1201: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d \text{Tan}[e+f x])^2}{(a+b \text{Tan}[e+f x])^2} \, dx$$

Optimal (type 3, 126 leaves, 3 steps):

$$-\frac{(b (c-d)-a (c+d)) (a (c-d)+b (c+d)) x}{\left(a^2+b^2\right)^2}+\frac{2 (b c-a d) (a c+b d) \text{Log}[a \text{Cos}[e+f x]+b \text{Sin}[e+f x]]}{\left(a^2+b^2\right)^2 f}-\frac{(b c-a d)^2}{b \left(a^2+b^2\right) f (a+b \text{Tan}[e+f x])}$$

Result (type 3, 321 leaves):

$$\frac{1}{\left(a^2+b^2\right)^2 f (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^2} (a \text{Cos}[e+f x]+b \text{Sin}[e+f x]) \left(\frac{\left(a^2+b^2\right) (b c-a d)^2 \text{Sin}[e+f x]}{a}+(b (-c+d)+a (c+d)) (a (c-d)+b (c+d)) (e+f x) (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])-2 i \left(a^2 c d-b^2 c d+a b \left(-c^2+d^2\right)\right) (e+f x) (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])+2 i \left(a^2 c d-b^2 c d+a b \left(-c^2+d^2\right)\right) \text{ArcTan}[\text{Tan}[e+f x]] (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])-\left(a^2 c d-b^2 c d+a b \left(-c^2+d^2\right)\right) \text{Log}\left[(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2\right] (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])\right) (c+d \text{Tan}[e+f x])^2$$

Problem 1202: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^2}{(a + b \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 3, 214 leaves, 4 steps):

$$\frac{\left(6 a^2 b c d - 2 b^3 c d + a^3 \left(c^2 - d^2\right) - 3 a b^2 \left(c^2 - d^2\right)\right) x}{\left(a^2 + b^2\right)^3} - \frac{1}{\left(a^2 + b^2\right)^3 f}$$
$$\left(2 a^3 c d - 6 a b^2 c d - 3 a^2 b \left(c^2 - d^2\right) + b^3 \left(c^2 - d^2\right)\right) \operatorname{Log}[a \operatorname{Cos}[e + f x] + b \operatorname{Sin}[e + f x]] -$$
$$\frac{(b c - a d)^2}{2 b \left(a^2 + b^2\right) f (a + b \operatorname{Tan}[e + f x])^2} - \frac{2 (b c - a d) (a c + b d)}{\left(a^2 + b^2\right)^2 f (a + b \operatorname{Tan}[e + f x])}$$

Result (type 3, 1564 leaves):

$$\left(\left(3\,i\,a^9\,b\,c^2+3\,a^8\,b^2\,c^2+5\,i\,a^7\,b^3\,c^2+5\,a^6\,b^4\,c^2+i\,a^5\,b^5\,c^2+a^4\,b^6\,c^2-i\,a^3\,b^7\,c^2-a^2\,b^8\,c^2-2\,i\,a^{10}\,c\,d-2\,a^9\,b\,c\,d+2\,i\,a^8\,b^2\,c\,d+2\,a^7\,b^3\,c\,d+10\,i\,a^6\,b^4\,c\,d+10\,a^5\,b^5\,c\,d+6\,i\,a^4\,b^6\,c\,d+6\,a^3\,b^7\,c\,d-3\,i\,a^9\,b\,d^2-3\,a^8\,b^2\,d^2-5\,i\,a^7\,b^3\,d^2-5\,a^6\,b^4\,d^2-i\,a^5\,b^5\,d^2-a^4\,b^6\,d^2+i\,a^3\,b^7\,d^2+a^2\,b^8\,d^2\right)\,(e+f\,x)\,\text{Sec}[e+f\,x]\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^3\,(c+d\,\text{Tan}[e+f\,x])^2\right)\Big/\left(a^2\,(a-i\,b)^6\,(a+i\,b)^5\,f\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\,(a+b\,\text{Tan}[e+f\,x])^3\right)-$$

$$\left(i\,\left(3\,a^2\,b\,c^2-b^3\,c^2-2\,a^3\,c\,d+6\,a\,b^2\,c\,d-3\,a^2\,b\,d^2+b^3\,d^2\right)\,\text{ArcTan}[\text{Tan}[e+f\,x]]\,\text{Sec}[e+f\,x]\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^3\,(c+d\,\text{Tan}[e+f\,x])^2\right)\Big/\left(\left(a^2+b^2\right)^3\,f\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\,(a+b\,\text{Tan}[e+f\,x])^3\right)+$$

$$\left(\left(3\,a^2\,b\,c^2-b^3\,c^2-2\,a^3\,c\,d+6\,a\,b^2\,c\,d-3\,a^2\,b\,d^2+b^3\,d^2\right)\,\text{Log}\left[(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\right]\,\text{Sec}[e+f\,x]\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^3\,(c+d\,\text{Tan}[e+f\,x])^2\right)\Big/\left(2\,\left(a^2+b^2\right)^3\,f\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\,(a+b\,\text{Tan}[e+f\,x])^3\right)+$$

$$\Big(\text{Sec}[e+f\,x]\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,\big(2\,a^3\,b^3\,c^2+2\,a\,b^5\,c^2-2\,a^4\,b^2\,c\,d+2\,b^6\,c\,d-2\,a^3\,b^3\,d^2-2\,a\,b^5\,d^2+a^6\,c^2\,(e+f\,x)-2\,a^4\,b^2\,c^2\,(e+f\,x)-3\,a^2\,b^4\,c^2\,(e+f\,x)+6\,a^5\,b\,c\,d\,(e+f\,x)+4\,a^3\,b^3\,c\,d\,(e+f\,x)-2\,a\,b^5\,c\,d\,(e+f\,x)-a^6\,d^2\,(e+f\,x)+2\,a^4\,b^2\,d^2\,(e+f\,x)+3\,a^2\,b^4\,d^2\,(e+f\,x)-3\,a^3\,b^3\,c^2\,\text{Cos}[2\,(e+f\,x)]-3\,a\,b^5\,c^2\,\text{Cos}[2\,(e+f\,x)]+4\,a^4\,b^2\,c\,d\,\text{Cos}[2\,(e+f\,x)]+2\,a^2\,b^4\,c\,d\,\text{Cos}[2\,(e+f\,x)]-2\,b^6\,c\,d\,\text{Cos}[2\,(e+f\,x)]-a^5\,b\,d^2\,\text{Cos}[2\,(e+f\,x)]+a^3\,b^3\,d^2\,\text{Cos}[2\,(e+f\,x)]+2\,a\,b^5\,d^2\,\text{Cos}[2\,(e+f\,x)]+a^6\,c^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-4\,a^4\,b^2\,c^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^2\,b^4\,c^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+6\,a^5\,b\,c\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-8\,a^3\,b^3\,c\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+2\,a\,b^5\,c\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-a^6\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+4\,a^4\,b^2\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-3\,a^2\,b^4\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^4\,b^2\,c^2\,\text{Sin}[2\,(e+f\,x)]+3\,a^2\,b^4\,c^2\,\text{Sin}[2\,(e+f\,x)]-4\,a^5\,b\,c\,d\,\text{Sin}[2\,(e+f\,x)]-2\,a^3\,b^3\,c\,d\,\text{Sin}[2\,(e+f\,x)]+2\,a\,b^5\,c\,d\,\text{Sin}[2\,(e+f\,x)]+a^6\,d^2\,\text{Sin}[2\,(e+f\,x)]-a^4\,b^2\,d^2\,\text{Sin}[2\,(e+f\,x)]-2\,a^2\,b^4\,d^2\,\text{Sin}[2\,(e+f\,x)]+2\,a^5\,b\,c^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-6\,a^3\,b^3\,c^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+12\,a^4\,b^2\,c\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-4\,a^2\,b^4\,c\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-2\,a^5\,b\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+6\,a^3\,b^3\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]\big)\,(c+d\,\text{Tan}[e+f\,x])^2\Big)\Big/\left(2\,a\,(a-i\,b)^3\,(a+i\,b)^3\,f\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\,(a+b\,\text{Tan}[e+f\,x])^3\right)$$

Problem 1203: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\text{Tan}[e+f\,x])^3\,(c+d\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 3, 302 leaves, 6 steps):

$$-(a c-b d)\left(8 a b c d-a^2\left(c^2-3 d^2\right)+b^2\left(3 c^2-d^2\right)\right) x+\frac{1}{f}\left(b c+a d\right)\left(8 a b c d+b^2\left(c^2-3 d^2\right)-a^2\left(3 c^2-d^2\right)\right) \text{Log}[\text{Cos}[e+f x]]+\frac{d\left(2 a^3 c d-6 a b^2 c d+3 a^2 b\left(c^2-d^2\right)-b^3\left(c^2-d^2\right)\right) \text{Tan}[e+f x]}{f}+\frac{\left(3 a^2 b c-b^3 c+a^3 d-3 a b^2 d\right)(c+d \text{Tan}[e+f x])^2}{2 f}+\frac{b\left(3 a^2-b^2\right)(c+d \text{Tan}[e+f x])^3}{3 f}-\frac{b^2(b c-11 a d)(c+d \text{Tan}[e+f x])^4}{20 d^2 f}+\frac{b^2(a+b \text{Tan}[e+f x])(c+d \text{Tan}[e+f x])^4}{5 d f}$$

Result (type 3, 1279 leaves):

$$\Big(\left(-3 a^2 b c^3+b^3 c^3-3 a^3 c^2 d+9 a b^2 c^2 d+9 a^2 b c d^2-3 b^3 c d^2+a^3 d^3-3 a b^2 d^3\right) \text{Cos}[e+f x]^6 \text{Log}[\text{Cos}[e+f x]](a+b \text{Tan}[e+f x])^3(c+d \text{Tan}[e+f x])^3\Big) \Big/ \left(f(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3\right)+$$
$$\Big(\text{Cos}[e+f x]\big(90 b^3 c^3 \text{Cos}[e+f x]+810 a b^2 c^2 d \text{Cos}[e+f x]+810 a^2 b c d^2 \text{Cos}[e+f x]-360 b^3 c d^2 \text{Cos}[e+f x]+90 a^3 d^3 \text{Cos}[e+f x]-360 a b^2 d^3 \text{Cos}[e+f x]+150 a^3 c^3(e+f x) \text{Cos}[e+f x]-450 a b^2 c^3(e+f x) \text{Cos}[e+f x]-1350 a^2 b c^2 d(e+f x) \text{Cos}[e+f x]+450 b^3 c^2 d(e+f x) \text{Cos}[e+f x]-450 a^3 c d^2(e+f x) \text{Cos}[e+f x]+1350 a b^2 c d^2(e+f x) \text{Cos}[e+f x]+450 a^2 b d^3(e+f x) \text{Cos}[e+f x]-150 b^3 d^3(e+f x) \text{Cos}[e+f x]+30 b^3 c^3 \text{Cos}[3(e+f x)]+270 a b^2 c^2 d \text{Cos}[3(e+f x)]+270 a^2 b c d^2 \text{Cos}[3(e+f x)]-180 b^3 c d^2 \text{Cos}[3(e+f x)]+30 a^3 d^3 \text{Cos}[3(e+f x)]-180 a b^2 d^3 \text{Cos}[3(e+f x)]+75 a^3 c^3(e+f x) \text{Cos}[3(e+f x)]-225 a b^2 c^3(e+f x) \text{Cos}[3(e+f x)]-675 a^2 b c^2 d(e+f x) \text{Cos}[3(e+f x)]+225 b^3 c^2 d(e+f x) \text{Cos}[3(e+f x)]-225 a^3 c d^2(e+f x) \text{Cos}[3(e+f x)]+675 a b^2 c d^2(e+f x) \text{Cos}[3(e+f x)]+225 a^2 b d^3(e+f x) \text{Cos}[3(e+f x)]-75 b^3 d^3(e+f x) \text{Cos}[3(e+f x)]+15 a^3 c^3(e+f x) \text{Cos}[5(e+f x)]-45 a b^2 c^3(e+f x) \text{Cos}[5(e+f x)]-135 a^2 b c^2 d(e+f x) \text{Cos}[5(e+f x)]+45 b^3 c^2 d(e+f x) \text{Cos}[5(e+f x)]-45 a^3 c d^2(e+f x) \text{Cos}[5(e+f x)]+135 a b^2 c d^2(e+f x) \text{Cos}[5(e+f x)]+45 a^2 b d^3(e+f x) \text{Cos}[5(e+f x)]-15 b^3 d^3(e+f x) \text{Cos}[5(e+f x)]+90 a b^2 c^3 \text{Sin}[e+f x]+270 a^2 b c^2 d \text{Sin}[e+f x]-60 b^3 c^2 d \text{Sin}[e+f x]+90 a^3 c d^2 \text{Sin}[e+f x]-180 a b^2 c d^2 \text{Sin}[e+f x]-60 a^2 b d^3 \text{Sin}[e+f x]+50 b^3 d^3 \text{Sin}[e+f x]+135 a b^2 c^3 \text{Sin}[3(e+f x)]+405 a^2 b c^2 d \text{Sin}[3(e+f x)]-120 b^3 c^2 d \text{Sin}[3(e+f x)]+135 a^3 c d^2 \text{Sin}[3(e+f x)]-360 a b^2 c d^2 \text{Sin}[3(e+f x)]-120 a^2 b d^3 \text{Sin}[3(e+f x)]+25 b^3 d^3 \text{Sin}[3(e+f x)]+45 a b^2 c^3 \text{Sin}[5(e+f x)]+135 a^2 b c^2 d \text{Sin}[5(e+f x)]-60 b^3 c^2 d \text{Sin}[5(e+f x)]+45 a^3 c d^2 \text{Sin}[5(e+f x)]-180 a b^2 c d^2 \text{Sin}[5(e+f x)]-60 a^2 b d^3 \text{Sin}[5(e+f x)]+23 b^3 d^3 \text{Sin}[5(e+f x)]\big)(a+b \text{Tan}[e+f x])^3(c+d \text{Tan}[e+f x])^3\Big) \Big/ \left(240 f(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3\right)$$

Problem 1204: Result more than twice size of optimal antiderivative.

$$\int(a+b \text{Tan}[e+f x])^2(c+d \text{Tan}[e+f x])^3 \, dx$$

Optimal (type 3, 219 leaves, 5 steps):

$$-\left(b^2 c \left(c^2-3 d^2\right)+2 a b d \left(3 c^2-d^2\right)-a^2 \left(c^3-3 c d^2\right)\right) x-\frac{1}{f}$$
$$\left(2 a b c \left(c^2-3 d^2\right)-b^2 d \left(3 c^2-d^2\right)+a^2 \left(3 c^2 d-d^3\right)\right) \text{Log}[\text{Cos}[e+f x]]+$$
$$\frac{2 d (b c+a d) (a c-b d) \text{Tan}[e+f x]}{f}+\frac{\left(2 a b c+a^2 d-b^2 d\right) (c+d \text{Tan}[e+f x])^2}{2 f}+$$
$$\frac{2 a b (c+d \text{Tan}[e+f x])^3}{3 f}+\frac{b^2 (c+d \text{Tan}[e+f x])^4}{4 d f}$$

Result (type 3, 800 leaves):

$$\Big(\left(-2 a b c^3-3 a^2 c^2 d+3 b^2 c^2 d+6 a b c d^2+a^2 d^3-b^2 d^3\right)$$
$$\text{Cos}[e+f x]^5 \text{Log}[\text{Cos}[e+f x]] (a+b \text{Tan}[e+f x])^2 (c+d \text{Tan}[e+f x])^3\Big)\Big/$$
$$\left(f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3\right)+$$
$$\left(1\Big/\left(24 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3\right)\right)$$
$$\text{Cos}[e+f x] \Big(18 b^2 c^2 d+36 a b c d^2+6 a^2 d^3-6 b^2 d^3+9 a^2 c^3 (e+f x)-9 b^2 c^3 (e+f x)-$$
$$54 a b c^2 d (e+f x)-27 a^2 c d^2 (e+f x)+27 b^2 c d^2 (e+f x)+18 a b d^3 (e+f x)+$$
$$18 b^2 c^2 d \text{Cos}[2 (e+f x)]+36 a b c d^2 \text{Cos}[2 (e+f x)]+6 a^2 d^3 \text{Cos}[2 (e+f x)]-$$
$$12 b^2 d^3 \text{Cos}[2 (e+f x)]+12 a^2 c^3 (e+f x) \text{Cos}[2 (e+f x)]-12 b^2 c^3 (e+f x) \text{Cos}[2 (e+f x)]-$$
$$72 a b c^2 d (e+f x) \text{Cos}[2 (e+f x)]-36 a^2 c d^2 (e+f x) \text{Cos}[2 (e+f x)]+$$
$$36 b^2 c d^2 (e+f x) \text{Cos}[2 (e+f x)]+24 a b d^3 (e+f x) \text{Cos}[2 (e+f x)]+$$
$$3 a^2 c^3 (e+f x) \text{Cos}[4 (e+f x)]-3 b^2 c^3 (e+f x) \text{Cos}[4 (e+f x)]-$$
$$18 a b c^2 d (e+f x) \text{Cos}[4 (e+f x)]-9 a^2 c d^2 (e+f x) \text{Cos}[4 (e+f x)]+$$
$$9 b^2 c d^2 (e+f x) \text{Cos}[4 (e+f x)]+6 a b d^3 (e+f x) \text{Cos}[4 (e+f x)]+6 b^2 c^3 \text{Sin}[2 (e+f x)]+$$
$$36 a b c^2 d \text{Sin}[2 (e+f x)]+18 a^2 c d^2 \text{Sin}[2 (e+f x)]-12 b^2 c d^2 \text{Sin}[2 (e+f x)]-$$
$$8 a b d^3 \text{Sin}[2 (e+f x)]+3 b^2 c^3 \text{Sin}[4 (e+f x)]+18 a b c^2 d \text{Sin}[4 (e+f x)]+$$
$$9 a^2 c d^2 \text{Sin}[4 (e+f x)]-12 b^2 c d^2 \text{Sin}[4 (e+f x)]-8 a b d^3 \text{Sin}[4 (e+f x)]\Big)$$
$$(a+b \text{Tan}[e+f x])^2 (c+d \text{Tan}[e+f x])^3$$

Problem 1207: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d \text{Tan}[e+f x])^3}{(a+b \text{Tan}[e+f x])^2} \, dx$$

Optimal (type 3, 230 leaves, 5 steps):

$$-\frac{\left(b^2 c \left(c^2-3 d^2\right)-2 a b d \left(3 c^2-d^2\right)-a^2 \left(c^3-3 c d^2\right)\right) x}{\left(a^2+b^2\right)^2}+\frac{1}{\left(a^2+b^2\right)^2 f}$$
$$\left(2 a b c \left(c^2-3 d^2\right)+b^2 d \left(3 c^2-d^2\right)-a^2 \left(3 c^2 d-d^3\right)\right) \text{Log}[\text{Cos}[e+f x]]+$$
$$\frac{(b c-a d)^2 \left(2 a b c+a^2 d+3 b^2 d\right) \text{Log}[a+b \text{Tan}[e+f x]]}{b^2 \left(a^2+b^2\right)^2 f}-\frac{(b c-a d)^2 (c+d \text{Tan}[e+f x])}{b \left(a^2+b^2\right) f (a+b \text{Tan}[e+f x])}$$

Result (type 3, 1031 leaves):

$$\Big(\big(a^2 c^3-b^2 c^3+6 a b c^2 d-3 a^2 c d^2+3 b^2 c d^2-2 a b d^3\big)$$
$$(e+f x)\,\text{Cos}[e+f x]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big((a-i b)^2\,(a+i b)^2 f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)-$$
$$\Big(i\,\big(-2 a^6 b^4 c^3+2 i a^5 b^5 c^3-2 a^4 b^6 c^3+2 i a^3 b^7 c^3+3 a^7 b^3 c^2 d-3 i a^6 b^4 c^2 d-$$
$$3 a^3 b^7 c^2 d+3 i a^2 b^8 c^2 d+6 a^6 b^4 c d^2-6 i a^5 b^5 c d^2+6 a^4 b^6 c d^2-6 i a^3 b^7 c d^2-$$
$$a^9 b d^3+i a^8 b^2 d^3-4 a^7 b^3 d^3+4 i a^6 b^4 d^3-3 a^5 b^5 d^3+3 i a^4 b^6 d^3\big)$$
$$(e+f x)\,\text{Cos}[e+f x]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big(a^2\,(a-i b)^4\,(a+i b)^3\,b^3 f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)-$$
$$\Big(i\,\big(2 a b^3 c^3-3 a^2 b^2 c^2 d+3 b^4 c^2 d-6 a b^3 c d^2+a^4 d^3+3 a^2 b^2 d^3\big)\,\text{ArcTan}[\text{Tan}[e+f x]]$$
$$\text{Cos}[e+f x]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big(b^2\,(a^2+b^2)^2 f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)-$$
$$\Big(d^3\,\text{Cos}[e+f x]\,\text{Log}[\text{Cos}[e+f x]]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big(b^2 f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)+$$
$$\Big(\big(2 a b^3 c^3-3 a^2 b^2 c^2 d+3 b^4 c^2 d-6 a b^3 c d^2+a^4 d^3+3 a^2 b^2 d^3\big)\,\text{Cos}[e+f x]$$
$$\text{Log}\Big[\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\Big]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)^2\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big(2 b^2\,(a^2+b^2)^2 f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)+$$
$$\Big(\text{Cos}[e+f x]\,\big(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\big)\,\big(b^3 c^3\,\text{Sin}[e+f x]-3 a b^2 c^2 d\,\text{Sin}[e+f x]+$$
$$3 a^2 b c d^2\,\text{Sin}[e+f x]-a^3 d^3\,\text{Sin}[e+f x]\big)\,\big(c+d\,\text{Tan}[e+f x]\big)^3\Big)\Big/$$
$$\Big(a\,(a-i b)\,(a+i b)\,b f\,\big(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\big)^3\,\big(a+b\,\text{Tan}[e+f x]\big)^2\Big)$$

Problem 1208: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Tan}[e+f x])^3}{(a+b\,\text{Tan}[e+f x])^3}\,dx$$

Optimal (type 3, 239 leaves, 4 steps):

$$\frac{(a c+b d)\,\big(8 a b c d+a^2\,(c^2-3 d^2)-b^2\,(3 c^2-d^2)\big)\,x}{(a^2+b^2)^3}+\frac{1}{(a^2+b^2)^3 f}$$
$$(b c-a d)\,\big(8 a b c d-b^2\,(c^2-3 d^2)+a^2\,(3 c^2-d^2)\big)\,\text{Log}[a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]]-$$
$$\frac{(b c-a d)^2\,(4 a b c+a^2 d+5 b^2 d)}{2 b^2\,(a^2+b^2)^2 f\,(a+b\,\text{Tan}[e+f x])}-\frac{(b c-a d)^2\,(c+d\,\text{Tan}[e+f x])}{2 b\,(a^2+b^2)\,f\,(a+b\,\text{Tan}[e+f x])^2}$$

Result (type 3, 2013 leaves):

$$\Big(\big(3\,i\,a^9\,b\,c^3+3\,a^8\,b^2\,c^3+5\,i\,a^7\,b^3\,c^3+5\,a^6\,b^4\,c^3+i\,a^5\,b^5\,c^3+a^4\,b^6\,c^3-i\,a^3\,b^7\,c^3-$$
$$a^2\,b^8\,c^3-3\,i\,a^{10}\,c^2\,d-3\,a^9\,b\,c^2\,d+3\,i\,a^8\,b^2\,c^2\,d+3\,a^7\,b^3\,c^2\,d+15\,i\,a^6\,b^4\,c^2\,d+$$
$$15\,a^5\,b^5\,c^2\,d+9\,i\,a^4\,b^6\,c^2\,d+9\,a^3\,b^7\,c^2\,d-9\,i\,a^9\,b\,c\,d^2-9\,a^8\,b^2\,c\,d^2-15\,i\,a^7\,b^3\,c\,d^2-$$
$$15\,a^6\,b^4\,c\,d^2-3\,i\,a^5\,b^5\,c\,d^2-3\,a^4\,b^6\,c\,d^2+3\,i\,a^3\,b^7\,c\,d^2+3\,a^2\,b^8\,c\,d^2+i\,a^{10}\,d^3+$$
$$a^9\,b\,d^3-i\,a^8\,b^2\,d^3-a^7\,b^3\,d^3-5\,i\,a^6\,b^4\,d^3-5\,a^5\,b^5\,d^3-3\,i\,a^4\,b^6\,d^3-3\,a^3\,b^7\,d^3\big)$$
$$(e+f\,x)\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(a^2\,(a-i\,b)^6\,(a+i\,b)^5\,f\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)-$$
$$\Big(i\,\left(3\,a^2\,b\,c^3-b^3\,c^3-3\,a^3\,c^2\,d+9\,a\,b^2\,c^2\,d-9\,a^2\,b\,c\,d^2+3\,b^3\,c\,d^2+a^3\,d^3-3\,a\,b^2\,d^3\right)$$
$$\text{ArcTan}[\text{Tan}[e+f\,x]]\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(\left(a^2+b^2\right)^3\,f\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\left(3\,a^2\,b\,c^3-b^3\,c^3-3\,a^3\,c^2\,d+9\,a\,b^2\,c^2\,d-9\,a^2\,b\,c\,d^2+3\,b^3\,c\,d^2+a^3\,d^3-3\,a\,b^2\,d^3\right)$$
$$\text{Log}\left[\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^2\right]\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(2\,\left(a^2+b^2\right)^3\,f\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)\,\big(2\,a^3\,b^3\,c^3+2\,a\,b^5\,c^3-3\,a^4\,b^2\,c^2\,d+3\,b^6\,c^2\,d-6\,a^3\,b^3\,c\,d^2-$$
$$6\,a\,b^5\,c\,d^2+a^6\,d^3+4\,a^4\,b^2\,d^3+3\,a^2\,b^4\,d^3+a^6\,c^3\,(e+f\,x)-2\,a^4\,b^2\,c^3\,(e+f\,x)-$$
$$3\,a^2\,b^4\,c^3\,(e+f\,x)+9\,a^5\,b\,c^2\,d\,(e+f\,x)+6\,a^3\,b^3\,c^2\,d\,(e+f\,x)-3\,a\,b^5\,c^2\,d\,(e+f\,x)-$$
$$3\,a^6\,c\,d^2\,(e+f\,x)+6\,a^4\,b^2\,c\,d^2\,(e+f\,x)+9\,a^2\,b^4\,c\,d^2\,(e+f\,x)-3\,a^5\,b\,d^3\,(e+f\,x)-$$
$$2\,a^3\,b^3\,d^3\,(e+f\,x)+a\,b^5\,d^3\,(e+f\,x)-3\,a^3\,b^3\,c^3\,\text{Cos}[2\,(e+f\,x)]-3\,a\,b^5\,c^3\,\text{Cos}[2\,(e+f\,x)]+$$
$$6\,a^4\,b^2\,c^2\,d\,\text{Cos}[2\,(e+f\,x)]+3\,a^2\,b^4\,c^2\,d\,\text{Cos}[2\,(e+f\,x)]-3\,b^6\,c^2\,d\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,a^5\,b\,c\,d^2\,\text{Cos}[2\,(e+f\,x)]+3\,a^3\,b^3\,c\,d^2\,\text{Cos}[2\,(e+f\,x)]+6\,a\,b^5\,c\,d^2\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,a^4\,b^2\,d^3\,\text{Cos}[2\,(e+f\,x)]-3\,a^2\,b^4\,d^3\,\text{Cos}[2\,(e+f\,x)]+a^6\,c^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$4\,a^4\,b^2\,c^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^2\,b^4\,c^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+$$
$$9\,a^5\,b\,c^2\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-12\,a^3\,b^3\,c^2\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+$$
$$3\,a\,b^5\,c^2\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-3\,a^6\,c\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+$$
$$12\,a^4\,b^2\,c\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-9\,a^2\,b^4\,c\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,a^5\,b\,d^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+4\,a^3\,b^3\,d^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$a\,b^5\,d^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^4\,b^2\,c^3\,\text{Sin}[2\,(e+f\,x)]+3\,a^2\,b^4\,c^3\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,a^5\,b\,c^2\,d\,\text{Sin}[2\,(e+f\,x)]-3\,a^3\,b^3\,c^2\,d\,\text{Sin}[2\,(e+f\,x)]+3\,a\,b^5\,c^2\,d\,\text{Sin}[2\,(e+f\,x)]+$$
$$3\,a^6\,c\,d^2\,\text{Sin}[2\,(e+f\,x)]-3\,a^4\,b^2\,c\,d^2\,\text{Sin}[2\,(e+f\,x)]-6\,a^2\,b^4\,c\,d^2\,\text{Sin}[2\,(e+f\,x)]+$$
$$3\,a^5\,b\,d^3\,\text{Sin}[2\,(e+f\,x)]+3\,a^3\,b^3\,d^3\,\text{Sin}[2\,(e+f\,x)]+2\,a^5\,b\,c^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,a^3\,b^3\,c^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+18\,a^4\,b^2\,c^2\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,a^2\,b^4\,c^2\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-6\,a^5\,b\,c\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+$$
$$18\,a^3\,b^3\,c\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-6\,a^4\,b^2\,d^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+$$
$$2\,a^2\,b^4\,d^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]\big)\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(2\,a\,(a-i\,b)^3\,(a+i\,b)^3\,f\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\right)$$

Problem 1209: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\left(a+b\,\text{Tan}[e+f\,x]\right)^4}{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 190 leaves, 6 steps):

$$\frac{\left(a^4 c-6 a^2 b^2 c+b^4 c+4 a^3 b d-4 a b^3 d\right) x}{c^2+d^2}-\frac{\left(4 a^3 b c-4 a b^3 c-a^4 d+6 a^2 b^2 d-b^4 d\right) \text{Log}[\text{Cos}[e+f x]]}{\left(c^2+d^2\right) f}+\frac{(b c-a d)^4 \text{Log}[c+d \text{Tan}[e+f x]]}{d^3 \left(c^2+d^2\right) f}-\frac{b^3 (b c-3 a d) \text{Tan}[e+f x]}{d^2 f}+\frac{b^2 (a+b \text{Tan}[e+f x])^2}{2 d f}$$

Result (type 3, 578 leaves):

$$\frac{b^4 \text{Cos}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) (a+b \text{Tan}[e+f x])^4}{2 d f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^4 (c+d \text{Tan}[e+f x])}+$$
$$\left(\left(a^4 c-6 a^2 b^2 c+b^4 c+4 a^3 b d-4 a b^3 d\right) (e+f x) \text{Cos}[e+f x]^3 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) (a+b \text{Tan}[e+f x])^4\right) \Big/$$
$$\left((c-i d) (c+i d) f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^4 (c+d \text{Tan}[e+f x])\right)+$$
$$\left(\left(-b^4 c^2+4 a b^3 c d-6 a^2 b^2 d^2+b^4 d^2\right) \text{Cos}[e+f x]^3 \text{Log}[\text{Cos}[e+f x]] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) (a+b \text{Tan}[e+f x])^4\right) \Big/$$
$$\left(d^3 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^4 (c+d \text{Tan}[e+f x])\right)+$$
$$\left(\left(b^4 c^4-4 a b^3 c^3 d+6 a^2 b^2 c^2 d^2-4 a^3 b c d^3+a^4 d^4\right) \text{Cos}[e+f x]^3 \text{Log}[c \text{Cos}[e+f x]+d \text{Sin}[e+f x]] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) (a+b \text{Tan}[e+f x])^4\right) \Big/$$
$$\left(d^3 \left(c^2+d^2\right) f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^4 (c+d \text{Tan}[e+f x])\right)+$$
$$\left(\text{Cos}[e+f x]^2 (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) \left(-b^4 c \text{Sin}[e+f x]+4 a b^3 d \text{Sin}[e+f x]\right) (a+b \text{Tan}[e+f x])^4\right) \Big/ \left(d^2 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^4 (c+d \text{Tan}[e+f x])\right)$$

Problem 1214: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b \text{Tan}[e+f x])^2 (c+d \text{Tan}[e+f x])} \, dx$$

Optimal (type 3, 183 leaves, 4 steps):

$$\frac{\left(a^2 c-b^2 c-2 a b d\right) x}{\left(a^2+b^2\right)^2 \left(c^2+d^2\right)}+\frac{b^2 \left(2 a b c-3 a^2 d-b^2 d\right) \text{Log}[a \text{Cos}[e+f x]+b \text{Sin}[e+f x]]}{\left(a^2+b^2\right)^2 (b c-a d)^2 f}+\frac{d^3 \text{Log}[c \text{Cos}[e+f x]+d \text{Sin}[e+f x]]}{(b c-a d)^2 \left(c^2+d^2\right) f}-\frac{b^2}{\left(a^2+b^2\right) (b c-a d) f (a+b \text{Tan}[e+f x])}$$

Result (type 3, 1330 leaves):

$$\Big(\big(a^2\,c-b^2\,c-2\,a\,b\,d\big)\ (e+f\,x)\ \mathrm{Sec}[e+f\,x]^3$$
$$\big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$
$$\Big((a-i\,b)^2\ (a+i\,b)^2\ (c-i\,d)\ (c+i\,d)\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)-$$
$$\Big(\big(2\,i\,a^6\,b^4\,c^8+2\,a^5\,b^5\,c^8+2\,i\,a^4\,b^6\,c^8+2\,a^3\,b^7\,c^8-5\,i\,a^7\,b^3\,c^7\,d-5\,a^6\,b^4\,c^7\,d-6\,i\,a^5\,b^5\,c^7\,d-$$
$$6\,a^4\,b^6\,c^7\,d-i\,a^3\,b^7\,c^7\,d-a^2\,b^8\,c^7\,d+3\,i\,a^8\,b^2\,c^6\,d^2+3\,a^7\,b^3\,c^6\,d^2+8\,i\,a^6\,b^4\,c^6\,d^2+8\,a^5\,b^5\,c^6\,d^2+$$
$$5\,i\,a^4\,b^6\,c^6\,d^2+5\,a^3\,b^7\,c^6\,d^2-10\,i\,a^7\,b^3\,c^5\,d^3-10\,a^6\,b^4\,c^5\,d^3-12\,i\,a^5\,b^5\,c^5\,d^3-12\,a^4\,b^6\,c^5\,d^3-$$
$$2\,i\,a^3\,b^7\,c^5\,d^3-2\,a^2\,b^8\,c^5\,d^3+6\,i\,a^8\,b^2\,c^4\,d^4+6\,a^7\,b^3\,c^4\,d^4+10\,i\,a^6\,b^4\,c^4\,d^4+10\,a^5\,b^5\,c^4\,d^4+4\,i\,a^4$$
$$b^6\,c^4\,d^4+4\,a^3\,b^7\,c^4\,d^4-5\,i\,a^7\,b^3\,c^3\,d^5-5\,a^6\,b^4\,c^3\,d^5-6\,i\,a^5\,b^5\,c^3\,d^5-6\,a^4\,b^6\,c^3\,d^5-i\,a^3\,b^7\,c^3\,d^5-$$
$$a^2\,b^8\,c^3\,d^5+3\,i\,a^8\,b^2\,c^2\,d^6+3\,a^7\,b^3\,c^2\,d^6+4\,i\,a^6\,b^4\,c^2\,d^6+4\,a^5\,b^5\,c^2\,d^6+i\,a^4\,b^6\,c^2\,d^6+a^3\,b^7\,c^2\,d^6\big)$$
$$(e+f\,x)\ \mathrm{Sec}[e+f\,x]^3\ \big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$
$$\Big(a^2\ (a-i\,b)^4\ (a+i\,b)^3\ c^2\ (c-i\,d)\ (c+i\,d)\ (-b\,c+a\,d)^3\ \big(c^2+d^2\big)$$
$$f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)-$$
$$\Big(i\ \big(2\,a\,b^3\,c-3\,a^2\,b^2\,d-b^4\,d\big)\ \mathrm{ArcTan}[\mathrm{Tan}[e+f\,x]]\ \mathrm{Sec}[e+f\,x]^3$$
$$\big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$
$$\Big(\big(a^2+b^2\big)^2\ (-b\,c+a\,d)^2\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)+$$
$$\Big(\big(2\,a\,b^3\,c-3\,a^2\,b^2\,d-b^4\,d\big)\ \mathrm{Log}\Big[\big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\Big]\ \mathrm{Sec}[e+f\,x]^3$$
$$\big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$
$$\Big(2\ \big(a^2+b^2\big)^2\ (-b\,c+a\,d)^2\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)+$$
$$\Big(d^3\ \mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]\ \mathrm{Sec}[e+f\,x]^3$$
$$\big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)^2\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$
$$\Big((b\,c-a\,d)^2\ \big(c^2+d^2\big)\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)-$$
$$\Big(b^3\,\mathrm{Sec}[e+f\,x]^2\ \big(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\big)\ \big(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\big)\ \mathrm{Tan}[e+f\,x]\Big)\Big/$$
$$\Big(a\ (a-i\,b)\ (a+i\,b)\ (-b\,c+a\,d)\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)\Big)$$

Problem 1215: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\big(a+b\,\mathrm{Tan}[e+f\,x]\big)^3\ \big(c+d\,\mathrm{Tan}[e+f\,x]\big)}\,dx$$

Optimal (type 3, 279 leaves, 5 steps):

$$\frac{\big(a^3\,c-3\,a\,b^2\,c-3\,a^2\,b\,d+b^3\,d\big)\ x}{\big(a^2+b^2\big)^3\ \big(c^2+d^2\big)}-$$
$$\Big(b^2\ \Big(8\,a^3\,b\,c\,d-6\,a^4\,d^2+b^4\ \big(c^2-d^2\big)-3\,a^2\,b^2\ \big(c^2+d^2\big)\Big)\ \mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]\Big)\Big/$$
$$\Big(\big(a^2+b^2\big)^3\ (b\,c-a\,d)^3\ f\Big)-\frac{d^4\ \mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]}{(b\,c-a\,d)^3\ \big(c^2+d^2\big)\ f}-$$
$$\frac{b^2}{2\ \big(a^2+b^2\big)\ (b\,c-a\,d)\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)^2}-\frac{b^2\ \big(2\,a\,b\,c-3\,a^2\,d-b^2\,d\big)}{\big(a^2+b^2\big)^2\ (b\,c-a\,d)^2\ f\ \big(a+b\,\mathrm{Tan}[e+f\,x]\big)}$$

Result (type 3, 2280 leaves) :

$$
\begin{aligned}
&\left(b^4 \text{Sec}[e+f x]^4 \left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right) \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \left(-b c+a d\right) f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)+ \\
&\left(\left(a^3 c-3 a b^2 c-3 a^2 b d+b^3 d\right) \left(e+f x\right) \text{Sec}[e+f x]^4\right. \\
&\qquad \left.\left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^3 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(\left(a-\mathbb{i} b\right)^3 \left(a+\mathbb{i} b\right)^3 \left(c-\mathbb{i} d\right) \left(c+\mathbb{i} d\right) f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)+ \\
&\left(\left(-3 \mathbb{i} a^9 b^6 c^{10}-3 a^8 b^7 c^{10}-5 \mathbb{i} a^7 b^8 c^{10}-5 a^6 b^9 c^{10}-\mathbb{i} a^5 b^{10} c^{10}-a^4 b^{11} c^{10}+\mathbb{i} a^3 b^{12} c^{10}+a^2 b^{13} c^{10}+\right.\right. \\
&\qquad 14 \mathbb{i} a^{10} b^5 c^9 d+14 a^9 b^6 c^9 d+26 \mathbb{i} a^8 b^7 c^9 d+26 a^7 b^8 c^9 d+10 \mathbb{i} a^6 b^9 c^9 d+10 a^5 b^{10} c^9 d- \\
&\qquad 2 \mathbb{i} a^4 b^{11} c^9 d-2 a^3 b^{12} c^9 d-25 \mathbb{i} a^{11} b^4 c^8 d^2-25 a^{10} b^5 c^8 d^2-58 \mathbb{i} a^9 b^6 c^8 d^2-58 a^8 b^7 c^8 d^2- \\
&\qquad 40 \mathbb{i} a^7 b^8 c^8 d^2-40 a^6 b^9 c^8 d^2-6 \mathbb{i} a^5 b^{10} c^8 d^2-6 a^4 b^{11} c^8 d^2+\mathbb{i} a^3 b^{12} c^8 d^2+a^2 b^{13} c^8 d^2+ \\
&\qquad 20 \mathbb{i} a^{12} b^3 c^7 d^3+20 a^{11} b^4 c^7 d^3+74 \mathbb{i} a^{10} b^5 c^7 d^3+74 a^9 b^6 c^7 d^3+86 \mathbb{i} a^8 b^7 c^7 d^3+86 a^7 b^8 c^7 d^3+ \\
&\qquad 30 \mathbb{i} a^6 b^9 c^7 d^3+30 a^5 b^{10} c^7 d^3-2 \mathbb{i} a^4 b^{11} c^7 d^3-2 a^3 b^{12} c^7 d^3-6 \mathbb{i} a^{13} b^2 c^6 d^4-6 a^{12} b^3 c^6 d^4- \\
&\qquad 65 \mathbb{i} a^{11} b^4 c^6 d^4-65 a^{10} b^5 c^6 d^4-120 \mathbb{i} a^9 b^6 c^6 d^4-120 a^8 b^7 c^6 d^4-70 \mathbb{i} a^7 b^8 c^6 d^4- \\
&\qquad 70 a^6 b^9 c^6 d^4-10 \mathbb{i} a^5 b^{10} c^6 d^4-10 a^4 b^{11} c^6 d^4-\mathbb{i} a^3 b^{12} c^6 d^4-a^2 b^{13} c^6 d^4+40 \mathbb{i} a^{12} b^3 c^5 d^5+ \\
&\qquad 40 a^{11} b^4 c^5 d^5+106 \mathbb{i} a^{10} b^5 c^5 d^5+106 a^9 b^6 c^5 d^5+94 \mathbb{i} a^8 b^7 c^5 d^5+94 a^7 b^8 c^5 d^5+ \\
&\qquad 30 \mathbb{i} a^6 b^9 c^5 d^5+30 a^5 b^{10} c^5 d^5+2 \mathbb{i} a^4 b^{11} c^5 d^5+2 a^3 b^{12} c^5 d^5-12 \mathbb{i} a^{13} b^2 c^4 d^6-12 a^{12} b^3 c^4 d^6- \\
&\qquad 55 \mathbb{i} a^{11} b^4 c^4 d^6-55 a^{10} b^5 c^4 d^6-78 \mathbb{i} a^9 b^6 c^4 d^6-78 a^8 b^7 c^4 d^6-40 \mathbb{i} a^7 b^8 c^4 d^6-40 a^6 b^9 c^4 d^6- \\
&\qquad 6 \mathbb{i} a^5 b^{10} c^4 d^6-6 a^4 b^{11} c^4 d^6-\mathbb{i} a^3 b^{12} c^4 d^6-a^2 b^{13} c^4 d^6+20 \mathbb{i} a^{12} b^3 c^3 d^7+20 a^{11} b^4 c^3 d^7+ \\
&\qquad 46 \mathbb{i} a^{10} b^5 c^3 d^7+46 a^9 b^6 c^3 d^7+34 \mathbb{i} a^8 b^7 c^3 d^7+34 a^7 b^8 c^3 d^7+10 \mathbb{i} a^6 b^9 c^3 d^7+10 a^5 b^{10} c^3 d^7+ \\
&\qquad 2 \mathbb{i} a^4 b^{11} c^3 d^7+2 a^3 b^{12} c^3 d^7-6 \mathbb{i} a^{13} b^2 c^2 d^8-6 a^{12} b^3 c^2 d^8-15 \mathbb{i} a^{11} b^4 c^2 d^8-15 a^{10} b^5 c^2 d^8- \\
&\qquad \left.13 \mathbb{i} a^9 b^6 c^2 d^8-13 a^8 b^7 c^2 d^8-5 \mathbb{i} a^7 b^8 c^2 d^8-5 a^6 b^9 c^2 d^8-\mathbb{i} a^5 b^{10} c^2 d^8-a^4 b^{11} c^2 d^8\right) \\
&\qquad \left.\left(e+f x\right) \text{Sec}[e+f x]^4 \left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^3 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(a^2 \left(a-\mathbb{i} b\right)^6 \left(a+\mathbb{i} b\right)^5 c^2 \left(c-\mathbb{i} d\right) \left(c+\mathbb{i} d\right) \left(-b c+a d\right)^5 \left(c^2+d^2\right)\right. \\
&\qquad \left. f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)- \\
&\left(\mathbb{i} \left(-3 a^2 b^4 c^2+b^6 c^2+8 a^3 b^3 c d-6 a^4 b^2 d^2-3 a^2 b^4 d^2-b^6 d^2\right) \text{ArcTan}[\text{Tan}[e+f x]]\right. \\
&\qquad \left.\text{Sec}[e+f x]^4 \left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^3 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(\left(a^2+b^2\right)^3 \left(-b c+a d\right)^3 f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)+ \\
&\left(\left(-3 a^2 b^4 c^2+b^6 c^2+8 a^3 b^3 c d-6 a^4 b^2 d^2-3 a^2 b^4 d^2-b^6 d^2\right) \text{Log}\left[\left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^2\right]\right. \\
&\qquad \left.\text{Sec}[e+f x]^4 \left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^3 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(2 \left(a^2+b^2\right)^3 \left(-b c+a d\right)^3 f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)- \\
&\left(d^4 \text{Log}[c \text{Cos}[e+f x]+d \text{Sin}[e+f x]] \text{Sec}[e+f x]^4\right. \\
&\qquad \left.\left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^3 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(\left(b c-a d\right)^3 \left(c^2+d^2\right) f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)+ \\
&\left(\text{Sec}[e+f x]^4 \left(a \text{Cos}[e+f x]+b \text{Sin}[e+f x]\right)^2 \left(c \text{Cos}[e+f x]+d \text{Sin}[e+f x]\right)\right. \\
&\qquad \left.\left(3 a b^4 c \text{Sin}[e+f x]-4 a^2 b^3 d \text{Sin}[e+f x]-b^5 d \text{Sin}[e+f x]\right)\right) \Big/ \\
&\quad \left(a \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \left(-b c+a d\right)^2 f \left(a+b \text{Tan}[e+f x]\right)^3 \left(c+d \text{Tan}[e+f x]\right)\right)
\end{aligned}
$$

Problem 1216: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\text{Tan}[e+f\,x])^4}{(c+d\,\text{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 285 leaves, 6 steps):

$$\frac{\left(8\,a^3\,b\,c\,d-8\,a\,b^3\,c\,d+a^4\,(c^2-d^2)-6\,a^2\,b^2\,(c^2-d^2)+b^4\,(c^2-d^2)\right)\,x}{(c^2+d^2)^2}-\frac{2\,(a^2\,c-b^2\,c+2\,a\,b\,d)\,(2\,a\,b\,c-a^2\,d+b^2\,d)\,\text{Log}[\text{Cos}[e+f\,x]]}{(c^2+d^2)^2\,f}-\frac{2\,(b\,c-a\,d)^3\,\left(a\,c\,d+b\,(c^2+2\,d^2)\right)\,\text{Log}[c+d\,\text{Tan}[e+f\,x]]}{d^3\,(c^2+d^2)^2\,f}-\frac{b^2\,\left(a\,d\,(2\,b\,c-a\,d)-b^2\,(2\,c^2+d^2)\right)\,\text{Tan}[e+f\,x]}{d^2\,(c^2+d^2)\,f}-\frac{(b\,c-a\,d)^2\,(a+b\,\text{Tan}[e+f\,x])^2}{d\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 3, 1789 leaves):

$$\Big(2\,\big(-\mathrm{i}\,b^4 c^{10} d^2 + 2\,\mathrm{i}\,a\,b^3 c^9 d^3 - b^4 c^9 d^3 + 2\,a\,b^3 c^8 d^4 - 3\,\mathrm{i}\,b^4 c^8 d^4 - 2\,\mathrm{i}\,a^3 b\,c^7 d^5 + 8\,\mathrm{i}\,a\,b^3 c^7 d^5 - 3\,b^4 c^7 d^5 + \mathrm{i}\,a^4 c^6 d^6 - 2\,a^3 b\,c^6 d^6 - 6\,\mathrm{i}\,a^2 b^2 c^6 d^6 + 8\,a\,b^3 c^6 d^6 - 2\,\mathrm{i}\,b^4 c^6 d^6 + a^4 c^5 d^7 - 6\,a^2 b^2 c^5 d^7 + 6\,\mathrm{i}\,a\,b^3 c^5 d^7 - 2\,b^4 c^5 d^7 + \mathrm{i}\,a^4 c^4 d^8 - 6\,\mathrm{i}\,a^2 b^2 c^4 d^8 + 6\,a\,b^3 c^4 d^8 + a^4 c^3 d^9 + 2\,\mathrm{i}\,a^3 b\,c^3 d^9 - 6\,a^2 b^2 c^3 d^9 + 2\,a^3 b\,c^2 d^{10}\big)\,(e+f\,x)\,\mathrm{Cos}[e+f\,x]^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\,(a+b\,\mathrm{Tan}[e+f\,x])^4\Big)\Big/\Big(c^2\,(c-\mathrm{i}\,d)^4\,(c+\mathrm{i}\,d)^3\,d^5\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big) -$$

$$\Big(2\,\mathrm{i}\,\big(-b^4 c^5 + 2\,a\,b^3 c^4 d - 2\,b^4 c^3 d^2 - 2\,a^3 b\,c^2 d^3 + 6\,a\,b^3 c^2 d^3 + a^4 c\,d^4 - 6\,a^2 b^2 c\,d^4 + 2\,a^3 b\,d^5\big)\,\mathrm{ArcTan}[\mathrm{Tan}[e+f\,x]]\,\mathrm{Cos}[e+f\,x]^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\,(a+b\,\mathrm{Tan}[e+f\,x])^4\Big)\Big/\Big(d^3\,(c^2+d^2)^2\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big) -$$

$$\Big(2\,(-b^4 c + 2\,a\,b^3 d)\,\mathrm{Cos}[e+f\,x]^2\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\,(a+b\,\mathrm{Tan}[e+f\,x])^4\Big)\Big/\Big(d^3\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big) +$$

$$\Big(\big(-b^4 c^5 + 2\,a\,b^3 c^4 d - 2\,b^4 c^3 d^2 - 2\,a^3 b\,c^2 d^3 + 6\,a\,b^3 c^2 d^3 + a^4 c\,d^4 - 6\,a^2 b^2 c\,d^4 + 2\,a^3 b\,d^5\big)\,\mathrm{Cos}[e+f\,x]^2\,\mathrm{Log}\big[(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\big]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\,(a+b\,\mathrm{Tan}[e+f\,x])^4\Big)\Big/\Big(d^3\,(c^2+d^2)^2\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big) +$$

$$\Big(\mathrm{Cos}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,\big(b^4 c^5 d + 2\,b^4 c^3 d^3 + b^4 c\,d^5 + a^4 c^4 d^2\,(e+f\,x) - 6\,a^2 b^2 c^4 d^2\,(e+f\,x) + b^4 c^4 d^2\,(e+f\,x) + 8\,a^3 b\,c^3 d^3\,(e+f\,x) - 8\,a\,b^3 c^3 d^3\,(e+f\,x) - a^4 c^2 d^4\,(e+f\,x) + 6\,a^2 b^2 c^2 d^4\,(e+f\,x) - b^4 c^2 d^4\,(e+f\,x) - b^4 c^5 d\,\mathrm{Cos}[2\,(e+f\,x)] - 2\,b^4 c^3 d^3\,\mathrm{Cos}[2\,(e+f\,x)] - b^4 c\,d^5\,\mathrm{Cos}[2\,(e+f\,x)] + a^4 c^4 d^2\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] - 6\,a^2 b^2 c^4 d^2\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] + b^4 c^4 d^2\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] + 8\,a^3 b\,c^3 d^3\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] - 8\,a\,b^3 c^3 d^3\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] - a^4 c^2 d^4\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] + 6\,a^2 b^2 c^2 d^4\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] - b^4 c^2 d^4\,(e+f\,x)\,\mathrm{Cos}[2\,(e+f\,x)] + 2\,b^4 c^6\,\mathrm{Sin}[2\,(e+f\,x)] - 4\,a\,b^3 c^5 d\,\mathrm{Sin}[2\,(e+f\,x)] + 6\,a^2 b^2 c^4 d^2\,\mathrm{Sin}[2\,(e+f\,x)] + 3\,b^4 c^4 d^2\,\mathrm{Sin}[2\,(e+f\,x)] - 4\,a^3 b\,c^3 d^3\,\mathrm{Sin}[2\,(e+f\,x)] - 4\,a\,b^3 c^3 d^3\,\mathrm{Sin}[2\,(e+f\,x)] + a^4 c^2 d^4\,\mathrm{Sin}[2\,(e+f\,x)] + 6\,a^2 b^2 c^2 d^4\,\mathrm{Sin}[2\,(e+f\,x)] + b^4 c^2 d^4\,\mathrm{Sin}[2\,(e+f\,x)] - 4\,a^3 b\,c\,d^5\,\mathrm{Sin}[2\,(e+f\,x)] + a^4 d^6\,\mathrm{Sin}[2\,(e+f\,x)] + a^4 c^3 d^3\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] - 6\,a^2 b^2 c^3 d^3\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] + b^4 c^3 d^3\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] + 8\,a^3 b\,c^2 d^4\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] - 8\,a\,b^3 c^2 d^4\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] - a^4 c\,d^5\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] + 6\,a^2 b^2 c\,d^5\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)] - b^4 c\,d^5\,(e+f\,x)\,\mathrm{Sin}[2\,(e+f\,x)]\big)\,(a+b\,\mathrm{Tan}[e+f\,x])^4\Big)\Big/\Big(2\,c\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,d^2\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)$$

Problem 1217: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^3}{(c+d\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 223 leaves, 5 steps):

$$\frac{\left(6 a^2 b c d-2 b^3 c d+a^3 \left(c^2-d^2\right)-3 a b^2 \left(c^2-d^2\right)\right) x}{\left(c^2+d^2\right)^2}+$$
$$\frac{\left(2 a^3 c d-6 a b^2 c d-3 a^2 b \left(c^2-d^2\right)+b^3 \left(c^2-d^2\right)\right) \text{Log}[\text{Cos}[e+f x]]}{\left(c^2+d^2\right)^2 f}+$$
$$\frac{(b c-a d)^2 \left(2 a c d+b \left(c^2+3 d^2\right)\right) \text{Log}[c+d \text{Tan}[e+f x]]}{d^2 \left(c^2+d^2\right)^2 f}-\frac{(b c-a d)^2 (a+b \text{Tan}[e+f x])}{d \left(c^2+d^2\right) f (c+d \text{Tan}[e+f x])}$$

Result (type 3, 1027 leaves):

$$\left(\left(a^3 c^2-3 a b^2 c^2+6 a^2 b c d-2 b^3 c d-a^3 d^2+3 a b^2 d^2\right)\right.$$
$$\left.(e+f x) \text{Cos}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left((c-i d)^2 (c+i d)^2 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)+$$
$$\left(\left(i b^3 c^9 d+b^3 c^8 d^2-3 i a^2 b c^7 d^3+4 i b^3 c^7 d^3+2 i a^3 c^6 d^4-3 a^2 b c^6 d^4-\right.\right.$$
$$6 i a b^2 c^6 d^4+4 b^3 c^6 d^4+2 a^3 c^5 d^5-6 a b^2 c^5 d^5+3 i b^3 c^5 d^5+2 i a^3 c^4 d^6-$$
$$\left.6 i a b^2 c^4 d^6+3 b^3 c^4 d^6+2 a^3 c^3 d^7+3 i a^2 b c^3 d^7-6 a b^2 c^3 d^7+3 a^2 b c^2 d^8\right)$$
$$\left.(e+f x) \text{Cos}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left(c^2 (c-i d)^4 (c+i d)^3 d^3 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)-$$
$$\left(i \left(b^3 c^4-3 a^2 b c^2 d^2+3 b^3 c^2 d^2+2 a^3 c d^3-6 a b^2 c d^3+3 a^2 b d^4\right) \text{ArcTan}[\text{Tan}[e+f x]]\right.$$
$$\left.\text{Cos}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left(d^2 \left(c^2+d^2\right)^2 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)-$$
$$\left(b^3 \text{Cos}[e+f x] \text{Log}[\text{Cos}[e+f x]] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left(d^2 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)+$$
$$\left(\left(b^3 c^4-3 a^2 b c^2 d^2+3 b^3 c^2 d^2+2 a^3 c d^3-6 a b^2 c d^3+3 a^2 b d^4\right) \text{Cos}[e+f x]\right.$$
$$\left.\text{Log}\left[(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2 (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left(2 d^2 \left(c^2+d^2\right)^2 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)+$$
$$\left(\text{Cos}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x]) \left(-b^3 c^3 \text{Sin}[e+f x]+3 a b^2 c^2 d \text{Sin}[e+f x]-\right.\right.$$
$$\left.\left.3 a^2 b c d^2 \text{Sin}[e+f x]+a^3 d^3 \text{Sin}[e+f x]\right) (a+b \text{Tan}[e+f x])^3\right) \Big/$$
$$\left(c (c-i d) (c+i d) d f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3 (c+d \text{Tan}[e+f x])^2\right)$$

Problem 1218: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \text{Tan}[e+f x])^2}{(c+d \text{Tan}[e+f x])^2} \, dx$$

Optimal (type 3, 126 leaves, 3 steps):

$$-\frac{(b(c-d)-a(c+d))(a(c-d)+b(c+d))x}{(c^2+d^2)^2}-\frac{2(bc-ad)(ac+bd)\,\text{Log}[c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx]]}{(c^2+d^2)^2 f}-\frac{(bc-ad)^2}{d(c^2+d^2)f(c+d\,\text{Tan}[e+fx])}$$

Result (type 3, 320 leaves):

$$\frac{1}{(c^2+d^2)^2 f(a\,\text{Cos}[e+fx]+b\,\text{Sin}[e+fx])^2(c+d\,\text{Tan}[e+fx])^2}(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])\left(\frac{(bc-ad)^2(c^2+d^2)\,\text{Sin}[e+fx]}{c}+\left(b(-c+d)+a(c+d)\right)(a(c-d)+b(c+d))(e+fx)(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])+2\,i\,(a^2cd-b^2cd+ab(-c^2+d^2))(e+fx)(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])+2\,i\,(-a^2cd+b^2cd+ab(c^2-d^2))\,\text{ArcTan}[\text{Tan}[e+fx]](c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])+(a^2cd-b^2cd+ab(-c^2+d^2))\,\text{Log}\left[(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])^2\right](c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])\right)(a+b\,\text{Tan}[e+fx])^2$$

Problem 1219: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{a+b\,\text{Tan}[e+fx]}{(c+d\,\text{Tan}[e+fx])^2}\,dx$$

Optimal (type 3, 111 leaves, 3 steps):

$$\frac{(2bcd+a(c^2-d^2))x}{(c^2+d^2)^2}+\frac{(2acd-b(c^2-d^2))\,\text{Log}[c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx]]}{(c^2+d^2)^2 f}+\frac{bc-ad}{(c^2+d^2)f(c+d\,\text{Tan}[e+fx])}$$

Result (type 3, 257 leaves):

$$\frac{1}{2c(c^2+d^2)^2 f(c+d\,\text{Tan}[e+fx])}\left(c^2\left(2(a-i\,b)(c+i\,d)^2(e+fx)+(2acd+b(-c^2+d^2))\,\text{Log}\left[(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])^2\right]\right)+d\left(2(c+i\,d)\left(a(-i\,d^2+cd(1+i\,e+i\,fx)+c^2(e+fx))+bc(-i\,c(-i+e+fx)+d(i+e+fx))\right)+c(2acd+b(-c^2+d^2))\,\text{Log}\left[(c\,\text{Cos}[e+fx]+d\,\text{Sin}[e+fx])^2\right]\right)\text{Tan}[e+fx]+2\,i\,c(-2acd+b(c^2-d^2))\,\text{ArcTan}[\text{Tan}[e+fx]](c+d\,\text{Tan}[e+fx])\right)$$

Problem 1220: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 184 leaves, 4 steps):

$$-\frac{\left(2\,b\,c\,d-a\,\left(c^2-d^2\right)\right)\,x}{\left(a^2+b^2\right)\,\left(c^2+d^2\right)^2}+\frac{b^3\,\mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]}{\left(a^2+b^2\right)\,(b\,c-a\,d)^2\,f}+$$
$$\frac{d^2\,\left(2\,a\,c\,d-b\,\left(3\,c^2+d^2\right)\right)\,\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]}{(b\,c-a\,d)^2\,\left(c^2+d^2\right)^2\,f}+$$
$$\frac{d^2}{(b\,c-a\,d)\,\left(c^2+d^2\right)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 1329 leaves):

$$\Big(\left(a\,c^2-2\,b\,c\,d-a\,d^2\right)\,(e+f\,x)\,\mathrm{Sec}[e+f\,x]^3$$
$$(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\Big)\Big/$$
$$\Big((a-i\,b)\,(a+i\,b)\,(c-i\,d)^2\,(c+i\,d)^2\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\big(3\,i\,a^6\,b^2\,c^8\,d^2+6\,i\,a^4\,b^4\,c^8\,d^2+3\,i\,a^2\,b^6\,c^8\,d^2-5\,i\,a^7\,b\,c^7\,d^3+3\,a^6\,b^2\,c^7\,d^3-$$
$$10\,i\,a^5\,b^3\,c^7\,d^3+6\,a^4\,b^4\,c^7\,d^3-5\,i\,a^3\,b^5\,c^7\,d^3+3\,a^2\,b^6\,c^7\,d^3+2\,i\,a^8\,c^6\,d^4-5\,a^7\,b\,c^6\,d^4+$$
$$8\,i\,a^6\,b^2\,c^6\,d^4-10\,a^5\,b^3\,c^6\,d^4+10\,i\,a^4\,b^4\,c^6\,d^4-5\,a^3\,b^5\,c^6\,d^4+4\,i\,a^2\,b^6\,c^6\,d^4+$$
$$2\,a^8\,c^5\,d^5-6\,i\,a^7\,b\,c^5\,d^5+8\,a^6\,b^2\,c^5\,d^5-12\,i\,a^5\,b^3\,c^5\,d^5+10\,a^4\,b^4\,c^5\,d^5-6\,i\,a^3\,b^5\,c^5\,d^5+$$
$$4\,a^2\,b^6\,c^5\,d^5+2\,i\,a^8\,c^4\,d^6-6\,a^7\,b\,c^4\,d^6+5\,i\,a^6\,b^2\,c^4\,d^6-12\,a^5\,b^3\,c^4\,d^6+4\,i\,a^4\,b^4\,c^4\,d^6-$$
$$6\,a^3\,b^5\,c^4\,d^6+i\,a^2\,b^6\,c^4\,d^6+2\,a^8\,c^3\,d^7-i\,a^7\,b\,c^3\,d^7+5\,a^6\,b^2\,c^3\,d^7-2\,i\,a^5\,b^3\,c^3\,d^7+$$
$$4\,a^4\,b^4\,c^3\,d^7-i\,a^3\,b^5\,c^3\,d^7+a^2\,b^6\,c^3\,d^7-a^7\,b\,c^2\,d^8-2\,a^5\,b^3\,c^2\,d^8-a^3\,b^5\,c^2\,d^8\big)\,(e+f\,x)$$
$$\mathrm{Sec}[e+f\,x]^3\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\Big)\Big/$$
$$\Big(a^2\,(a-i\,b)\,(a+i\,b)\,\left(a^2+b^2\right)\,c^2\,(c-i\,d)^4\,(c+i\,d)^3\,(-b\,c+a\,d)^3$$
$$f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)-$$
$$\Big(i\,\left(-3\,b\,c^2\,d^2+2\,a\,c\,d^3-b\,d^4\right)\,\mathrm{ArcTan}[\mathrm{Tan}[e+f\,x]]\,\mathrm{Sec}[e+f\,x]^3$$
$$(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\Big)\Big/$$
$$\Big((b\,c-a\,d)^2\,\left(c^2+d^2\right)^2\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)+$$
$$\Big(b^3\,\mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]\,\mathrm{Sec}[e+f\,x]^3$$
$$(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\Big)\Big/$$
$$\Big(\left(a^2+b^2\right)\,(-b\,c+a\,d)^2\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\left(-3\,b\,c^2\,d^2+2\,a\,c\,d^3-b\,d^4\right)\,\mathrm{Log}\left[(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\right]\,\mathrm{Sec}[e+f\,x]^3$$
$$(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\Big)\Big/$$
$$\Big(2\,(b\,c-a\,d)^2\,\left(c^2+d^2\right)^2\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)-$$
$$\Big(d^3\,\mathrm{Sec}[e+f\,x]^2\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\,\mathrm{Tan}[e+f\,x]\Big)\Big/$$
$$\Big(c\,(c-i\,d)\,(c+i\,d)\,(b\,c-a\,d)\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2\Big)$$

Problem 1221: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])^2\,(c+d\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 290 leaves, 5 steps):

$$\frac{(b\,(c-d)+a\,(c+d))\,(a\,(c-d)-b\,(c+d))\,x}{(a^2+b^2)^2\,(c^2+d^2)^2}+\frac{2\,b^3\,(a\,b\,c-2\,a^2\,d-b^2\,d)\,\mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]}{(a^2+b^2)^2\,(b\,c-a\,d)^3\,f}-\frac{2\,d^3\,(a\,c\,d-b\,(2\,c^2+d^2))\,\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]}{(b\,c-a\,d)^3\,(c^2+d^2)^2\,f}-\frac{d\,(a^2\,d^2+b^2\,(c^2+2\,d^2))}{(a^2+b^2)\,(b\,c-a\,d)^2\,(c^2+d^2)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])}-\frac{b^2}{(a^2+b^2)\,(b\,c-a\,d)\,f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 1994 leaves):

$$\Big(\big(a\,c-b\,c-a\,d-b\,d\big)\ \big(a\,c+b\,c+a\,d-b\,d\big)\ \big(e+f\,x\big)\ \text{Sec}[e+f\,x]^4$$
$$\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big((a-\mathrm{i}\,b)^2\ (a+\mathrm{i}\,b)^2\ (c-\mathrm{i}\,d)^2\ (c+\mathrm{i}\,d)^2\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)-$$
$$\Big(2\,\mathrm{i}\ \big(-a^6\,b^5\,c^{11}+\mathrm{i}\,a^5\,b^6\,c^{11}-a^4\,b^7\,c^{11}+\mathrm{i}\,a^3\,b^8\,c^{11}+3\,a^7\,b^4\,c^{10}\,d-2\,\mathrm{i}\,a^6\,b^5\,c^{10}\,d+5\,a^5\,b^6\,c^{10}\,d-$$
$$3\,\mathrm{i}\,a^4\,b^7\,c^{10}\,d+2\,a^3\,b^8\,c^{10}\,d-\mathrm{i}\,a^2\,b^9\,c^{10}\,d-2\,a^8\,b^3\,c^9\,d^2-\mathrm{i}\,a^7\,b^4\,c^9\,d^2-9\,a^6\,b^5\,c^9\,d^2+$$
$$2\,\mathrm{i}\,a^5\,b^6\,c^9\,d^2-8\,a^4\,b^7\,c^9\,d^2+3\,\mathrm{i}\,a^3\,b^8\,c^9\,d^2-a^2\,b^9\,c^9\,d^2-2\,a^9\,b^2\,c^8\,d^3+4\,\mathrm{i}\,a^8\,b^3\,c^8\,d^3+$$
$$5\,a^7\,b^4\,c^8\,d^3+3\,\mathrm{i}\,a^6\,b^5\,c^8\,d^3+12\,a^5\,b^6\,c^8\,d^3-2\,\mathrm{i}\,a^4\,b^7\,c^8\,d^3+5\,a^3\,b^8\,c^8\,d^3-\mathrm{i}\,a^2\,b^9\,c^8\,d^3+$$
$$3\,a^{10}\,b\,c^7\,d^4-\mathrm{i}\,a^9\,b^2\,c^7\,d^4+5\,a^8\,b^3\,c^7\,d^4-6\,\mathrm{i}\,a^7\,b^4\,c^7\,d^4-6\,a^6\,b^5\,c^7\,d^4-3\,\mathrm{i}\,a^5\,b^6\,c^7\,d^4-$$
$$9\,a^4\,b^7\,c^7\,d^4+2\,\mathrm{i}\,a^3\,b^8\,c^7\,d^4-a^2\,b^9\,c^7\,d^4-a^{11}\,c^6\,d^5-2\,\mathrm{i}\,a^{10}\,b\,c^6\,d^5-9\,a^9\,b^2\,c^6\,d^5+$$
$$3\,\mathrm{i}\,a^8\,b^3\,c^6\,d^5-6\,a^7\,b^4\,c^6\,d^5+6\,\mathrm{i}\,a^6\,b^5\,c^6\,d^5+5\,a^5\,b^6\,c^6\,d^5+\mathrm{i}\,a^4\,b^7\,c^6\,d^5+3\,a^3\,b^8\,c^6\,d^5+$$
$$\mathrm{i}\,a^{11}\,c^5\,d^6+5\,a^{10}\,b\,c^5\,d^6+2\,\mathrm{i}\,a^9\,b^2\,c^5\,d^6+12\,a^8\,b^3\,c^5\,d^6-3\,\mathrm{i}\,a^7\,b^4\,c^5\,d^6+5\,a^6\,b^5\,c^5\,d^6-$$
$$4\,\mathrm{i}\,a^5\,b^6\,c^5\,d^6-2\,a^4\,b^7\,c^5\,d^6-a^{11}\,c^4\,d^7-3\,\mathrm{i}\,a^{10}\,b\,c^4\,d^7-8\,a^9\,b^2\,c^4\,d^7-2\,\mathrm{i}\,a^8\,b^3\,c^4\,d^7-$$
$$9\,a^7\,b^4\,c^4\,d^7+\mathrm{i}\,a^6\,b^5\,c^4\,d^7-2\,a^5\,b^6\,c^4\,d^7+\mathrm{i}\,a^{11}\,c^3\,d^8+2\,a^{10}\,b\,c^3\,d^8+3\,\mathrm{i}\,a^9\,b^2\,c^3\,d^8+5\,a^8\,b^3\,c^3\,d^8+$$
$$2\,\mathrm{i}\,a^7\,b^4\,c^3\,d^8+3\,a^6\,b^5\,c^3\,d^8-\mathrm{i}\,a^{10}\,b\,c^2\,d^9-a^9\,b^2\,c^2\,d^9-\mathrm{i}\,a^8\,b^3\,c^2\,d^9-a^7\,b^4\,c^2\,d^9\big)\ \big(e+f\,x\big)$$
$$\text{Sec}[e+f\,x]^4\ \big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big(a^2\ (a-\mathrm{i}\,b)^4\ (a+\mathrm{i}\,b)^3\ c^2\ (c-\mathrm{i}\,d)^4\ (c+\mathrm{i}\,d)^3\ (-b\,c+a\,d)^4\ f$$
$$\big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)-$$
$$\Big(2\,\mathrm{i}\ \big(-a\,b^4\,c+2\,a^2\,b^3\,d+b^5\,d\big)\ \text{ArcTan}[\text{Tan}[e+f\,x]]\ \text{Sec}[e+f\,x]^4$$
$$\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big(\big(a^2+b^2\big)^2\ (-b\,c+a\,d)^3\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)+$$
$$\Big(2\,\mathrm{i}\ \big(-2\,b\,c^2\,d^3+a\,c\,d^4-b\,d^5\big)\ \text{ArcTan}[\text{Tan}[e+f\,x]]\ \text{Sec}[e+f\,x]^4$$
$$\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big((b\,c-a\,d)^3\ \big(c^2+d^2\big)^2\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)+$$
$$\Big(\big(-a\,b^4\,c+2\,a^2\,b^3\,d+b^5\,d\big)\ \text{Log}\big[\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\big]\ \text{Sec}[e+f\,x]^4$$
$$\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big(\big(a^2+b^2\big)^2\ (-b\,c+a\,d)^3\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)-$$
$$\Big(\big(-2\,b\,c^2\,d^3+a\,c\,d^4-b\,d^5\big)\ \text{Log}\big[\big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\big]\ \text{Sec}[e+f\,x]^4$$
$$\big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\Big)\Big/$$
$$\Big((b\,c-a\,d)^3\ \big(c^2+d^2\big)^2\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)+$$
$$\Big(d^4\,\text{Sec}[e+f\,x]^3\ \big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)^2\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)\ \text{Tan}[e+f\,x]\Big)\Big/$$
$$\Big(c\ (c-\mathrm{i}\,d)\ (c+\mathrm{i}\,d)\ (b\,c-a\,d)^2\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)+$$
$$\Big(b^4\,\text{Sec}[e+f\,x]^3\ \big(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\big)\ \big(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\big)^2\ \text{Tan}[e+f\,x]\Big)\Big/$$
$$\Big(a\ (a-\mathrm{i}\,b)\ (a+\mathrm{i}\,b)\ (-b\,c+a\,d)^2\ f\ \big(a+b\,\text{Tan}[e+f\,x]\big)^2\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2\Big)$$

Problem 1222: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\big(a+b\,\text{Tan}[e+f\,x]\big)^3\ \big(c+d\,\text{Tan}[e+f\,x]\big)^2}\,dx$$

Optimal (type 3, 457 leaves, 6 steps):

$$-\frac{\left(6\,a^2\,b\,c\,d-2\,b^3\,c\,d-a^3\,\left(c^2-d^2\right)+3\,a\,b^2\,\left(c^2-d^2\right)\right)\,x}{\left(a^2+b^2\right)^3\,\left(c^2+d^2\right)^2}-$$

$$\left(b^3\,\left(10\,a^3\,b\,c\,d+2\,a\,b^3\,c\,d-10\,a^4\,d^2+b^4\,\left(c^2-3\,d^2\right)-3\,a^2\,b^2\,\left(c^2+3\,d^2\right)\right)\right.$$
$$\left.\mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]\right)\Big/\left(\left(a^2+b^2\right)^3\,\left(b\,c-a\,d\right)^4\,f\right)-$$

$$\frac{d^4\,\left(5\,b\,c^2-2\,a\,c\,d+3\,b\,d^2\right)\,\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]}{\left(b\,c-a\,d\right)^4\,\left(c^2+d^2\right)^2\,f}+$$

$$\frac{d\,\left(a^4\,d^3-2\,a\,b^3\,c\,\left(c^2+d^2\right)+2\,a^2\,b^2\,d\,\left(2\,c^2+3\,d^2\right)+b^4\,d\,\left(2\,c^2+3\,d^2\right)\right)}{\left(a^2+b^2\right)^2\,\left(b\,c-a\,d\right)^3\,\left(c^2+d^2\right)\,f\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)}-$$

$$\frac{b^2}{2\,\left(a^2+b^2\right)\,\left(b\,c-a\,d\right)\,f\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^2\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)}-$$

$$\frac{b^2\,\left(4\,a\,b\,c-7\,a^2\,d-3\,b^2\,d\right)}{2\,\left(a^2+b^2\right)^2\,\left(b\,c-a\,d\right)^2\,f\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)}$$

Result (type 3, 6824 leaves):

$$\left(\left(3\,a^9\,b^7\,c^{13}-3\,\mathrm{i}\,a^8\,b^8\,c^{13}+5\,a^7\,b^9\,c^{13}-5\,\mathrm{i}\,a^6\,b^{10}\,c^{13}+a^5\,b^{11}\,c^{13}-\mathrm{i}\,a^4\,b^{12}\,c^{13}-a^3\,b^{13}\,c^{13}+\mathrm{i}\,a^2\,b^{14}\,c^{13}-\right.\right.$$
$$16\,a^{10}\,b^6\,c^{12}\,d+13\,\mathrm{i}\,a^9\,b^7\,c^{12}\,d-35\,a^8\,b^8\,c^{12}\,d+27\,\mathrm{i}\,a^7\,b^9\,c^{12}\,d-21\,a^6\,b^{10}\,c^{12}\,d+$$
$$15\,\mathrm{i}\,a^5\,b^{11}\,c^{12}\,d-a^4\,b^{12}\,c^{12}\,d+\mathrm{i}\,a^3\,b^{13}\,c^{12}\,d+a^2\,b^{14}\,c^{12}\,d+33\,a^{11}\,b^5\,c^{11}\,d^2-17\,\mathrm{i}\,a^{10}\,b^6\,c^{11}\,d^2+$$
$$103\,a^9\,b^7\,c^{11}\,d^2-55\,\mathrm{i}\,a^8\,b^8\,c^{11}\,d^2+107\,a^7\,b^9\,c^{11}\,d^2-59\,\mathrm{i}\,a^6\,b^{10}\,c^{11}\,d^2+37\,a^5\,b^{11}\,c^{11}\,d^2-$$
$$21\,\mathrm{i}\,a^4\,b^{12}\,c^{11}\,d^2-30\,a^{12}\,b^4\,c^{10}\,d^3-3\,\mathrm{i}\,a^{11}\,b^5\,c^{10}\,d^3-161\,a^{10}\,b^6\,c^{10}\,d^3+41\,\mathrm{i}\,a^9\,b^7\,c^{10}\,d^3-$$
$$259\,a^8\,b^8\,c^{10}\,d^3+97\,\mathrm{i}\,a^7\,b^9\,c^{10}\,d^3-155\,a^6\,b^{10}\,c^{10}\,d^3+59\,\mathrm{i}\,a^5\,b^{11}\,c^{10}\,d^3-27\,a^4\,b^{12}\,c^{10}\,d^3+$$
$$6\,\mathrm{i}\,a^3\,b^{13}\,c^{10}\,d^3+5\,a^{13}\,b^3\,c^9\,d^4+25\,\mathrm{i}\,a^{12}\,b^4\,c^9\,d^4+133\,a^{11}\,b^5\,c^9\,d^4+25\,\mathrm{i}\,a^{10}\,b^6\,c^9\,d^4+$$
$$352\,a^9\,b^7\,c^9\,d^4-52\,\mathrm{i}\,a^8\,b^8\,c^9\,d^4+332\,a^7\,b^9\,c^9\,d^4-80\,\mathrm{i}\,a^6\,b^{10}\,c^9\,d^4+115\,a^5\,b^{11}\,c^9\,d^4-$$
$$29\,\mathrm{i}\,a^4\,b^{12}\,c^9\,d^4+7\,a^3\,b^{13}\,c^9\,d^4-\mathrm{i}\,a^2\,b^{14}\,c^9\,d^4+12\,a^{14}\,b^2\,c^8\,d^5-17\,\mathrm{i}\,a^{13}\,b^3\,c^8\,d^5-35\,a^{12}\,b^4\,c^8\,d^5-$$
$$73\,\mathrm{i}\,a^{11}\,b^5\,c^8\,d^5-271\,a^{10}\,b^6\,c^8\,d^5-56\,\mathrm{i}\,a^9\,b^7\,c^8\,d^5-428\,a^8\,b^8\,c^8\,d^5+44\,\mathrm{i}\,a^7\,b^9\,c^8\,d^5-$$
$$244\,a^6\,b^{10}\,c^8\,d^5+49\,\mathrm{i}\,a^5\,b^{11}\,c^8\,d^5-41\,a^4\,b^{12}\,c^8\,d^5+5\,\mathrm{i}\,a^3\,b^{13}\,c^8\,d^5-a^2\,b^{14}\,c^8\,d^5-9\,a^{15}\,b\,c^7\,d^6-$$
$$3\,\mathrm{i}\,a^{14}\,b^2\,c^7\,d^6-35\,a^{13}\,b^3\,c^7\,d^6+53\,\mathrm{i}\,a^{12}\,b^4\,c^7\,d^6+86\,a^{11}\,b^5\,c^7\,d^6+112\,\mathrm{i}\,a^{10}\,b^6\,c^7\,d^6+$$
$$328\,a^9\,b^7\,c^7\,d^6+44\,\mathrm{i}\,a^8\,b^8\,c^7\,d^6+309\,a^7\,b^9\,c^7\,d^6-21\,\mathrm{i}\,a^6\,b^{10}\,c^7\,d^6+99\,a^5\,b^{11}\,c^7\,d^6-$$
$$9\,\mathrm{i}\,a^4\,b^{12}\,c^7\,d^6+6\,a^3\,b^{13}\,c^7\,d^6+2\,a^{16}\,c^6\,d^7+7\,\mathrm{i}\,a^{15}\,b\,c^6\,d^7+37\,a^{14}\,b^2\,c^6\,d^7-5\,\mathrm{i}\,a^{13}\,b^3\,c^6\,d^7+$$
$$43\,a^{12}\,b^4\,c^6\,d^7-76\,\mathrm{i}\,a^{11}\,b^5\,c^6\,d^7-112\,a^{10}\,b^6\,c^6\,d^7-104\,\mathrm{i}\,a^9\,b^7\,c^6\,d^7-230\,a^8\,b^8\,c^6\,d^7-$$
$$35\,\mathrm{i}\,a^7\,b^9\,c^6\,d^7-125\,a^6\,b^{10}\,c^6\,d^7+5\,\mathrm{i}\,a^5\,b^{11}\,c^6\,d^7-15\,a^4\,b^{12}\,c^6\,d^7-2\,\mathrm{i}\,a^{16}\,c^5\,d^8-14\,a^{15}\,b\,c^5\,d^8-$$
$$16\,\mathrm{i}\,a^{14}\,b^2\,c^5\,d^8-61\,a^{13}\,b^3\,c^5\,d^8+13\,\mathrm{i}\,a^{12}\,b^4\,c^5\,d^8-35\,a^{11}\,b^5\,c^5\,d^8+71\,\mathrm{i}\,a^{10}\,b^6\,c^5\,d^8+$$
$$77\,a^9\,b^7\,c^5\,d^8+49\,\mathrm{i}\,a^8\,b^8\,c^5\,d^8+85\,a^7\,b^9\,c^5\,d^8+5\,\mathrm{i}\,a^6\,b^{10}\,c^5\,d^8+20\,a^5\,b^{11}\,c^5\,d^8+2\,a^{16}\,c^4\,d^9+$$
$$10\,\mathrm{i}\,a^{15}\,b\,c^4\,d^9+28\,a^{14}\,b^2\,c^4\,d^9+17\,\mathrm{i}\,a^{13}\,b^3\,c^4\,d^9+53\,a^{12}\,b^4\,c^4\,d^9-5\,\mathrm{i}\,a^{11}\,b^5\,c^4\,d^9+$$
$$15\,a^{10}\,b^6\,c^4\,d^9-21\,\mathrm{i}\,a^9\,b^7\,c^4\,d^9-27\,a^8\,b^8\,c^4\,d^9-9\,\mathrm{i}\,a^7\,b^9\,c^4\,d^9-15\,a^6\,b^{10}\,c^4\,d^9-2\,\mathrm{i}\,a^{16}\,c^3\,d^{10}-$$
$$5\,a^{15}\,b\,c^3\,d^{10}-13\,\mathrm{i}\,a^{14}\,b^2\,c^3\,d^{10}-21\,a^{13}\,b^3\,c^3\,d^{10}-15\,\mathrm{i}\,a^{12}\,b^4\,c^3\,d^{10}-21\,a^{11}\,b^5\,c^3\,d^{10}+$$
$$\mathrm{i}\,a^{10}\,b^6\,c^3\,d^{10}+a^9\,b^7\,c^3\,d^{10}+5\,\mathrm{i}\,a^8\,b^8\,c^3\,d^{10}+6\,a^7\,b^9\,c^3\,d^{10}+3\,\mathrm{i}\,a^{15}\,b\,c^2\,d^{11}+3\,a^{14}\,b^2\,c^2\,d^{11}+$$
$$\left.5\,\mathrm{i}\,a^{13}\,b^3\,c^2\,d^{11}+5\,a^{12}\,b^4\,c^2\,d^{11}+\mathrm{i}\,a^{11}\,b^5\,c^2\,d^{11}+a^{10}\,b^6\,c^2\,d^{11}-\mathrm{i}\,a^9\,b^7\,c^2\,d^{11}-a^8\,b^8\,c^2\,d^{11}\right)$$
$$\left(e+f\,x\right)\,\mathrm{Sec}[e+f\,x]^5\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3$$
$$\left.\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2\right)\Big/$$
$$\left(a^2\,\left(\mathrm{i}\,a-b\right)^3\,\left(a-\mathrm{i}\,b\right)^6\,\left(a+\mathrm{i}\,b\right)^2\,c^2\,\left(c-\mathrm{i}\,d\right)^4\,\left(c+\mathrm{i}\,d\right)^3\,\left(-b\,c+a\,d\right)^6\right.$$
$$\left.f\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^2\right)-$$
$$\left(\mathrm{i}\,\left(3\,a^2\,b^5\,c^2-b^7\,c^2-10\,a^3\,b^4\,c\,d-2\,a\,b^6\,c\,d+10\,a^4\,b^3\,d^2+9\,a^2\,b^5\,d^2+3\,b^7\,d^2\right)\right.$$
$$\mathrm{ArcTan}[\mathrm{Tan}[e+f\,x]]\,\mathrm{Sec}[e+f\,x]^5\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3$$

$$\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\Big)\Big/$$
$$\left(\left(a^2+b^2\right)^3\left(-b\,c+a\,d\right)^4 f\left(a+b\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)^2\right)-$$
$$\Big(\mathrm{i}\left(-5\,b\,c^2\,d^4+2\,a\,c\,d^5-3\,b\,d^6\right)\text{ArcTan}[\text{Tan}[e+f\,x]]\,\text{Sec}[e+f\,x]^5$$
$$\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\Big)\Big/$$
$$\left(\left(b\,c-a\,d\right)^4\left(c^2+d^2\right)^2 f\left(a+b\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)^2\right)+$$
$$\Big(\left(3\,a^2\,b^5\,c^2-b^7\,c^2-10\,a^3\,b^4\,c\,d-2\,a\,b^6\,c\,d+10\,a^4\,b^3\,d^2+9\,a^2\,b^5\,d^2+3\,b^7\,d^2\right)$$
$$\text{Log}\left[\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^2\right]\text{Sec}[e+f\,x]^5$$
$$\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\Big)\Big/$$
$$\left(2\left(a^2+b^2\right)^3\left(-b\,c+a\,d\right)^4 f\left(a+b\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)^2\right)+$$
$$\Big(\left(-5\,b\,c^2\,d^4+2\,a\,c\,d^5-3\,b\,d^6\right)\text{Log}\left[\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right]\text{Sec}[e+f\,x]^5$$
$$\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\Big)\Big/$$
$$\left(2\left(b\,c-a\,d\right)^4\left(c^2+d^2\right)^2 f\left(a+b\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)^2\right)+$$
$$\Big(\text{Sec}[e+f\,x]^5\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)$$
$$\Big(-a^3\,b^6\,c^7\,\text{Cos}[e+f\,x]-a\,b^8\,c^7\,\text{Cos}[e+f\,x]+2\,a^2\,b^7\,c^6\,d\,\text{Cos}[e+f\,x]+2\,b^9\,c^6\,d\,\text{Cos}[e+f\,x]+$$
$$5\,a^5\,b^4\,c^5\,d^2\,\text{Cos}[e+f\,x]+5\,a^3\,b^6\,c^5\,d^2\,\text{Cos}[e+f\,x]+4\,a^2\,b^7\,c^4\,d^3\,\text{Cos}[e+f\,x]+$$
$$4\,b^9\,c^4\,d^3\,\text{Cos}[e+f\,x]+10\,a^5\,b^4\,c^3\,d^4\,\text{Cos}[e+f\,x]+13\,a^3\,b^6\,c^3\,d^4\,\text{Cos}[e+f\,x]+$$
$$3\,a\,b^8\,c^3\,d^4\,\text{Cos}[e+f\,x]+2\,a^8\,b\,c^2\,d^5\,\text{Cos}[e+f\,x]+6\,a^6\,b^3\,c^2\,d^5\,\text{Cos}[e+f\,x]+$$
$$6\,a^4\,b^5\,c^2\,d^5\,\text{Cos}[e+f\,x]+4\,a^2\,b^7\,c^2\,d^5\,\text{Cos}[e+f\,x]+2\,b^9\,c^2\,d^5\,\text{Cos}[e+f\,x]+$$
$$5\,a^5\,b^4\,c\,d^6\,\text{Cos}[e+f\,x]+7\,a^3\,b^6\,c\,d^6\,\text{Cos}[e+f\,x]+2\,a\,b^8\,c\,d^6\,\text{Cos}[e+f\,x]+$$
$$2\,a^8\,b\,d^7\,\text{Cos}[e+f\,x]+6\,a^6\,b^3\,d^7\,\text{Cos}[e+f\,x]+6\,a^4\,b^5\,d^7\,\text{Cos}[e+f\,x]+$$
$$2\,a^2\,b^7\,d^7\,\text{Cos}[e+f\,x]-3\,a^6\,b^3\,c^7\left(e+f\,x\right)\text{Cos}[e+f\,x]+8\,a^4\,b^5\,c^7\left(e+f\,x\right)\text{Cos}[e+f\,x]+$$
$$3\,a^2\,b^7\,c^7\left(e+f\,x\right)\text{Cos}[e+f\,x]+9\,a^7\,b^2\,c^6\,d\left(e+f\,x\right)\text{Cos}[e+f\,x]-$$
$$8\,a^5\,b^4\,c^6\,d\left(e+f\,x\right)\text{Cos}[e+f\,x]-3\,a^3\,b^6\,c^6\,d\left(e+f\,x\right)\text{Cos}[e+f\,x]-$$
$$2\,a\,b^8\,c^6\,d\left(e+f\,x\right)\text{Cos}[e+f\,x]-9\,a^8\,b\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[e+f\,x]-$$
$$21\,a^6\,b^3\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[e+f\,x]-5\,a^4\,b^5\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[e+f\,x]-$$
$$a^2\,b^7\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[e+f\,x]+3\,a^9\,c^4\,d^3\left(e+f\,x\right)\text{Cos}[e+f\,x]+$$
$$31\,a^7\,b^2\,c^4\,d^3\left(e+f\,x\right)\text{Cos}[e+f\,x]+5\,a^5\,b^4\,c^4\,d^3\left(e+f\,x\right)\text{Cos}[e+f\,x]+$$
$$9\,a^3\,b^6\,c^4\,d^3\left(e+f\,x\right)\text{Cos}[e+f\,x]-7\,a^8\,b\,c^3\,d^4\left(e+f\,x\right)\text{Cos}[e+f\,x]-$$
$$a^4\,b^5\,c^3\,d^4\left(e+f\,x\right)\text{Cos}[e+f\,x]-3\,a^9\,c^2\,d^5\left(e+f\,x\right)\text{Cos}[e+f\,x]+2\,a^7\,b^2\,c^2\,d^5\left(e+f\,x\right)$$
$$\text{Cos}[e+f\,x]-11\,a^5\,b^4\,c^2\,d^5\left(e+f\,x\right)\text{Cos}[e+f\,x]-2\,a^8\,b\,c\,d^6\left(e+f\,x\right)\text{Cos}[e+f\,x]+$$
$$6\,a^6\,b^3\,c\,d^6\left(e+f\,x\right)\text{Cos}[e+f\,x]+3\,a^3\,b^6\,c^7\,\text{Cos}[3\left(e+f\,x\right)]+3\,a\,b^8\,c^7\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$2\,a^4\,b^5\,c^6\,d\,\text{Cos}[3\left(e+f\,x\right)]-4\,a^2\,b^7\,c^6\,d\,\text{Cos}[3\left(e+f\,x\right)]-2\,b^9\,c^6\,d\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$5\,a^5\,b^4\,c^5\,d^2\,\text{Cos}[3\left(e+f\,x\right)]-a^3\,b^6\,c^5\,d^2\,\text{Cos}[3\left(e+f\,x\right)]+4\,a\,b^8\,c^5\,d^2\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$4\,a^4\,b^5\,c^4\,d^3\,\text{Cos}[3\left(e+f\,x\right)]-8\,a^2\,b^7\,c^4\,d^3\,\text{Cos}[3\left(e+f\,x\right)]-4\,b^9\,c^4\,d^3\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$10\,a^5\,b^4\,c^3\,d^4\,\text{Cos}[3\left(e+f\,x\right)]-11\,a^3\,b^6\,c^3\,d^4\,\text{Cos}[3\left(e+f\,x\right)]-a\,b^8\,c^3\,d^4\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$2\,a^8\,b\,c^2\,d^5\,\text{Cos}[3\left(e+f\,x\right)]-6\,a^6\,b^3\,c^2\,d^5\,\text{Cos}[3\left(e+f\,x\right)]-8\,a^4\,b^5\,c^2\,d^5\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$6\,a^2\,b^7\,c^2\,d^5\,\text{Cos}[3\left(e+f\,x\right)]-2\,b^9\,c^2\,d^5\,\text{Cos}[3\left(e+f\,x\right)]-5\,a^5\,b^4\,c\,d^6\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$7\,a^3\,b^6\,c\,d^6\,\text{Cos}[3\left(e+f\,x\right)]-2\,a\,b^8\,c\,d^6\,\text{Cos}[3\left(e+f\,x\right)]-2\,a^8\,b\,d^7\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$6\,a^6\,b^3\,d^7\,\text{Cos}[3\left(e+f\,x\right)]-6\,a^4\,b^5\,d^7\,\text{Cos}[3\left(e+f\,x\right)]-2\,a^2\,b^7\,d^7\,\text{Cos}[3\left(e+f\,x\right)]-$$
$$a^6\,b^3\,c^7\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]+4\,a^4\,b^5\,c^7\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]-$$
$$3\,a^2\,b^7\,c^7\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]+3\,a^7\,b^2\,c^6\,d\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]-$$
$$4\,a^5\,b^4\,c^6\,d\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]-5\,a^3\,b^6\,c^6\,d\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]+$$
$$2\,a\,b^8\,c^6\,d\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]-3\,a^8\,b\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]-$$
$$11\,a^6\,b^3\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]+17\,a^4\,b^5\,c^5\,d^2\left(e+f\,x\right)\text{Cos}[3\left(e+f\,x\right)]+$$

$$a^2 b^7 c^5 d^2 (e+f x) \text{Cos}[3 (e+f x)] + a^9 c^4 d^3 (e+f x) \text{Cos}[3 (e+f x)] +$$
$$17 a^7 b^2 c^4 d^3 (e+f x) \text{Cos}[3 (e+f x)] + 7 a^5 b^4 c^4 d^3 (e+f x) \text{Cos}[3 (e+f x)] -$$
$$9 a^3 b^6 c^4 d^3 (e+f x) \text{Cos}[3 (e+f x)] - 5 a^8 b c^3 d^4 (e+f x) \text{Cos}[3 (e+f x)] -$$
$$28 a^6 b^3 c^3 d^4 (e+f x) \text{Cos}[3 (e+f x)] + a^4 b^5 c^3 d^4 (e+f x) \text{Cos}[3 (e+f x)] -$$
$$a^9 c^2 d^5 (e+f x) \text{Cos}[3 (e+f x)] + 10 a^7 b^2 c^2 d^5 (e+f x) \text{Cos}[3 (e+f x)] +$$
$$11 a^5 b^4 c^2 d^5 (e+f x) \text{Cos}[3 (e+f x)] + 2 a^8 b c d^6 (e+f x) \text{Cos}[3 (e+f x)] -$$
$$6 a^6 b^3 c d^6 (e+f x) \text{Cos}[3 (e+f x)] - 3 a^4 b^5 c^7 \text{Sin}[e+f x] - 3 a^2 b^7 c^7 \text{Sin}[e+f x] +$$
$$5 a^5 b^4 c^6 d \text{Sin}[e+f x] - 5 a b^8 c^6 d \text{Sin}[e+f x] + 7 a^4 b^5 c^5 d^2 \text{Sin}[e+f x] +$$
$$13 a^2 b^7 c^5 d^2 \text{Sin}[e+f x] + 6 b^9 c^5 d^2 \text{Sin}[e+f x] + 10 a^5 b^4 c^4 d^3 \text{Sin}[e+f x] -$$
$$10 a b^8 c^4 d^3 \text{Sin}[e+f x] + 23 a^4 b^5 c^3 d^4 \text{Sin}[e+f x] + 35 a^2 b^7 c^3 d^4 \text{Sin}[e+f x] +$$
$$12 b^9 c^3 d^4 \text{Sin}[e+f x] + a^9 c^2 d^5 \text{Sin}[e+f x] + 6 a^7 b^2 c^2 d^5 \text{Sin}[e+f x] +$$
$$17 a^5 b^4 c^2 d^5 \text{Sin}[e+f x] + 10 a^3 b^6 c^2 d^5 \text{Sin}[e+f x] - 2 a b^8 c^2 d^5 \text{Sin}[e+f x] +$$
$$13 a^4 b^5 c d^6 \text{Sin}[e+f x] + 19 a^2 b^7 c d^6 \text{Sin}[e+f x] + 6 b^9 c d^6 \text{Sin}[e+f x] +$$
$$a^9 d^7 \text{Sin}[e+f x] + 6 a^7 b^2 d^7 \text{Sin}[e+f x] + 12 a^5 b^4 d^7 \text{Sin}[e+f x] + 10 a^3 b^6 d^7 \text{Sin}[e+f x] +$$
$$3 a b^8 d^7 \text{Sin}[e+f x] - 2 a^5 b^4 c^7 (e+f x) \text{Sin}[e+f x] + 6 a^3 b^6 c^7 (e+f x) \text{Sin}[e+f x] +$$
$$5 a^6 b^3 c^6 d (e+f x) \text{Sin}[e+f x] - 6 a^4 b^5 c^6 d (e+f x) \text{Sin}[e+f x] +$$
$$5 a^2 b^7 c^6 d (e+f x) \text{Sin}[e+f x] - 3 a^7 b^2 c^5 d^2 (e+f x) \text{Sin}[e+f x] -$$
$$10 a^5 b^4 c^5 d^2 (e+f x) \text{Sin}[e+f x] - 5 a^3 b^6 c^5 d^2 (e+f x) \text{Sin}[e+f x] -$$
$$6 a b^8 c^5 d^2 (e+f x) \text{Sin}[e+f x] - a^8 b c^4 d^3 (e+f x) \text{Sin}[e+f x] +$$
$$7 a^6 b^3 c^4 d^3 (e+f x) \text{Sin}[e+f x] - 15 a^4 b^5 c^4 d^3 (e+f x) \text{Sin}[e+f x] +$$
$$9 a^2 b^7 c^4 d^3 (e+f x) \text{Sin}[e+f x] + a^9 c^3 d^4 (e+f x) \text{Sin}[e+f x] +$$
$$9 a^7 b^2 c^3 d^4 (e+f x) \text{Sin}[e+f x] + 25 a^5 b^4 c^3 d^4 (e+f x) \text{Sin}[e+f x] +$$
$$9 a^3 b^6 c^3 d^4 (e+f x) \text{Sin}[e+f x] - 5 a^8 b c^2 d^5 (e+f x) \text{Sin}[e+f x] -$$
$$10 a^6 b^3 c^2 d^5 (e+f x) \text{Sin}[e+f x] - 21 a^4 b^5 c^2 d^5 (e+f x) \text{Sin}[e+f x] -$$
$$a^9 c d^6 (e+f x) \text{Sin}[e+f x] + 9 a^5 b^4 c d^6 (e+f x) \text{Sin}[e+f x] -$$
$$3 a^4 b^5 c^7 \text{Sin}[3 (e+f x)] - 3 a^2 b^7 c^7 \text{Sin}[3 (e+f x)] + 5 a^5 b^4 c^6 d \text{Sin}[3 (e+f x)] +$$
$$10 a^3 b^6 c^6 d \text{Sin}[3 (e+f x)] + 5 a b^8 c^6 d \text{Sin}[3 (e+f x)] - 11 a^4 b^5 c^5 d^2 \text{Sin}[3 (e+f x)] -$$
$$13 a^2 b^7 c^5 d^2 \text{Sin}[3 (e+f x)] - 2 b^9 c^5 d^2 \text{Sin}[3 (e+f x)] + 10 a^5 b^4 c^4 d^3 \text{Sin}[3 (e+f x)] +$$
$$20 a^3 b^6 c^4 d^3 \text{Sin}[3 (e+f x)] + 10 a b^8 c^4 d^3 \text{Sin}[3 (e+f x)] - 13 a^4 b^5 c^3 d^4 \text{Sin}[3 (e+f x)] -$$
$$17 a^2 b^7 c^3 d^4 \text{Sin}[3 (e+f x)] - 4 b^9 c^3 d^4 \text{Sin}[3 (e+f x)] + a^9 c^2 d^5 \text{Sin}[3 (e+f x)] +$$
$$2 a^7 b^2 c^2 d^5 \text{Sin}[3 (e+f x)] + 5 a^5 b^4 c^2 d^5 \text{Sin}[3 (e+f x)] + 8 a^3 b^6 c^2 d^5 \text{Sin}[3 (e+f x)] +$$
$$4 a b^8 c^2 d^5 \text{Sin}[3 (e+f x)] - 5 a^4 b^5 c d^6 \text{Sin}[3 (e+f x)] - 7 a^2 b^7 c d^6 \text{Sin}[3 (e+f x)] -$$
$$2 b^9 c d^6 \text{Sin}[3 (e+f x)] + a^9 d^7 \text{Sin}[3 (e+f x)] + 2 a^7 b^2 d^7 \text{Sin}[3 (e+f x)] -$$
$$2 a^3 b^6 d^7 \text{Sin}[3 (e+f x)] - a b^8 d^7 \text{Sin}[3 (e+f x)] - 2 a^5 b^4 c^7 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$6 a^3 b^6 c^7 (e+f x) \text{Sin}[3 (e+f x)] + 5 a^6 b^3 c^6 d (e+f x) \text{Sin}[3 (e+f x)] -$$
$$2 a^4 b^5 c^6 d (e+f x) \text{Sin}[3 (e+f x)] - 7 a^2 b^7 c^6 d (e+f x) \text{Sin}[3 (e+f x)] -$$
$$3 a^7 b^2 c^5 d^2 (e+f x) \text{Sin}[3 (e+f x)] - 22 a^5 b^4 c^5 d^2 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$7 a^3 b^6 c^5 d^2 (e+f x) \text{Sin}[3 (e+f x)] + 2 a b^8 c^5 d^2 (e+f x) \text{Sin}[3 (e+f x)] -$$
$$a^8 b c^4 d^3 (e+f x) \text{Sin}[3 (e+f x)] + 19 a^6 b^3 c^4 d^3 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$17 a^4 b^5 c^4 d^3 (e+f x) \text{Sin}[3 (e+f x)] - 3 a^2 b^7 c^4 d^3 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$a^9 c^3 d^4 (e+f x) \text{Sin}[3 (e+f x)] + 5 a^7 b^2 c^3 d^4 (e+f x) \text{Sin}[3 (e+f x)] -$$
$$23 a^5 b^4 c^3 d^4 (e+f x) \text{Sin}[3 (e+f x)] - 3 a^3 b^6 c^3 d^4 (e+f x) \text{Sin}[3 (e+f x)] -$$
$$5 a^8 b c^2 d^5 (e+f x) \text{Sin}[3 (e+f x)] + 2 a^6 b^3 c^2 d^5 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$7 a^4 b^5 c^2 d^5 (e+f x) \text{Sin}[3 (e+f x)] - a^9 c d^6 (e+f x) \text{Sin}[3 (e+f x)] +$$
$$4 a^7 b^2 c d^6 (e+f x) \text{Sin}[3 (e+f x)] - 3 a^5 b^4 c d^6 (e+f x) \text{Sin}[3 (e+f x)]\,]\,)\,)\Big/$$
$$\Big(4 a (a - i b)^3 (a + i b)^3 c (c - i d)^2 (c + i d)^2 (-b c + a d)^3 f$$

$$\left(a+b\,\text{Tan}[e+f\,x]\right)^3\left(c+d\,\text{Tan}[e+f\,x]\right)^2\Big)$$

Problem 1223: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[e+f\,x]\right)^4}{\left(c+d\,\text{Tan}[e+f\,x]\right)^3}\,dx$$

Optimal (type 3, 406 leaves, 6 steps):

$$-\frac{1}{\left(c^2+d^2\right)^3}\left(6\,a^2\,b^2\,c\,\left(c^2-3\,d^2\right)-b^4\,c\,\left(c^2-3\,d^2\right)-4\,a^3\,b\,d\,\left(3\,c^2-d^2\right)+4\,a\,b^3\,d\,\left(3\,c^2-d^2\right)-a^4\,\left(c^3-3\,c\,d^2\right)\right)\,x-$$
$$\frac{1}{\left(c^2+d^2\right)^3\,f}\left(4\,a^3\,b\,c\,\left(c^2-3\,d^2\right)-4\,a\,b^3\,c\,\left(c^2-3\,d^2\right)+6\,a^2\,b^2\,d\,\left(3\,c^2-d^2\right)-\right.$$
$$\left.b^4\,d\,\left(3\,c^2-d^2\right)-a^4\,\left(3\,c^2\,d-d^3\right)\right)\,\text{Log}[\text{Cos}[e+f\,x]]+\frac{1}{d^3\,\left(c^2+d^2\right)^3\,f}$$
$$\left(b\,c-a\,d\right)^2\,\left(a^2\,d^2\,\left(3\,c^2-d^2\right)+2\,a\,b\,c\,d\,\left(c^2+5\,d^2\right)+b^2\,\left(c^4+3\,c^2\,d^2+6\,d^4\right)\right)\,\text{Log}[c+d\,\text{Tan}[e+f\,x]]-$$
$$\frac{\left(b\,c-a\,d\right)^2\,\left(a+b\,\text{Tan}[e+f\,x]\right)^2}{2\,d\,\left(c^2+d^2\right)\,f\,\left(c+d\,\text{Tan}[e+f\,x]\right)^2}+\frac{\left(b\,c-a\,d\right)^3\,\left(2\,a\,c\,d+b\,\left(c^2+3\,d^2\right)\right)}{d^3\,\left(c^2+d^2\right)^2\,f\,\left(c+d\,\text{Tan}[e+f\,x]\right)}$$

Result (type 3, 2775 leaves):

$$\Big(\Big(i\,b^4\,c^{13}\,d^2+b^4\,c^{12}\,d^3+5\,i\,b^4\,c^{11}\,d^4-4\,i\,a^3\,b\,c^{10}\,d^5+4\,i\,a\,b^3\,c^{10}\,d^5+5\,b^4\,c^{10}\,d^5+$$
$$3\,i\,a^4\,c^9\,d^6-4\,a^3\,b\,c^9\,d^6-18\,i\,a^2\,b^2\,c^9\,d^6+4\,a\,b^3\,c^9\,d^6+13\,i\,b^4\,c^9\,d^6+3\,a^4\,c^8\,d^7+$$
$$4\,i\,a^3\,b\,c^8\,d^7-18\,a^2\,b^2\,c^8\,d^7-4\,i\,a\,b^3\,c^8\,d^7+13\,b^4\,c^8\,d^7+5\,i\,a^4\,c^7\,d^8+4\,a^3\,b\,c^7\,d^8-$$
$$30\,i\,a^2\,b^2\,c^7\,d^8-4\,a\,b^3\,c^7\,d^8+15\,i\,b^4\,c^7\,d^8+5\,a^4\,c^6\,d^9+20\,i\,a^3\,b\,c^6\,d^9-30\,a^2\,b^2\,c^6\,d^9-$$
$$20\,i\,a\,b^3\,c^6\,d^9+15\,b^4\,c^6\,d^9+i\,a^4\,c^5\,d^{10}+20\,a^3\,b\,c^5\,d^{10}-6\,i\,a^2\,b^2\,c^5\,d^{10}-20\,a\,b^3\,c^5\,d^{10}+$$
$$6\,i\,b^4\,c^5\,d^{10}+a^4\,c^4\,d^{11}+12\,i\,a^3\,b\,c^4\,d^{11}-6\,a^2\,b^2\,c^4\,d^{11}-12\,i\,a\,b^3\,c^4\,d^{11}+6\,b^4\,c^4\,d^{11}-$$
$$i\,a^4\,c^3\,d^{12}+12\,a^3\,b\,c^3\,d^{12}+6\,i\,a^2\,b^2\,c^3\,d^{12}-12\,a\,b^3\,c^3\,d^{12}-a^4\,c^2\,d^{13}+6\,a^2\,b^2\,c^2\,d^{13}\Big)$$
$$\left(e+f\,x\right)\,\text{Cos}[e+f\,x]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^4\Big)\Big/$$
$$\left(c^2\,\left(c-i\,d\right)^6\,\left(c+i\,d\right)^5\,d^5\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^4\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)-$$
$$\Big(i\,\left(b^4\,c^6+3\,b^4\,c^4\,d^2-4\,a^3\,b\,c^3\,d^3+4\,a\,b^3\,c^3\,d^3+3\,a^4\,c^2\,d^4-18\,a^2\,b^2\,c^2\,d^4+\right.$$
$$\left.6\,b^4\,c^2\,d^4+12\,a^3\,b\,c\,d^5-12\,a\,b^3\,c\,d^5-a^4\,d^6+6\,a^2\,b^2\,d^6\right)\,\text{ArcTan}[\text{Tan}[e+f\,x]]$$
$$\text{Cos}[e+f\,x]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^4\Big)\Big/$$
$$\left(d^3\,\left(c^2+d^2\right)^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^4\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)-$$
$$\left(b^4\,\text{Cos}[e+f\,x]\,\text{Log}[\text{Cos}[e+f\,x]]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^4\right)\Big/$$
$$\left(d^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^4\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\left(b^4\,c^6+3\,b^4\,c^4\,d^2-4\,a^3\,b\,c^3\,d^3+4\,a\,b^3\,c^3\,d^3+3\,a^4\,c^2\,d^4-18\,a^2\,b^2\,c^2\,d^4+\right.$$
$$\left.6\,b^4\,c^2\,d^4+12\,a^3\,b\,c\,d^5-12\,a\,b^3\,c\,d^5-a^4\,d^6+6\,a^2\,b^2\,d^6\right)\,\text{Cos}[e+f\,x]$$
$$\text{Log}\left[\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^4\Big)\Big/$$
$$\left(2\,d^3\,\left(c^2+d^2\right)^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^4\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\text{Cos}[e+f\,x]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)$$

$$\Big(-2 b^4 c^7 d+4 a b^3 c^6 d^2-6 b^4 c^5 d^3-4 a^3 b c^4 d^4+16 a b^3 c^4 d^4+2 a^4 c^3 d^5-12 a^2 b^2 c^3 d^5-4 b^4 c^3 d^5+12 a b^3 c^2 d^6+2 a^4 c d^7-12 a^2 b^2 c d^7+4 a^3 b d^8+a^4 c^6 d^2 (e+f x)-6 a^2 b^2 c^6 d^2 (e+f x)+b^4 c^6 d^2 (e+f x)+12 a^3 b c^5 d^3 (e+f x)-12 a b^3 c^5 d^3 (e+f x)-2 a^4 c^4 d^4 (e+f x)+12 a^2 b^2 c^4 d^4 (e+f x)-2 b^4 c^4 d^4 (e+f x)+8 a^3 b c^3 d^5 (e+f x)-8 a b^3 c^3 d^5 (e+f x)-3 a^4 c^2 d^6 (e+f x)+18 a^2 b^2 c^2 d^6 (e+f x)-3 b^4 c^2 d^6 (e+f x)-4 a^3 b c d^7 (e+f x)+4 a b^3 c d^7 (e+f x)+b^4 c^7 d \operatorname{Cos}[2 (e+f x)]-6 a^2 b^2 c^5 d^3 \operatorname{Cos}[2 (e+f x)]+5 b^4 c^5 d^3 \operatorname{Cos}[2 (e+f x)]+8 a^3 b c^4 d^4 \operatorname{Cos}[2 (e+f x)]-12 a b^3 c^4 d^4 \operatorname{Cos}[2 (e+f x)]-3 a^4 c^3 d^5 \operatorname{Cos}[2 (e+f x)]+6 a^2 b^2 c^3 d^5 \operatorname{Cos}[2 (e+f x)]+4 b^4 c^3 d^5 \operatorname{Cos}[2 (e+f x)]+4 a^3 b c^2 d^6 \operatorname{Cos}[2 (e+f x)]-12 a b^3 c^2 d^6 \operatorname{Cos}[2 (e+f x)]-3 a^4 c d^7 \operatorname{Cos}[2 (e+f x)]+12 a^2 b^2 c d^7 \operatorname{Cos}[2 (e+f x)]-4 a^3 b d^8 \operatorname{Cos}[2 (e+f x)]+a^4 c^6 d^2 (e+f x) \operatorname{Cos}[2 (e+f x)]-6 a^2 b^2 c^6 d^2 (e+f x) \operatorname{Cos}[2 (e+f x)]+b^4 c^6 d^2 (e+f x) \operatorname{Cos}[2 (e+f x)]+12 a^3 b c^5 d^3 (e+f x) \operatorname{Cos}[2 (e+f x)]-12 a b^3 c^5 d^3 (e+f x) \operatorname{Cos}[2 (e+f x)]-4 a^4 c^4 d^4 (e+f x) \operatorname{Cos}[2 (e+f x)]+24 a^2 b^2 c^4 d^4 (e+f x) \operatorname{Cos}[2 (e+f x)]-4 b^4 c^4 d^4 (e+f x) \operatorname{Cos}[2 (e+f x)]-16 a^3 b c^3 d^5 (e+f x) \operatorname{Cos}[2 (e+f x)]+16 a b^3 c^3 d^5 (e+f x) \operatorname{Cos}[2 (e+f x)]+3 a^4 c^2 d^6 (e+f x) \operatorname{Cos}[2 (e+f x)]-18 a^2 b^2 c^2 d^6 (e+f x) \operatorname{Cos}[2 (e+f x)]+3 b^4 c^2 d^6 (e+f x) \operatorname{Cos}[2 (e+f x)]+4 a^3 b c d^7 (e+f x) \operatorname{Cos}[2 (e+f x)]-4 a b^3 c d^7 (e+f x) \operatorname{Cos}[2 (e+f x)]-b^4 c^8 \operatorname{Sin}[2 (e+f x)]+6 a^2 b^2 c^6 d^2 \operatorname{Sin}[2 (e+f x)]-5 b^4 c^6 d^2 \operatorname{Sin}[2 (e+f x)]-8 a^3 b c^5 d^3 \operatorname{Sin}[2 (e+f x)]+12 a b^3 c^5 d^3 \operatorname{Sin}[2 (e+f x)]+3 a^4 c^4 d^4 \operatorname{Sin}[2 (e+f x)]-6 a^2 b^2 c^4 d^4 \operatorname{Sin}[2 (e+f x)]-4 b^4 c^4 d^4 \operatorname{Sin}[2 (e+f x)]-4 a^3 b c^3 d^5 \operatorname{Sin}[2 (e+f x)]+12 a b^3 c^3 d^5 \operatorname{Sin}[2 (e+f x)]+3 a^4 c^2 d^6 \operatorname{Sin}[2 (e+f x)]-12 a^2 b^2 c^2 d^6 \operatorname{Sin}[2 (e+f x)]+4 a^3 b c d^7 \operatorname{Sin}[2 (e+f x)]+2 a^4 c^5 d^3 (e+f x) \operatorname{Sin}[2 (e+f x)]-12 a^2 b^2 c^5 d^3 (e+f x) \operatorname{Sin}[2 (e+f x)]+2 b^4 c^5 d^3 (e+f x) \operatorname{Sin}[2 (e+f x)]+24 a^3 b c^4 d^4 (e+f x) \operatorname{Sin}[2 (e+f x)]-24 a b^3 c^4 d^4 (e+f x) \operatorname{Sin}[2 (e+f x)]-6 a^4 c^3 d^5 (e+f x) \operatorname{Sin}[2 (e+f x)]+36 a^2 b^2 c^3 d^5 (e+f x) \operatorname{Sin}[2 (e+f x)]-6 b^4 c^3 d^5 (e+f x) \operatorname{Sin}[2 (e+f x)]-8 a^3 b c^2 d^6 (e+f x) \operatorname{Sin}[2 (e+f x)]+8 a b^3 c^2 d^6 (e+f x) \operatorname{Sin}[2 (e+f x)]\Big) (a+b \operatorname{Tan}[e+f x])^4\Big) \Big/ \Big(2 c (c-\mathrm{i} d)^3 (c+\mathrm{i} d)^3 d^2 f (a \operatorname{Cos}[e+f x]+b \operatorname{Sin}[e+f x])^4 (c+d \operatorname{Tan}[e+f x])^3\Big)$$

Problem 1224: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \operatorname{Tan}[e+f x])^3}{(c+d \operatorname{Tan}[e+f x])^3}\, dx$$

Optimal (type 3, 240 leaves, 4 steps):

$$\frac{(a c+b d) \left(8 a b c d+a^2 \left(c^2-3 d^2\right)-b^2 \left(3 c^2-d^2\right)\right) x}{\left(c^2+d^2\right)^3}-\frac{1}{\left(c^2+d^2\right)^3 f}(b c-a d) \left(8 a b c d-b^2 \left(c^2-3 d^2\right)+a^2 \left(3 c^2-d^2\right)\right) \operatorname{Log}[c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]]-\frac{(b c-a d)^2 (a+b \operatorname{Tan}[e+f x])}{2 d \left(c^2+d^2\right) f (c+d \operatorname{Tan}[e+f x])^2}-\frac{(b c-a d)^2 \left(4 a c d+b \left(c^2+5 d^2\right)\right)}{2 d^2 \left(c^2+d^2\right)^2 f (c+d \operatorname{Tan}[e+f x])}$$

Result (type 3, 2013 leaves):

$$\Big(\big(-3\,\mathrm{i}\,a^2\,b\,c^{10}+\mathrm{i}\,b^3\,c^{10}+3\,\mathrm{i}\,a^3\,c^9\,d-3\,a^2\,b\,c^9\,d-9\,\mathrm{i}\,a\,b^2\,c^9\,d+b^3\,c^9\,d+3\,a^3\,c^8\,d^2+$$
$$3\,\mathrm{i}\,a^2\,b\,c^8\,d^2-9\,a\,b^2\,c^8\,d^2-\mathrm{i}\,b^3\,c^8\,d^2+5\,\mathrm{i}\,a^3\,c^7\,d^3+3\,a^2\,b\,c^7\,d^3-15\,\mathrm{i}\,a\,b^2\,c^7\,d^3-$$
$$b^3\,c^7\,d^3+5\,a^3\,c^6\,d^4+15\,\mathrm{i}\,a^2\,b\,c^6\,d^4-15\,a\,b^2\,c^6\,d^4-5\,\mathrm{i}\,b^3\,c^6\,d^4+\mathrm{i}\,a^3\,c^5\,d^5+$$
$$15\,a^2\,b\,c^5\,d^5-3\,\mathrm{i}\,a\,b^2\,c^5\,d^5-5\,b^3\,c^5\,d^5+a^3\,c^4\,d^6+9\,\mathrm{i}\,a^2\,b\,c^4\,d^6-3\,a\,b^2\,c^4\,d^6-$$
$$3\,\mathrm{i}\,b^3\,c^4\,d^6-\mathrm{i}\,a^3\,c^3\,d^7+9\,a^2\,b\,c^3\,d^7+3\,\mathrm{i}\,a\,b^2\,c^3\,d^7-3\,b^3\,c^3\,d^7-a^3\,c^2\,d^8+3\,a\,b^2\,c^2\,d^8\big)$$
$$(e+f\,x)\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(c^2\,(c-\mathrm{i}\,d)^6\,(c+\mathrm{i}\,d)^5\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)-$$
$$\Big(\mathrm{i}\,\left(-3\,a^2\,b\,c^3+b^3\,c^3+3\,a^3\,c^2\,d-9\,a\,b^2\,c^2\,d+9\,a^2\,b\,c\,d^2-3\,b^3\,c\,d^2-a^3\,d^3+3\,a\,b^2\,d^3\right)$$
$$\text{ArcTan}[\text{Tan}[e+f\,x]]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(\left(c^2+d^2\right)^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\left(-3\,a^2\,b\,c^3+b^3\,c^3+3\,a^3\,c^2\,d-9\,a\,b^2\,c^2\,d+9\,a^2\,b\,c\,d^2-3\,b^3\,c\,d^2-a^3\,d^3+3\,a\,b^2\,d^3\right)$$
$$\text{Log}\left[\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^2\right]\,\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)^3\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(2\,\left(c^2+d^2\right)^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)+$$
$$\Big(\left(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]\right)\,\big(b^3\,c^6-3\,a^2\,b\,c^4\,d^2+4\,b^3\,c^4\,d^2+2\,a^3\,c^3\,d^3-6\,a\,b^2\,c^3\,d^3+3\,b^3\,c^2\,d^4+$$
$$2\,a^3\,c\,d^5-6\,a\,b^2\,c\,d^5+3\,a^2\,b\,d^6+a^3\,c^6\,(e+f\,x)-3\,a\,b^2\,c^6\,(e+f\,x)+9\,a^2\,b\,c^5\,d\,(e+f\,x)-$$
$$3\,b^3\,c^5\,d\,(e+f\,x)-2\,a^3\,c^4\,d^2\,(e+f\,x)+6\,a\,b^2\,c^4\,d^2\,(e+f\,x)+6\,a^2\,b\,c^3\,d^3\,(e+f\,x)-$$
$$2\,b^3\,c^3\,d^3\,(e+f\,x)-3\,a^3\,c^2\,d^4\,(e+f\,x)+9\,a\,b^2\,c^2\,d^4\,(e+f\,x)-3\,a^2\,b\,c\,d^5\,(e+f\,x)+$$
$$b^3\,c\,d^5\,(e+f\,x)-3\,a\,b^2\,c^5\,d\,\text{Cos}[2\,(e+f\,x)]+6\,a^2\,b\,c^4\,d^2\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,b^3\,c^4\,d^2\,\text{Cos}[2\,(e+f\,x)]-3\,a^3\,c^3\,d^3\,\text{Cos}[2\,(e+f\,x)]+3\,a\,b^2\,c^3\,d^3\,\text{Cos}[2\,(e+f\,x)]+$$
$$3\,a^2\,b\,c^2\,d^4\,\text{Cos}[2\,(e+f\,x)]-3\,b^3\,c^2\,d^4\,\text{Cos}[2\,(e+f\,x)]-3\,a^3\,c\,d^5\,\text{Cos}[2\,(e+f\,x)]+$$
$$6\,a\,b^2\,c\,d^5\,\text{Cos}[2\,(e+f\,x)]-3\,a^2\,b\,d^6\,\text{Cos}[2\,(e+f\,x)]+a^3\,c^6\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,a\,b^2\,c^6\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+9\,a^2\,b\,c^5\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$3\,b^3\,c^5\,d\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-4\,a^3\,c^4\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+$$
$$12\,a\,b^2\,c^4\,d^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-12\,a^2\,b\,c^3\,d^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+$$
$$4\,b^3\,c^3\,d^3\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^3\,c^2\,d^4\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$9\,a\,b^2\,c^2\,d^4\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a^2\,b\,c\,d^5\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]-$$
$$b^3\,c\,d^5\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+3\,a\,b^2\,c^6\,\text{Sin}[2\,(e+f\,x)]-6\,a^2\,b\,c^5\,d\,\text{Sin}[2\,(e+f\,x)]+$$
$$3\,b^3\,c^5\,d\,\text{Sin}[2\,(e+f\,x)]+3\,a^3\,c^4\,d^2\,\text{Sin}[2\,(e+f\,x)]-3\,a\,b^2\,c^4\,d^2\,\text{Sin}[2\,(e+f\,x)]-$$
$$3\,a^2\,b\,c^3\,d^3\,\text{Sin}[2\,(e+f\,x)]+3\,b^3\,c^3\,d^3\,\text{Sin}[2\,(e+f\,x)]+3\,a^3\,c^2\,d^4\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,a\,b^2\,c^2\,d^4\,\text{Sin}[2\,(e+f\,x)]+3\,a^2\,b\,c\,d^5\,\text{Sin}[2\,(e+f\,x)]+2\,a^3\,c^5\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,a\,b^2\,c^5\,d\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+18\,a^2\,b\,c^4\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-$$
$$6\,b^3\,c^4\,d^2\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-6\,a^3\,c^3\,d^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+$$
$$18\,a\,b^2\,c^3\,d^3\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]-6\,a^2\,b\,c^2\,d^4\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]+$$
$$2\,b^3\,c^2\,d^4\,(e+f\,x)\,\text{Sin}[2\,(e+f\,x)]\big)\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\Big)\Big/$$
$$\left(2\,c\,(c-\mathrm{i}\,d)^3\,(c+\mathrm{i}\,d)^3\,f\,\left(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Tan}[e+f\,x]\right)^3\right)$$

Problem 1225: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^2}{(c+d\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 221 leaves, 4 steps):

$$-\frac{\left(b^2 c \left(c^2-3 d^2\right)-2 a b d \left(3 c^2-d^2\right)-a^2 \left(c^3-3 c d^2\right)\right) x}{\left(c^2+d^2\right)^3}-\frac{1}{\left(c^2+d^2\right)^3 f}\left(2 a b c \left(c^2-3 d^2\right)+b^2 d \left(3 c^2-d^2\right)-a^2 \left(3 c^2 d-d^3\right)\right) \text{Log}[c \text{Cos}[e+f x]+d \text{Sin}[e+f x]]-\frac{(b c-a d)^2}{2 d \left(c^2+d^2\right) f (c+d \text{Tan}[e+f x])^2}+\frac{2 (b c-a d) (a c+b d)}{\left(c^2+d^2\right)^2 f (c+d \text{Tan}[e+f x])}$$

Result (type 3, 1564 leaves):

$$\Big(\big(-2 i a b c^{10}+3 i a^2 c^9 d-2 a b c^9 d-3 i b^2 c^9 d+3 a^2 c^8 d^2+2 i a b c^8 d^2-3 b^2 c^8 d^2+5 i a^2 c^7 d^3+2 a b c^7 d^3-5 i b^2 c^7 d^3+5 a^2 c^6 d^4+10 i a b c^6 d^4-5 b^2 c^6 d^4+i a^2 c^5 d^5+10 a b c^5 d^5-i b^2 c^5 d^5+a^2 c^4 d^6+6 i a b c^4 d^6-b^2 c^4 d^6-i a^2 c^3 d^7+6 a b c^3 d^7+i b^2 c^3 d^7-a^2 c^2 d^8+b^2 c^2 d^8\big)$$
$$(e+f x) \text{Sec}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3 (a+b \text{Tan}[e+f x])^2\Big)\Big/$$
$$\left(c^2 (c-i d)^6 (c+i d)^5 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c+d \text{Tan}[e+f x])^3\right)-$$
$$\Big(i \left(-2 a b c^3+3 a^2 c^2 d-3 b^2 c^2 d+6 a b c d^2-a^2 d^3+b^2 d^3\right) \text{ArcTan}[\text{Tan}[e+f x]]$$
$$\text{Sec}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3 (a+b \text{Tan}[e+f x])^2\Big)\Big/$$
$$\left(\left(c^2+d^2\right)^3 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c+d \text{Tan}[e+f x])^3\right)+$$
$$\Big(\left(-2 a b c^3+3 a^2 c^2 d-3 b^2 c^2 d+6 a b c d^2-a^2 d^3+b^2 d^3\right) \text{Log}\left[(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right]$$
$$\text{Sec}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^3 (a+b \text{Tan}[e+f x])^2\Big)\Big/$$
$$\left(2 \left(c^2+d^2\right)^3 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c+d \text{Tan}[e+f x])^3\right)+$$
$$\Big(\text{Sec}[e+f x] (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])$$
$$\big(-2 a b c^4 d^2+2 a^2 c^3 d^3-2 b^2 c^3 d^3+2 a^2 c d^5-2 b^2 c d^5+2 a b d^6+a^2 c^6 (e+f x)-b^2 c^6 (e+f x)+6 a b c^5 d (e+f x)-2 a^2 c^4 d^2 (e+f x)+2 b^2 c^4 d^2 (e+f x)+4 a b c^3 d^3 (e+f x)-3 a^2 c^2 d^4 (e+f x)+3 b^2 c^2 d^4 (e+f x)-2 a b c d^5 (e+f x)-b^2 c^5 d \text{Cos}[2 (e+f x)]+4 a b c^4 d^2 \text{Cos}[2 (e+f x)]-3 a^2 c^3 d^3 \text{Cos}[2 (e+f x)]+b^2 c^3 d^3 \text{Cos}[2 (e+f x)]+2 a b c^2 d^4 \text{Cos}[2 (e+f x)]-3 a^2 c d^5 \text{Cos}[2 (e+f x)]+2 b^2 c d^5 \text{Cos}[2 (e+f x)]-2 a b d^6 \text{Cos}[2 (e+f x)]+a^2 c^6 (e+f x) \text{Cos}[2 (e+f x)]-b^2 c^6 (e+f x) \text{Cos}[2 (e+f x)]+6 a b c^5 d (e+f x) \text{Cos}[2 (e+f x)]-4 a^2 c^4 d^2 (e+f x) \text{Cos}[2 (e+f x)]+4 b^2 c^4 d^2 (e+f x) \text{Cos}[2 (e+f x)]-8 a b c^3 d^3 (e+f x) \text{Cos}[2 (e+f x)]+3 a^2 c^2 d^4 (e+f x) \text{Cos}[2 (e+f x)]-3 b^2 c^2 d^4 (e+f x) \text{Cos}[2 (e+f x)]+2 a b c d^5 (e+f x) \text{Cos}[2 (e+f x)]+b^2 c^6 \text{Sin}[2 (e+f x)]-4 a b c^5 d \text{Sin}[2 (e+f x)]+3 a^2 c^4 d^2 \text{Sin}[2 (e+f x)]-b^2 c^4 d^2 \text{Sin}[2 (e+f x)]-2 a b c^3 d^3 \text{Sin}[2 (e+f x)]+3 a^2 c^2 d^4 \text{Sin}[2 (e+f x)]-2 b^2 c^2 d^4 \text{Sin}[2 (e+f x)]+2 a b c d^5 \text{Sin}[2 (e+f x)]+2 a^2 c^5 d (e+f x) \text{Sin}[2 (e+f x)]-2 b^2 c^5 d (e+f x) \text{Sin}[2 (e+f x)]+12 a b c^4 d^2 (e+f x) \text{Sin}[2 (e+f x)]-6 a^2 c^3 d^3 (e+f x) \text{Sin}[2 (e+f x)]+6 b^2 c^3 d^3 (e+f x) \text{Sin}[2 (e+f x)]-4 a b c^2 d^4 (e+f x) \text{Sin}[2 (e+f x)]\big) (a+b \text{Tan}[e+f x])^2\Big)\Big/$$
$$\left(2 c (c-i d)^3 (c+i d)^3 f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^2 (c+d \text{Tan}[e+f x])^3\right)$$

Problem 1226: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a+b\,\text{Tan}[e+f\,x]}{(c+d\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 177 leaves, 4 steps):

$$\frac{\left(a\,c^3+3\,b\,c^2\,d-3\,a\,c\,d^2-b\,d^3\right)\,x}{\left(c^2+d^2\right)^3}+\frac{\left(a\,d\,\left(3\,c^2-d^2\right)-b\,\left(c^3-3\,c\,d^2\right)\right)\,\text{Log}[c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]]}{\left(c^2+d^2\right)^3\,f}+\frac{b\,c-a\,d}{2\,\left(c^2+d^2\right)\,f\,(c+d\,\text{Tan}[e+f\,x])^2}-\frac{2\,a\,c\,d-b\,\left(c^2-d^2\right)}{\left(c^2+d^2\right)^2\,f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 3, 854 leaves):

$$\left(d^2\,(b\,c-a\,d)\,\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left(2\,(c-i\,d)^2\,(c+i\,d)^2\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\left(a\,c^3+3\,b\,c^2\,d-3\,a\,c\,d^2-b\,d^3\right)\,(e+f\,x)\,\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^3\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left((c-i\,d)^3\,(c+i\,d)^3\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\left(-i\,b\,c^{10}+3\,i\,a\,c^9\,d-b\,c^9\,d+3\,a\,c^8\,d^2+i\,b\,c^8\,d^2+5\,i\,a\,c^7\,d^3+b\,c^7\,d^3+5\,a\,c^6\,d^4+5\,i\,b\,c^6\,d^4+i\,a\,c^5\,d^5+5\,b\,c^5\,d^5+a\,c^4\,d^6+3\,i\,b\,c^4\,d^6-i\,a\,c^3\,d^7+3\,b\,c^3\,d^7-a\,c^2\,d^8\right)\,(e+f\,x)\,\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^3\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left(c^2\,(c-i\,d)^6\,(c+i\,d)^5\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)-$$
$$\left(i\,\left(-b\,c^3+3\,a\,c^2\,d+3\,b\,c\,d^2-a\,d^3\right)\,\text{ArcTan}[\text{Tan}[e+f\,x]]\,\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^3\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left(\left(c^2+d^2\right)^3\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\left(-b\,c^3+3\,a\,c^2\,d+3\,b\,c\,d^2-a\,d^3\right)\,\text{Log}\left[(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right]\,\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^3\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left(2\,\left(c^2+d^2\right)^3\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)+$$
$$\left(\text{Sec}[e+f\,x]^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\,\left(-2\,b\,c^2\,d\,\text{Sin}[e+f\,x]+3\,a\,c\,d^2\,\text{Sin}[e+f\,x]+b\,d^3\,\text{Sin}[e+f\,x]\right)\,(a+b\,\text{Tan}[e+f\,x])\right)\Big/\left(c\,(c-i\,d)^2\,(c+i\,d)^2\,f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^3\right)$$

Problem 1227: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 286 leaves, 5 steps):

$$-\frac{\left(b\,d\,\left(3\,c^2-d^2\right)-a\,\left(c^3-3\,c\,d^2\right)\right)\,x}{\left(a^2+b^2\right)\,\left(c^2+d^2\right)^3}+\frac{b^4\,\mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]}{\left(a^2+b^2\right)\,(b\,c-a\,d)^3\,f}+$$
$$\left(d^2\,\left(8\,a\,b\,c^3\,d-a^2\,d^2\,\left(3\,c^2-d^2\right)-b^2\,\left(6\,c^4+3\,c^2\,d^2+d^4\right)\right)\,\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]\right)\Big/$$
$$\left((b\,c-a\,d)^3\,\left(c^2+d^2\right)^3\,f\right)+\frac{d^2}{2\,(b\,c-a\,d)\,\left(c^2+d^2\right)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])^2}-$$
$$\frac{d^2\,\left(2\,a\,c\,d-b\,\left(3\,c^2+d^2\right)\right)}{(b\,c-a\,d)^2\,\left(c^2+d^2\right)^2\,f\,(c+d\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 2281 leaves):

$$\left(d^4\,\text{Sec}[e+f x]^4\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\right)\Big/$$
$$\left(2\,\left(c-i\,d\right)^2\,\left(c+i\,d\right)^2\,\left(b\,c-a\,d\right)\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)+$$
$$\Big(\left(a\,c^3-3\,b\,c^2\,d-3\,a\,c\,d^2+b\,d^3\right)\,\left(e+f x\right)\,\text{Sec}[e+f x]^4$$
$$\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\Big)\Big/$$
$$\left(\left(a-i\,b\right)\,\left(a+i\,b\right)\,\left(c-i\,d\right)^3\,\left(c+i\,d\right)^3\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)-$$
$$\Big(\big(-6\,i\,a^6\,b^4\,c^{13}\,d^2-12\,i\,a^4\,b^6\,c^{13}\,d^2-6\,i\,a^2\,b^8\,c^{13}\,d^2+20\,i\,a^7\,b^3\,c^{12}\,d^3-6\,a^6\,b^4\,c^{12}\,d^3+40\,i\,a^5\,b^5\,c^{12}\,d^3-$$
$$12\,a^4\,b^6\,c^{12}\,d^3+20\,i\,a^3\,b^7\,c^{12}\,d^3-6\,a^2\,b^8\,c^{12}\,d^3-25\,i\,a^8\,b^2\,c^{11}\,d^4+20\,a^7\,b^3\,c^{11}\,d^4-$$
$$65\,i\,a^6\,b^4\,c^{11}\,d^4+40\,a^5\,b^5\,c^{11}\,d^4-55\,i\,a^4\,b^6\,c^{11}\,d^4+20\,a^3\,b^7\,c^{11}\,d^4-15\,i\,a^2\,b^8\,c^{11}\,d^4+$$
$$14\,i\,a^9\,b\,c^{10}\,d^5-25\,a^8\,b^2\,c^{10}\,d^5+74\,i\,a^7\,b^3\,c^{10}\,d^5-65\,a^6\,b^4\,c^{10}\,d^5+106\,i\,a^5\,b^5\,c^{10}\,d^5-$$
$$55\,a^4\,b^6\,c^{10}\,d^5+46\,i\,a^3\,b^7\,c^{10}\,d^5-15\,a^2\,b^8\,c^{10}\,d^5-3\,i\,a^{10}\,c^9\,d^6+14\,a^9\,b\,c^9\,d^6-58\,i\,a^8\,b^2\,c^9\,d^6+$$
$$74\,a^7\,b^3\,c^9\,d^6-120\,i\,a^6\,b^4\,c^9\,d^6+106\,a^5\,b^5\,c^9\,d^6-78\,i\,a^4\,b^6\,c^9\,d^6+46\,a^3\,b^7\,c^9\,d^6-$$
$$13\,i\,a^2\,b^8\,c^9\,d^6-3\,a^{10}\,c^8\,d^7+26\,i\,a^9\,b\,c^8\,d^7-58\,a^8\,b^2\,c^8\,d^7+86\,i\,a^7\,b^3\,c^8\,d^7-120\,a^6\,b^4\,c^8\,d^7+$$
$$94\,i\,a^5\,b^5\,c^8\,d^7-78\,a^4\,b^6\,c^8\,d^7+34\,i\,a^3\,b^7\,c^8\,d^7-13\,a^2\,b^8\,c^8\,d^7-5\,i\,a^{10}\,c^7\,d^8+26\,a^9\,b\,c^7\,d^8-$$
$$40\,i\,a^8\,b^2\,c^7\,d^8+86\,a^7\,b^3\,c^7\,d^8-70\,i\,a^6\,b^4\,c^7\,d^8+94\,a^5\,b^5\,c^7\,d^8-40\,i\,a^4\,b^6\,c^7\,d^8+$$
$$34\,a^3\,b^7\,c^7\,d^8-5\,i\,a^2\,b^8\,c^7\,d^8-5\,a^{10}\,c^6\,d^9+10\,i\,a^9\,b\,c^6\,d^9-40\,a^8\,b^2\,c^6\,d^9+30\,i\,a^7\,b^3\,c^6\,d^9-$$
$$70\,a^6\,b^4\,c^6\,d^9+30\,i\,a^5\,b^5\,c^6\,d^9-40\,a^4\,b^6\,c^6\,d^9+10\,i\,a^3\,b^7\,c^6\,d^9-5\,a^2\,b^8\,c^6\,d^9-i\,a^{10}\,c^5\,d^{10}+$$
$$10\,a^9\,b\,c^5\,d^{10}-6\,i\,a^8\,b^2\,c^5\,d^{10}+30\,a^7\,b^3\,c^5\,d^{10}-10\,i\,a^6\,b^4\,c^5\,d^{10}+30\,a^5\,b^5\,c^5\,d^{10}-$$
$$6\,i\,a^4\,b^6\,c^5\,d^{10}+10\,a^3\,b^7\,c^5\,d^{10}-i\,a^2\,b^8\,c^5\,d^{10}-a^{10}\,c^4\,d^{11}-2\,i\,a^9\,b\,c^4\,d^{11}-6\,a^8\,b^2\,c^4\,d^{11}-$$
$$2\,i\,a^7\,b^3\,c^4\,d^{11}-10\,a^6\,b^4\,c^4\,d^{11}+2\,i\,a^5\,b^5\,c^4\,d^{11}-6\,a^4\,b^6\,c^4\,d^{11}+2\,i\,a^3\,b^7\,c^4\,d^{11}-a^2\,b^8\,c^4\,d^{11}+$$
$$i\,a^{10}\,c^3\,d^{12}-2\,a^9\,b\,c^3\,d^{12}+i\,a^8\,b^2\,c^3\,d^{12}-2\,a^7\,b^3\,c^3\,d^{12}-i\,a^6\,b^4\,c^3\,d^{12}+2\,a^5\,b^5\,c^3\,d^{12}-$$
$$i\,a^4\,b^6\,c^3\,d^{12}+2\,a^3\,b^7\,c^3\,d^{12}+a^{10}\,c^2\,d^{13}+a^8\,b^2\,c^2\,d^{13}-a^6\,b^4\,c^2\,d^{13}-a^4\,b^6\,c^2\,d^{13}\big)\,\left(e+f x\right)$$
$$\text{Sec}[e+f x]^4\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\Big)\Big/$$
$$\Big(a^2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,\left(a^2+b^2\right)\,c^2\,\left(c-i\,d\right)^6\,\left(c+i\,d\right)^5\,\left(-b\,c+a\,d\right)^5$$
$$f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\Big)+$$
$$\Big(i\,\left(6\,b^2\,c^4\,d^2-8\,a\,b\,c^3\,d^3+3\,a^2\,c^2\,d^4+3\,b^2\,c^2\,d^4-a^2\,d^6+b^2\,d^6\right)\,\text{ArcTan}[\text{Tan}[e+f x]]$$
$$\text{Sec}[e+f x]^4\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\Big)\Big/$$
$$\left(\left(b\,c-a\,d\right)^3\,\left(c^2+d^2\right)^3\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)-$$
$$\Big(b^4\,\text{Log}[a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]]\,\text{Sec}[e+f x]^4$$
$$\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\Big)\Big/$$
$$\left(\left(a^2+b^2\right)\,\left(-b\,c+a\,d\right)^3\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)-$$
$$\Big(\left(6\,b^2\,c^4\,d^2-8\,a\,b\,c^3\,d^3+3\,a^2\,c^2\,d^4+3\,b^2\,c^2\,d^4-a^2\,d^6+b^2\,d^6\right)\,\text{Log}\left[\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2\right]$$
$$\text{Sec}[e+f x]^4\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\Big)\Big/$$
$$\left(2\,\left(b\,c-a\,d\right)^3\,\left(c^2+d^2\right)^3\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)+$$
$$\Big(\text{Sec}[e+f x]^4\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2$$
$$\left(-4\,b\,c^2\,d^3\,\text{Sin}[e+f x]+3\,a\,c\,d^4\,\text{Sin}[e+f x]-b\,d^5\,\text{Sin}[e+f x]\right)\Big)\Big/$$
$$\left(c\,\left(c-i\,d\right)^2\,\left(c+i\,d\right)^2\,\left(b\,c-a\,d\right)^2\,f\,\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)$$

Problem 1228: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])^2\,(c+d\,\mathrm{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 457 leaves, 6 steps):

$$-\frac{\left(b^2 c\left(c^2-3 d^2\right)-a^2\left(c^3-3 c d^2\right)+a b\left(6 c^2 d-2 d^3\right)\right) x}{\left(a^2+b^2\right)^2\left(c^2+d^2\right)^3}+\frac{b^4\left(2 a b c-5 a^2 d-3 b^2 d\right) \mathrm{Log}[a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]]}{\left(a^2+b^2\right)^2(b c-a d)^4 f}+$$
$$\left(d^3\left(a^2 d^2\left(3 c^2-d^2\right)-2 a b c d\left(5 c^2+d^2\right)+b^2\left(10 c^4+9 c^2 d^2+3 d^4\right)\right)\right.$$
$$\left.\mathrm{Log}[c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]]\right)\Big/\left((b c-a d)^4\left(c^2+d^2\right)^3 f\right)-$$
$$\frac{d\left(a^2 d^2+b^2\left(2 c^2+3 d^2\right)\right)}{2\left(a^2+b^2\right)(b c-a d)^2\left(c^2+d^2\right) f\,(c+d\,\mathrm{Tan}[e+f\,x])^2}-$$
$$\frac{b^2}{\left(a^2+b^2\right)(b c-a d) f\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^2}+$$
$$\frac{d\left(2 a^3 c d^3+2 a b^2 c d^3-2 a^2 b d^2\left(2 c^2+d^2\right)-b^3\left(c^4+6 c^2 d^2+3 d^4\right)\right)}{\left(a^2+b^2\right)(b c-a d)^3\left(c^2+d^2\right)^2 f\,(c+d\,\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 6822 leaves):

$$\Big(\Big(2 a^6 b^7 c^{16}-2 i a^5 b^8 c^{16}+2 a^4 b^9 c^{16}-2 i a^3 b^{10} c^{16}-9 a^7 b^6 c^{15} d+7 i a^6 b^7 c^{15} d-14 a^5 b^8 c^{15} d+$$
$$10 i a^4 b^9 c^{15} d-5 a^3 b^{10} c^{15} d+3 i a^2 b^{11} c^{15} d+12 a^8 b^5 c^{14} d^2-3 i a^7 b^6 c^{14} d^2+37 a^6 b^7 c^{14} d^2-$$
$$16 i a^5 b^8 c^{14} d^2+28 a^4 b^9 c^{14} d^2-13 i a^3 b^{10} c^{14} d^2+3 a^2 b^{11} c^{14} d^2+5 a^9 b^4 c^{13} d^3-$$
$$17 i a^8 b^5 c^{13} d^3-35 a^7 b^6 c^{13} d^3-5 i a^6 b^7 c^{13} d^3-61 a^5 b^8 c^{13} d^3+17 i a^4 b^9 c^{13} d^3-$$
$$21 a^3 b^{10} c^{13} d^3+5 i a^2 b^{11} c^{13} d^3-30 a^{10} b^3 c^{12} d^4+25 i a^9 b^4 c^{12} d^4-35 a^8 b^5 c^{12} d^4+$$
$$53 i a^7 b^6 c^{12} d^4+43 a^6 b^7 c^{12} d^4+13 i a^5 b^8 c^{12} d^4+53 a^4 b^9 c^{12} d^4-15 i a^3 b^{10} c^{12} d^4+$$
$$5 a^2 b^{11} c^{12} d^4+33 a^{11} b^2 c^{11} d^5-3 i a^{10} b^3 c^{11} d^5+133 a^9 b^4 c^{11} d^5-73 i a^8 b^5 c^{11} d^5+$$
$$86 a^7 b^6 c^{11} d^5-76 i a^6 b^7 c^{11} d^5-35 a^5 b^8 c^{11} d^5-5 i a^4 b^9 c^{11} d^5-21 a^3 b^{10} c^{11} d^5+i a^2 b^{11} c^{11} d^5-$$
$$16 a^{12} b c^{10} d^6-17 i a^{11} b^2 c^{10} d^6-161 a^{10} b^3 c^{10} d^6+25 i a^9 b^4 c^{10} d^6-271 a^8 b^5 c^{10} d^6+$$
$$112 i a^7 b^6 c^{10} d^6-112 a^6 b^7 c^{10} d^6+71 i a^5 b^8 c^{10} d^6+15 a^4 b^9 c^{10} d^6+i a^3 b^{10} c^{10} d^6+$$
$$a^2 b^{11} c^{10} d^6+3 a^{13} c^9 d^7+13 i a^{12} b c^9 d^7+103 a^{11} b^2 c^9 d^7+41 i a^{10} b^3 c^9 d^7+352 a^9 b^4 c^9 d^7-$$
$$56 i a^8 b^5 c^9 d^7+328 a^7 b^6 c^9 d^7-104 i a^6 b^7 c^9 d^7+77 a^5 b^8 c^9 d^7-21 i a^4 b^9 c^9 d^7+$$
$$a^3 b^{10} c^9 d^7-i a^2 b^{11} c^9 d^7-3 i a^{13} c^8 d^8-35 a^{12} b c^8 d^8-55 i a^{11} b^2 c^8 d^8-259 a^{10} b^3 c^8 d^8-$$
$$52 i a^9 b^4 c^8 d^8-428 a^8 b^5 c^8 d^8+44 i a^7 b^6 c^8 d^8-230 a^6 b^7 c^8 d^8+49 i a^5 b^8 c^8 d^8-$$
$$27 a^4 b^9 c^8 d^8+5 i a^3 b^{10} c^8 d^8-a^2 b^{11} c^8 d^8+5 a^{13} c^7 d^9+27 i a^{12} b c^7 d^9+107 a^{11} b^2 c^7 d^9+$$
$$97 i a^{10} b^3 c^7 d^9+332 a^9 b^4 c^7 d^9+44 i a^8 b^5 c^7 d^9+309 a^7 b^6 c^7 d^9-35 i a^6 b^7 c^7 d^9+$$
$$85 a^5 b^8 c^7 d^9-9 i a^4 b^9 c^7 d^9+6 a^3 b^{10} c^7 d^9-5 i a^{13} c^6 d^{10}-21 a^{12} b c^6 d^{10}-59 i a^{11} b^2 c^6 d^{10}-$$
$$155 a^{10} b^3 c^6 d^{10}-80 i a^9 b^4 c^6 d^{10}-244 a^8 b^5 c^6 d^{10}-21 i a^7 b^6 c^6 d^{10}-125 a^6 b^7 c^6 d^{10}+$$
$$5 i a^5 b^8 c^6 d^{10}-15 a^4 b^9 c^6 d^{10}+a^{13} c^5 d^{11}+15 i a^{12} b c^5 d^{11}+37 a^{11} b^2 c^5 d^{11}+59 i a^{10} b^3 c^5 d^{11}+$$
$$115 a^9 b^4 c^5 d^{11}+49 i a^8 b^5 c^5 d^{11}+99 a^7 b^6 c^5 d^{11}+5 i a^6 b^7 c^5 d^{11}+20 a^5 b^8 c^5 d^{11}-$$
$$i a^{13} c^4 d^{12}-a^{12} b c^4 d^{12}-21 i a^{11} b^2 c^4 d^{12}-27 a^{10} b^3 c^4 d^{12}-29 i a^9 b^4 c^4 d^{12}-41 a^8 b^5 c^4 d^{12}-$$
$$9 i a^7 b^6 c^4 d^{12}-15 a^6 b^7 c^4 d^{12}-a^{13} c^3 d^{13}+i a^{12} b c^3 d^{13}+6 i a^{10} b^3 c^3 d^{13}+7 a^9 b^4 c^3 d^{13}+$$
$$5 i a^8 b^5 c^3 d^{13}+6 a^7 b^6 c^3 d^{13}+i a^{13} c^2 d^{14}+a^{12} b c^2 d^{14}-i a^9 b^4 c^2 d^{14}-a^8 b^5 c^2 d^{14}\Big)$$

$(e+fx)\,\mathrm{Sec}[e+fx]^5\,(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2$
$(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^3\Big)\Big/$
$\Big(a^2\,(a-\mathbb{i}\,b)^4\,(a+\mathbb{i}\,b)^2\,(-\mathbb{i}\,a+b)\,c^2\,(c-\mathbb{i}\,d)^6\,(c+\mathbb{i}\,d)^5\,(-b\,c+a\,d)^6$
$f\,(a+b\,\mathrm{Tan}[e+fx])^2\,(c+d\,\mathrm{Tan}[e+fx])^3\Big)-$
$\Big(\mathbb{i}\,(2\,a\,b^5\,c-5\,a^2\,b^4\,d-3\,b^6\,d)\,\mathrm{ArcTan}[\mathrm{Tan}[e+fx]]\,\mathrm{Sec}[e+fx]^5$
$(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2\,(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^3\Big)\Big/$
$\Big((a^2+b^2)^2\,(-b\,c+a\,d)^4\,f\,(a+b\,\mathrm{Tan}[e+fx])^2\,(c+d\,\mathrm{Tan}[e+fx])^3\Big)-$
$\Big(\mathbb{i}\,(10\,b^2\,c^4\,d^3-10\,a\,b\,c^3\,d^4+3\,a^2\,c^2\,d^5+9\,b^2\,c^2\,d^5-2\,a\,b\,c\,d^6-a^2\,d^7+3\,b^2\,d^7)\,\mathrm{ArcTan}[\mathrm{Tan}[e+fx]]$
$\mathrm{Sec}[e+fx]^5\,(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2\,(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^3\Big)\Big/$
$\Big((b\,c-a\,d)^4\,(c^2+d^2)^3\,f\,(a+b\,\mathrm{Tan}[e+fx])^2\,(c+d\,\mathrm{Tan}[e+fx])^3\Big)+$
$\Big((2\,a\,b^5\,c-5\,a^2\,b^4\,d-3\,b^6\,d)\,\mathrm{Log}\big[(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2\big]\,\mathrm{Sec}[e+fx]^5$
$(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2\,(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^3\Big)\Big/$
$\Big(2\,(a^2+b^2)^2\,(-b\,c+a\,d)^4\,f\,(a+b\,\mathrm{Tan}[e+fx])^2\,(c+d\,\mathrm{Tan}[e+fx])^3\Big)+$
$\Big((10\,b^2\,c^4\,d^3-10\,a\,b\,c^3\,d^4+3\,a^2\,c^2\,d^5+9\,b^2\,c^2\,d^5-2\,a\,b\,c\,d^6-a^2\,d^7+3\,b^2\,d^7)$
$\mathrm{Log}\big[(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^2\big]\,\mathrm{Sec}[e+fx]^5$
$(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])^2\,(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])^3\Big)\Big/$
$\Big(2\,(b\,c-a\,d)^4\,(c^2+d^2)^3\,f\,(a+b\,\mathrm{Tan}[e+fx])^2\,(c+d\,\mathrm{Tan}[e+fx])^3\Big)-$
$\Big(\mathrm{Sec}[e+fx]^5\,(a\,\mathrm{Cos}[e+fx]+b\,\mathrm{Sin}[e+fx])\,(c\,\mathrm{Cos}[e+fx]+d\,\mathrm{Sin}[e+fx])$
$\big(2\,a^2\,b^5\,c^8\,d\,\mathrm{Cos}[e+fx]+2\,b^7\,c^8\,d\,\mathrm{Cos}[e+fx]+6\,a^2\,b^5\,c^6\,d^3\,\mathrm{Cos}[e+fx]+$
$6\,b^7\,c^6\,d^3\,\mathrm{Cos}[e+fx]+5\,a^5\,b^2\,c^5\,d^4\,\mathrm{Cos}[e+fx]+10\,a^3\,b^4\,c^5\,d^4\,\mathrm{Cos}[e+fx]+$
$5\,a\,b^6\,c^5\,d^4\,\mathrm{Cos}[e+fx]+6\,a^2\,b^5\,c^4\,d^5\,\mathrm{Cos}[e+fx]+6\,b^7\,c^4\,d^5\,\mathrm{Cos}[e+fx]-$
$a^7\,c^3\,d^6\,\mathrm{Cos}[e+fx]+5\,a^5\,b^2\,c^3\,d^6\,\mathrm{Cos}[e+fx]+13\,a^3\,b^4\,c^3\,d^6\,\mathrm{Cos}[e+fx]+$
$7\,a\,b^6\,c^3\,d^6\,\mathrm{Cos}[e+fx]+2\,a^6\,b\,c^2\,d^7\,\mathrm{Cos}[e+fx]+4\,a^4\,b^3\,c^2\,d^7\,\mathrm{Cos}[e+fx]+$
$4\,a^2\,b^5\,c^2\,d^7\,\mathrm{Cos}[e+fx]+2\,b^7\,c^2\,d^7\,\mathrm{Cos}[e+fx]-a^7\,c\,d^8\,\mathrm{Cos}[e+fx]+$
$3\,a^3\,b^4\,c\,d^8\,\mathrm{Cos}[e+fx]+2\,a\,b^6\,c\,d^8\,\mathrm{Cos}[e+fx]+2\,a^6\,b\,d^9\,\mathrm{Cos}[e+fx]+4\,a^4\,b^3\,d^9\,\mathrm{Cos}[e+fx]+$
$2\,a^2\,b^5\,d^9\,\mathrm{Cos}[e+fx]+3\,a^4\,b^3\,c^9\,(e+fx)\,\mathrm{Cos}[e+fx]-3\,a^2\,b^5\,c^9\,(e+fx)\,\mathrm{Cos}[e+fx]-$
$9\,a^5\,b^2\,c^8\,d\,(e+fx)\,\mathrm{Cos}[e+fx]-7\,a^3\,b^4\,c^8\,d\,(e+fx)\,\mathrm{Cos}[e+fx]-$
$2\,a\,b^6\,c^8\,d\,(e+fx)\,\mathrm{Cos}[e+fx]+9\,a^6\,b\,c^7\,d^2\,(e+fx)\,\mathrm{Cos}[e+fx]+$
$31\,a^4\,b^3\,c^7\,d^2\,(e+fx)\,\mathrm{Cos}[e+fx]+2\,a^2\,b^5\,c^7\,d^2\,(e+fx)\,\mathrm{Cos}[e+fx]-$
$3\,a^7\,c^6\,d^3\,(e+fx)\,\mathrm{Cos}[e+fx]-21\,a^5\,b^2\,c^6\,d^3\,(e+fx)\,\mathrm{Cos}[e+fx]+$
$6\,a\,b^6\,c^6\,d^3\,(e+fx)\,\mathrm{Cos}[e+fx]-8\,a^6\,b\,c^5\,d^4\,(e+fx)\,\mathrm{Cos}[e+fx]+$
$5\,a^4\,b^3\,c^5\,d^4\,(e+fx)\,\mathrm{Cos}[e+fx]-11\,a^2\,b^5\,c^5\,d^4\,(e+fx)\,\mathrm{Cos}[e+fx]+$
$8\,a^7\,c^4\,d^5\,(e+fx)\,\mathrm{Cos}[e+fx]-5\,a^5\,b^2\,c^4\,d^5\,(e+fx)\,\mathrm{Cos}[e+fx]-$
$a^3\,b^4\,c^4\,d^5\,(e+fx)\,\mathrm{Cos}[e+fx]-3\,a^6\,b\,c^3\,d^6\,(e+fx)\,\mathrm{Cos}[e+fx]+9\,a^4\,b^3\,c^3\,d^6\,(e+fx)$
$\mathrm{Cos}[e+fx]+3\,a^7\,c^2\,d^7\,(e+fx)\,\mathrm{Cos}[e+fx]-a^5\,b^2\,c^2\,d^7\,(e+fx)\,\mathrm{Cos}[e+fx]-$
$2\,a^6\,b\,c\,d^8\,(e+fx)\,\mathrm{Cos}[e+fx]-2\,a^2\,b^5\,c^8\,d\,\mathrm{Cos}[3\,(e+fx)]-2\,b^7\,c^8\,d\,\mathrm{Cos}[3\,(e+fx)]-$
$6\,a^2\,b^5\,c^6\,d^3\,\mathrm{Cos}[3\,(e+fx)]-6\,b^7\,c^6\,d^3\,\mathrm{Cos}[3\,(e+fx)]-5\,a^5\,b^2\,c^5\,d^4\,\mathrm{Cos}[3\,(e+fx)]-$
$10\,a^3\,b^4\,c^5\,d^4\,\mathrm{Cos}[3\,(e+fx)]-5\,a\,b^6\,c^5\,d^4\,\mathrm{Cos}[3\,(e+fx)]-2\,a^6\,b\,c^4\,d^5\,\mathrm{Cos}[3\,(e+fx)]-$
$4\,a^4\,b^3\,c^4\,d^5\,\mathrm{Cos}[3\,(e+fx)]-8\,a^2\,b^5\,c^4\,d^5\,\mathrm{Cos}[3\,(e+fx)]-6\,b^7\,c^4\,d^5\,\mathrm{Cos}[3\,(e+fx)]+$
$3\,a^7\,c^3\,d^6\,\mathrm{Cos}[3\,(e+fx)]-a^5\,b^2\,c^3\,d^6\,\mathrm{Cos}[3\,(e+fx)]-11\,a^3\,b^4\,c^3\,d^6\,\mathrm{Cos}[3\,(e+fx)]-$
$7\,a\,b^6\,c^3\,d^6\,\mathrm{Cos}[3\,(e+fx)]-4\,a^6\,b\,c^2\,d^7\,\mathrm{Cos}[3\,(e+fx)]-8\,a^4\,b^3\,c^2\,d^7\,\mathrm{Cos}[3\,(e+fx)]-$
$6\,a^2\,b^5\,c^2\,d^7\,\mathrm{Cos}[3\,(e+fx)]-2\,b^7\,c^2\,d^7\,\mathrm{Cos}[3\,(e+fx)]+3\,a^7\,c\,d^8\,\mathrm{Cos}[3\,(e+fx)]+$
$4\,a^5\,b^2\,c\,d^8\,\mathrm{Cos}[3\,(e+fx)]-a^3\,b^4\,c\,d^8\,\mathrm{Cos}[3\,(e+fx)]-2\,a\,b^6\,c\,d^8\,\mathrm{Cos}[3\,(e+fx)]-$

$$2 a^6 b d^9 \cos[3 (e + f x)] - 4 a^4 b^3 d^9 \cos[3 (e + f x)] - 2 a^2 b^5 d^9 \cos[3 (e + f x)] +$$
$$a^4 b^3 c^9 (e + f x) \cos[3 (e + f x)] - a^2 b^5 c^9 (e + f x) \cos[3 (e + f x)] -$$
$$3 a^5 b^2 c^8 d (e + f x) \cos[3 (e + f x)] - 5 a^3 b^4 c^8 d (e + f x) \cos[3 (e + f x)] +$$
$$2 a b^6 c^8 d (e + f x) \cos[3 (e + f x)] + 3 a^6 b c^7 d^2 (e + f x) \cos[3 (e + f x)] +$$
$$17 a^4 b^3 c^7 d^2 (e + f x) \cos[3 (e + f x)] + 10 a^2 b^5 c^7 d^2 (e + f x) \cos[3 (e + f x)] -$$
$$a^7 c^6 d^3 (e + f x) \cos[3 (e + f x)] - 11 a^5 b^2 c^6 d^3 (e + f x) \cos[3 (e + f x)] -$$
$$28 a^3 b^4 c^6 d^3 (e + f x) \cos[3 (e + f x)] - 6 a b^6 c^6 d^3 (e + f x) \cos[3 (e + f x)] -$$
$$4 a^6 b c^5 d^4 (e + f x) \cos[3 (e + f x)] + 7 a^4 b^3 c^5 d^4 (e + f x) \cos[3 (e + f x)] +$$
$$11 a^2 b^5 c^5 d^4 (e + f x) \cos[3 (e + f x)] + 4 a^7 c^4 d^5 (e + f x) \cos[3 (e + f x)] +$$
$$17 a^5 b^2 c^4 d^5 (e + f x) \cos[3 (e + f x)] + a^3 b^4 c^4 d^5 (e + f x) \cos[3 (e + f x)] -$$
$$5 a^6 b c^3 d^6 (e + f x) \cos[3 (e + f x)] - 9 a^4 b^3 c^3 d^6 (e + f x) \cos[3 (e + f x)] -$$
$$3 a^7 c^2 d^7 (e + f x) \cos[3 (e + f x)] + a^5 b^2 c^2 d^7 (e + f x) \cos[3 (e + f x)] +$$
$$2 a^6 b c d^8 (e + f x) \cos[3 (e + f x)] + a^2 b^5 c^9 \sin[e + f x] + b^7 c^9 \sin[e + f x] +$$
$$6 a^2 b^5 c^7 d^2 \sin[e + f x] + 6 b^7 c^7 d^2 \sin[e + f x] + 5 a^6 b c^5 d^4 \sin[e + f x] +$$
$$10 a^4 b^3 c^5 d^4 \sin[e + f x] + 17 a^2 b^5 c^5 d^4 \sin[e + f x] + 12 b^7 c^5 d^4 \sin[e + f x] -$$
$$3 a^7 c^4 d^5 \sin[e + f x] + 7 a^5 b^2 c^4 d^5 \sin[e + f x] + 23 a^3 b^4 c^4 d^5 \sin[e + f x] +$$
$$13 a b^6 c^4 d^5 \sin[e + f x] + 10 a^2 b^5 c^3 d^6 \sin[e + f x] + 10 b^7 c^3 d^6 \sin[e + f x] -$$
$$3 a^7 c^2 d^7 \sin[e + f x] + 13 a^5 b^2 c^2 d^7 \sin[e + f x] + 35 a^3 b^4 c^2 d^7 \sin[e + f x] +$$
$$19 a b^6 c^2 d^7 \sin[e + f x] - 5 a^6 b c d^8 \sin[e + f x] - 10 a^4 b^3 c d^8 \sin[e + f x] -$$
$$2 a^2 b^5 c d^8 \sin[e + f x] + 3 b^7 c d^8 \sin[e + f x] + 6 a^5 b^2 d^9 \sin[e + f x] + 12 a^3 b^4 d^9 \sin[e + f x] +$$
$$6 a b^6 d^9 \sin[e + f x] + a^3 b^4 c^9 (e + f x) \sin[e + f x] - a b^6 c^9 (e + f x) \sin[e + f x] -$$
$$a^4 b^3 c^8 d (e + f x) \sin[e + f x] - 5 a^2 b^5 c^8 d (e + f x) \sin[e + f x] -$$
$$3 a^5 b^2 c^7 d^2 (e + f x) \sin[e + f x] + 9 a^3 b^4 c^7 d^2 (e + f x) \sin[e + f x] +$$
$$5 a^6 b c^6 d^3 (e + f x) \sin[e + f x] + 7 a^4 b^3 c^6 d^3 (e + f x) \sin[e + f x] -$$
$$10 a^2 b^5 c^6 d^3 (e + f x) \sin[e + f x] - 2 a^7 c^5 d^4 (e + f x) \sin[e + f x] -$$
$$10 a^5 b^2 c^5 d^4 (e + f x) \sin[e + f x] + 25 a^3 b^4 c^5 d^4 (e + f x) \sin[e + f x] +$$
$$9 a b^6 c^5 d^4 (e + f x) \sin[e + f x] - 6 a^6 b c^4 d^5 (e + f x) \sin[e + f x] -$$
$$15 a^4 b^3 c^4 d^5 (e + f x) \sin[e + f x] - 21 a^2 b^5 c^4 d^5 (e + f x) \sin[e + f x] +$$
$$6 a^7 c^3 d^6 (e + f x) \sin[e + f x] - 5 a^5 b^2 c^3 d^6 (e + f x) \sin[e + f x] +$$
$$9 a^3 b^4 c^3 d^6 (e + f x) \sin[e + f x] + 5 a^6 b c^2 d^7 (e + f x) \sin[e + f x] +$$
$$9 a^4 b^3 c^2 d^7 (e + f x) \sin[e + f x] - 6 a^5 b^2 c d^8 (e + f x) \sin[e + f x] +$$
$$a^2 b^5 c^9 \sin[3 (e + f x)] + b^7 c^9 \sin[3 (e + f x)] + 2 a^2 b^5 c^7 d^2 \sin[3 (e + f x)] +$$
$$2 b^7 c^7 d^2 \sin[3 (e + f x)] + 5 a^6 b c^5 d^4 \sin[3 (e + f x)] + 10 a^4 b^3 c^5 d^4 \sin[3 (e + f x)] +$$
$$5 a^2 b^5 c^5 d^4 \sin[3 (e + f x)] - 3 a^7 c^4 d^5 \sin[3 (e + f x)] - 11 a^5 b^2 c^4 d^5 \sin[3 (e + f x)] -$$
$$13 a^3 b^4 c^4 d^5 \sin[3 (e + f x)] - 5 a b^6 c^4 d^5 \sin[3 (e + f x)] + 10 a^6 b c^3 d^6 \sin[3 (e + f x)] +$$
$$20 a^4 b^3 c^3 d^6 \sin[3 (e + f x)] + 8 a^2 b^5 c^3 d^6 \sin[3 (e + f x)] - 2 b^7 c^3 d^6 \sin[3 (e + f x)] -$$
$$3 a^7 c^2 d^7 \sin[3 (e + f x)] - 13 a^5 b^2 c^2 d^7 \sin[3 (e + f x)] - 17 a^3 b^4 c^2 d^7 \sin[3 (e + f x)] -$$
$$7 a b^6 c^2 d^7 \sin[3 (e + f x)] + 5 a^6 b c d^8 \sin[3 (e + f x)] + 10 a^4 b^3 c d^8 \sin[3 (e + f x)] +$$
$$4 a^2 b^5 c d^8 \sin[3 (e + f x)] - b^7 c d^8 \sin[3 (e + f x)] - 2 a^5 b^2 d^9 \sin[3 (e + f x)] -$$
$$4 a^3 b^4 d^9 \sin[3 (e + f x)] - 2 a b^6 d^9 \sin[3 (e + f x)] + a^3 b^4 c^9 (e + f x) \sin[3 (e + f x)] -$$
$$a b^6 c^9 (e + f x) \sin[3 (e + f x)] - a^4 b^3 c^8 d (e + f x) \sin[3 (e + f x)] -$$
$$5 a^2 b^5 c^8 d (e + f x) \sin[3 (e + f x)] - 3 a^5 b^2 c^7 d^2 (e + f x) \sin[3 (e + f x)] +$$
$$5 a^3 b^4 c^7 d^2 (e + f x) \sin[3 (e + f x)] + 4 a b^6 c^7 d^2 (e + f x) \sin[3 (e + f x)] +$$
$$5 a^6 b c^6 d^3 (e + f x) \sin[3 (e + f x)] + 19 a^4 b^3 c^6 d^3 (e + f x) \sin[3 (e + f x)] +$$
$$2 a^2 b^5 c^6 d^3 (e + f x) \sin[3 (e + f x)] - 2 a^7 c^5 d^4 (e + f x) \sin[3 (e + f x)] -$$
$$22 a^5 b^2 c^5 d^4 (e + f x) \sin[3 (e + f x)] - 23 a^3 b^4 c^5 d^4 (e + f x) \sin[3 (e + f x)] -$$
$$3 a b^6 c^5 d^4 (e + f x) \sin[3 (e + f x)] - 2 a^6 b c^4 d^5 (e + f x) \sin[3 (e + f x)] +$$

$17\,a^4\,b^3\,c^4\,d^5\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]+7\,a^2\,b^5\,c^4\,d^5\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]+$
$6\,a^7\,c^3\,d^6\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]+7\,a^5\,b^2\,c^3\,d^6\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]-$
$3\,a^3\,b^4\,c^3\,d^6\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]-7\,a^6\,b\,c^2\,d^7\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]-$
$3\,a^4\,b^3\,c^2\,d^7\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]+2\,a^5\,b^2\,c\,d^8\,(e+f\,x)\,\mathrm{Sin}[3\,(e+f\,x)]]))\Big/$
$\left(4\,a\,(a-i\,b)^2\,(a+i\,b)^2\,c\,(c-i\,d)^3\,(c+i\,d)^3\,(-b\,c+a\,d)^3\,f\right.$
$\left.(a+b\,\mathrm{Tan}[e+f\,x])^2\,(c+d\,\mathrm{Tan}[e+f\,x])^3\right)$

Problem 1232: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{a+b\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 170 leaves, 11 steps):

$$\frac{\sqrt{c-i\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(i\,a+b)\,f}-\frac{\sqrt{c+i\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(i\,a-b)\,f}-\frac{2\,\sqrt{b}\,\sqrt{b\,c-a\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)\,f}$$

Result (type 4, 177 870 leaves): Display of huge result suppressed!

Problem 1233: Humongous result has more than 200000 leaves.

$$\int\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{(a+b\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 231 leaves, 12 steps):

$$-\frac{i\,\sqrt{c-i\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(a-i\,b)^2\,f}+\frac{i\,\sqrt{c+i\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(a+i\,b)^2\,f}-\frac{\sqrt{b}\,(4\,a\,b\,c-3\,a^2\,d+b^2\,d)\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)^2\,\sqrt{b\,c-a\,d}\,f}-\frac{b\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{(a^2+b^2)\,f\,(a+b\,\mathrm{Tan}[e+f\,x])}$$

Result (type ?, 267 003 leaves): Display of huge result suppressed!

Problem 1234: Humongous result has more than 200000 leaves.

$$\int\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{(a+b\,\mathrm{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 342 leaves, 13 steps):

$$-\frac{\sqrt{c-i d}\ \text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{(i a+b)^3 f}+\frac{\sqrt{c+i d}\ \text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{(i a-b)^3 f}+$$
$$\left(\sqrt{b}\ \left(40 a^3 b c d-24 a b^3 c d-15 a^4 d^2-6 a^2 b^2 \left(4 c^2-3 d^2\right)+b^4 \left(8 c^2+d^2\right)\right)\right.$$
$$\left.\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{b c-a d}}\right]\right)\Big/\left(4 \left(a^2+b^2\right)^3 (b c-a d)^{3/2} f\right)-$$
$$\frac{b \sqrt{c+d\,\text{Tan}[e+f x]}}{2 \left(a^2+b^2\right) f \left(a+b\,\text{Tan}[e+f x]\right)^2}-\frac{b \left(8 a b c-7 a^2 d+b^2 d\right) \sqrt{c+d\,\text{Tan}[e+f x]}}{4 \left(a^2+b^2\right)^2 (b c-a d) f \left(a+b\,\text{Tan}[e+f x]\right)}$$

Result (type ?, 605 806 leaves) : Display of huge result suppressed!

Problem 1235: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\text{Tan}[e+f x])^3\ (c+d\,\text{Tan}[e+f x])^{3/2}\,dx$$

Optimal (type 3, 256 leaves, 11 steps) :

$$\frac{(i a+b)^3\ (c-i d)^{3/2}\ \text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{f}-\frac{(i a-b)^3\ (c+i d)^{3/2}\ \text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{f}+$$
$$\frac{2 \left(3 a^2 b c-b^3 c+a^3 d-3 a b^2 d\right) \sqrt{c+d\,\text{Tan}[e+f x]}}{f}+\frac{2 b \left(3 a^2-b^2\right) \left(c+d\,\text{Tan}[e+f x]\right)^{3/2}}{3 f}-$$
$$\frac{4 b^2 (b c-8 a d) \left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}{35 d^2 f}+\frac{2 b^2 \left(a+b\,\text{Tan}[e+f x]\right) \left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}{7 d f}$$

Result (type 3, 666 leaves) :

$$-\left(\left(\left(\mathrm{i}\,\left(a^3 c^2-3 a b^2 c^2-6 a^2 b c d+2 b^3 c d-a^3 d^2+3 a b^2 d^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i} d}}\right]}{\sqrt{c-\mathrm{i} d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i} d}}\right]}{\sqrt{c+\mathrm{i} d}}\right)\text{Cos}[e+f x]^5\,(a+b \text{Tan}[e+f x])^3\,(c+d \text{Tan}[e+f x])^2\right)\Big/\left(f\,(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3\,(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)\right)-$$

$$\left(\left(3 a^2 b c^2-b^3 c^2+2 a^3 c d-6 a b^2 c d-3 a^2 b d^2+b^3 d^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i} d}}\right]}{\sqrt{c-\mathrm{i} d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i} d}}\right]}{\sqrt{c+\mathrm{i} d}}\right)\text{Cos}[e+f x]^5\,(a+b \text{Tan}[e+f x])^3\,(c+d \text{Tan}[e+f x])^2\right)\Big/$$

$$\left(f\,(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3\,(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)+$$

$$\left(\text{Cos}[e+f x]^4\,(a+b \text{Tan}[e+f x])^3\,(c+d \text{Tan}[e+f x])^{3/2}\left(\frac{1}{105 d^2}2\left(-6 b^3 c^3+63 a b^2 c^2 d+420 a^2 b c d^2-164 b^3 c d^2+105 a^3 d^3-378 a b^2 d^3\right)+\frac{2}{35} b^2\,(8 b c+21 a d)\,\text{Sec}[e+f x]^2-\frac{1}{105 d}2\,\text{Sec}[e+f x]\,\left(-3 b^3 c^2 \text{Sin}[e+f x]-126 a b^2 c d \text{Sin}[e+f x]-105 a^2 b d^2 \text{Sin}[e+f x]+50 b^3 d^2 \text{Sin}[e+f x]\right)+\frac{2}{7} b^3 d\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\Big/\left(f\,(a \text{Cos}[e+f x]+b \text{Sin}[e+f x])^3\,(c \text{Cos}[e+f x]+d \text{Sin}[e+f x])\right)$$

Problem 1236: Result more than twice size of optimal antiderivative.

$$\int (a+b \text{Tan}[e+f x])^2\,(c+d \text{Tan}[e+f x])^{3/2}\,dx$$

Optimal (type 3, 195 leaves, 10 steps):

$$-\frac{i\,(a-i\,b)^2\,(c-i\,d)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{f}+\frac{i\,(a+i\,b)^2\,(c+i\,d)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{f}+\frac{2\,(2\,a\,b\,c+a^2\,d-b^2\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+\frac{4\,a\,b\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}+\frac{2\,b^2\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}{5\,d\,f}$$

Result (type 3, 543 leaves):

$$\left(\text{Cos}[e+f\,x]^3\left(\frac{2\,(3\,b^2\,c^2+40\,a\,b\,c\,d+15\,a^2\,d^2-18\,b^2\,d^2)}{15\,d}+\frac{2}{5}\,b^2\,d\,\text{Sec}[e+f\,x]^2+\frac{4}{15}\,\text{Sec}[e+f\,x]\right.\right.$$
$$\left.\left.(3\,b^2\,c\,\text{Sin}[e+f\,x]+5\,a\,b\,d\,\text{Sin}[e+f\,x])\right)\,(a+b\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\right)\Big/$$
$$\left(f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\right)-$$
$$\left(i\,(a^2\,c^2-b^2\,c^2-4\,a\,b\,c\,d-a^2\,d^2+b^2\,d^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{\sqrt{c+i\,d}}\right)\right.$$
$$\left.\text{Cos}[e+f\,x]^4\,(a+b\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^2\right)\Big/$$
$$\left(f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right)-$$
$$\left((2\,a\,b\,c^2+2\,a^2\,c\,d-2\,b^2\,c\,d-2\,a\,b\,d^2)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{\sqrt{c+i\,d}}\right)\right.$$
$$\left.\text{Cos}[e+f\,x]^4\,(a+b\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^2\right)\Big/$$
$$\left(f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\right)$$

Problem 1237: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 150 leaves, 9 steps):

$$-\frac{(i\,a+b)\,(c-i\,d)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{f}+\frac{(i\,a-b)\,(c+i\,d)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{f}+\frac{2\,(b\,c+a\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+\frac{2\,b\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}$$

Result (type 3, 442 leaves):

$$-\left(\left(\left(i\left(a c^2-2 b c d-a d^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{\sqrt{c-i d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{\sqrt{c+i d}}\right)\right.\right.\right.$$

$$\left.\text{Cos}[e+f x]^3 (a+b \text{Tan}[e+f x]) (c+d \text{Tan}[e+f x])^2\right)\Big/$$

$$\left.\left(f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x]) (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)\right)-$$

$$\left(\left(b c^2+2 a c d-b d^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{\sqrt{c-i d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{\sqrt{c+i d}}\right)\right.$$

$$\left.\text{Cos}[e+f x]^3 (a+b \text{Tan}[e+f x]) (c+d \text{Tan}[e+f x])^2\right)\Big/$$

$$\left(f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x]) (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])^2\right)+$$

$$\left(\text{Cos}[e+f x]^2 (a+b \text{Tan}[e+f x]) (c+d \text{Tan}[e+f x])^{3/2}\left(\frac{2}{3} (4 b c+3 a d)+\frac{2}{3} b d \text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(f (a \text{Cos}[e+f x]+b \text{Sin}[e+f x]) (c \text{Cos}[e+f x]+d \text{Sin}[e+f x])\right)$$

Problem 1239: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d \text{Tan}[e+f x])^{3/2}}{(a+b \text{Tan}[e+f x])^2} \, dx$$

Optimal (type 3, 239 leaves, 12 steps):

$$-\frac{i (c-i d)^{3/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{(a-i b)^2 f}+\frac{i (c+i d)^{3/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{(a+i b)^2 f}-$$

$$\frac{\sqrt{b c-a d} \left(4 a b c-a^2 d+3 b^2 d\right) \text{ArcTanh}\left[\frac{\sqrt{b} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{b c-a d}}\right]}{\sqrt{b} \left(a^2+b^2\right)^2 f}-\frac{(b c-a d) \sqrt{c+d \text{Tan}[e+f x]}}{\left(a^2+b^2\right) f (a+b \text{Tan}[e+f x])}$$

Result (type ?, 421 251 leaves): Display of huge result suppressed!

Problem 1240: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{(a+b\,\mathrm{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 341 leaves, 13 steps):

$$-\frac{(c-i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(i\,a+b)^3\,f}+\frac{(c+i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(i\,a-b)^3\,f}+$$
$$\left(\left(24\,a^3\,b\,c\,d-40\,a\,b^3\,c\,d-3\,a^4\,d^2-2\,a^2\,b^2\,(12\,c^2-13\,d^2)+b^4\,(8\,c^2-3\,d^2)\right)\right.$$
$$\left.\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]\right)\Big/\left(4\,\sqrt{b}\,(a^2+b^2)^3\,\sqrt{b\,c-a\,d}\,f\right)-$$
$$\frac{(b\,c-a\,d)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{2\,(a^2+b^2)\,f\,(a+b\,\mathrm{Tan}[e+f\,x])^2}-\frac{(8\,a\,b\,c-3\,a^2\,d+5\,b^2\,d)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{4\,(a^2+b^2)^2\,f\,(a+b\,\mathrm{Tan}[e+f\,x])}$$

Result (type ?, 579 734 leaves): Display of huge result suppressed!

Problem 1241: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 322 leaves, 12 steps):

$$\frac{(i\,a+b)^3\,(c-i\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{f}-\frac{(i\,a-b)^3\,(c+i\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{f}+$$
$$\frac{1}{f}2\,\left(2\,a^3\,c\,d-6\,a\,b^2\,c\,d+3\,a^2\,b\,(c^2-d^2)-b^3\,(c^2-d^2)\right)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}+$$
$$\frac{2\,(3\,a^2\,b\,c-b^3\,c+a^3\,d-3\,a\,b^2\,d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{3\,f}+\frac{2\,b\,(3\,a^2-b^2)\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}{5\,f}-$$
$$\frac{4\,b^2\,(b\,c-10\,a\,d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{7/2}}{63\,d^2\,f}+\frac{2\,b^2\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{7/2}}{9\,d\,f}$$

Result (type 3, 826 leaves):

$$\frac{1}{f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^3\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2}$$

$$\mathrm{Cos}[e+f\,x]^5\left(-\frac{1}{315\,d^2}2\,(10\,b^3\,c^4-135\,a\,b^2\,c^3\,d-1449\,a^2\,b\,c^2\,d^2+558\,b^3\,c^2\,d^2-735\,a^3\,c\,d^3+2610\,a\,b^2\,c\,d^3+1134\,a^2\,b\,d^4-413\,b^3\,d^4)+\frac{2}{315}b\,(75\,b^2\,c^2+405\,a\,b\,c\,d+189\,a^2\,d^2-133\,b^2\,d^2)\,\mathrm{Sec}[e+f\,x]^2+\frac{2}{9}b^3\,d^2\,\mathrm{Sec}[e+f\,x]^4+\frac{2}{63}\mathrm{Sec}[e+f\,x]^3\,(19\,b^3\,c\,d\,\mathrm{Sin}[e+f\,x]+27\,a\,b^2\,d^2\,\mathrm{Sin}[e+f\,x])-\frac{1}{315\,d}2\,\mathrm{Sec}[e+f\,x]\,(-5\,b^3\,c^3\,\mathrm{Sin}[e+f\,x]-405\,a\,b^2\,c^2\,d\,\mathrm{Sin}[e+f\,x]-693\,a^2\,b\,c\,d^2\,\mathrm{Sin}[e+f\,x]+326\,b^3\,c\,d^2\,\mathrm{Sin}[e+f\,x]-105\,a^3\,d^3\,\mathrm{Sin}[e+f\,x]+450\,a\,b^2\,d^3\,\mathrm{Sin}[e+f\,x])\right)$$

$$(a+b\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}-$$

$$\left(\mathrm{i}\,(a^3\,c^3-3\,a\,b^2\,c^3-9\,a^2\,b\,c^2\,d+3\,b^3\,c^2\,d-3\,a^3\,c\,d^2+9\,a\,b^2\,c\,d^2+3\,a^2\,b\,d^3-b^3\,d^3)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\mathrm{Cos}[e+f\,x]^6\,(a+b\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^3\right)\Big/$$

$$\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^3\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3\right)-$$

$$\left((3\,a^2\,b\,c^3-b^3\,c^3+3\,a^3\,c^2\,d-9\,a\,b^2\,c^2\,d-9\,a^2\,b\,c\,d^2+3\,b^3\,c\,d^2-a^3\,d^3+3\,a\,b^2\,d^3)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\mathrm{Cos}[e+f\,x]^6\,(a+b\,\mathrm{Tan}[e+f\,x])^3\,(c+d\,\mathrm{Tan}[e+f\,x])^3\right)\Big/$$

$$\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^3\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3\right)$$

Problem 1242: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Tan}[e+f\,x])^2\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 231 leaves, 11 steps):

$$-\frac{\mathrm{i}\,(a-\mathrm{i}\,b)^2\,(c-\mathrm{i}\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{f}+\frac{\mathrm{i}\,(a+\mathrm{i}\,b)^2\,(c+\mathrm{i}\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{f}+$$
$$\frac{4\,(b\,c+a\,d)\,(a\,c-b\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}+\frac{2\,(2\,a\,b\,c+a^2\,d-b^2\,d)\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}+$$
$$\frac{4\,a\,b\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}{5\,f}+\frac{2\,b^2\,(c+d\,\text{Tan}[e+f\,x])^{7/2}}{7\,d\,f}$$

Result (type 3, 648 leaves):

$$-\left(\left(\left(\mathrm{i}\,\left(a^2 c^3-b^2 c^3-6 a b c^2 d-3 a^2 c d^2+3 b^2 c d^2+2 a b d^3\right)\right.\right.\right.$$

$$\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)$$

$$\left.\text{Cos}[e+f x]^5\,\left(a+b\,\text{Tan}[e+f x]\right)^2\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)\Big/$$

$$\left.\left(f\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^2\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\right)\right)-$$

$$\left(\left(2 a b c^3+3 a^2 c^2 d-3 b^2 c^2 d-6 a b c d^2-a^2 d^3+b^2 d^3\right)\right.$$

$$\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)$$

$$\left.\text{Cos}[e+f x]^5\,\left(a+b\,\text{Tan}[e+f x]\right)^2\,\left(c+d\,\text{Tan}[e+f x]\right)^3\right)\Big/$$

$$\left(f\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^2\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\right)+$$

$$\left(\text{Cos}[e+f x]^4\,\left(a+b\,\text{Tan}[e+f x]\right)^2\,\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}\right.$$

$$\left(\frac{2\,\left(15 b^2 c^3+322 a b c^2 d+245 a^2 c d^2-290 b^2 c d^2-252 a b d^3\right)}{105 d}+\frac{2}{35}\,b\,d\,\left(15 b c+14 a d\right)\right.$$

$$\text{Sec}[e+f x]^2+\frac{2}{105}\,\text{Sec}[e+f x]\,\left(45 b^2 c^2\,\text{Sin}[e+f x]+154 a b c d\,\text{Sin}[e+f x]+\right.$$

$$\left.\left.\left.35 a^2 d^2\,\text{Sin}[e+f x]-50 b^2 d^2\,\text{Sin}[e+f x]\right)+\frac{2}{7}\,b^2 d^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(f\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^2\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2\right)$$

Problem 1243: Result more than twice size of optimal antiderivative.

$$\int\left(a+b\,\text{Tan}[e+f x]\right)\,\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}\,dx$$

Optimal (type 3, 188 leaves, 10 steps):

$$-\frac{(\mathrm{i}\,a+b)\,(c-\mathrm{i}\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{f}+\frac{(\mathrm{i}\,a-b)\,(c+\mathrm{i}\,d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{f}+\frac{2\,\left(2\,a\,c\,d+b\,\left(c^2-d^2\right)\right)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{f}+\frac{2\,(b\,c+a\,d)\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{3\,f}+\frac{2\,b\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}{5\,f}$$

Result (type 3, 506 leaves):

$$\left(\mathrm{Cos}[e+f\,x]^3\,\left(\frac{2}{15}\,\left(23\,b\,c^2+35\,a\,c\,d-18\,b\,d^2\right)+\frac{2}{5}\,b\,d^2\,\mathrm{Sec}[e+f\,x]^2+\frac{2}{15}\,\mathrm{Sec}[e+f\,x]\,\left(11\,b\,c\,d\,\mathrm{Sin}[e+f\,x]+5\,a\,d^2\,\mathrm{Sin}[e+f\,x]\right)\right)\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\right)\Big/\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\right)-$$

$$\left(\mathrm{i}\,\left(a\,c^3-3\,b\,c^2\,d-3\,a\,c\,d^2+b\,d^3\right)\,\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\,\mathrm{Cos}[e+f\,x]^4\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^3\right)\Big/\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3\right)-$$

$$\left(\left(b\,c^3+3\,a\,c^2\,d-3\,b\,c\,d^2-a\,d^3\right)\,\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\,\mathrm{Cos}[e+f\,x]^4\,(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^3\right)\Big/\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3\right)$$

Problem 1244: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}{a+b\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 195 leaves, 12 steps):

$$\frac{(c-i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{(i a+b) f}-\frac{(c+i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{(i a-b) f}-$$
$$\frac{2 (b c-a d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{b} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{b c-a d}}\right]}{b^{3/2} \left(a^2+b^2\right) f}+\frac{2 d^2 \sqrt{c+d \text{Tan}[e+f x]}}{b f}$$

Result (type ?, 354 997 leaves) : Display of huge result suppressed!

Problem 1245: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d \text{Tan}[e+f x])^{5/2}}{(a+b \text{Tan}[e+f x])^2} \, dx$$

Optimal (type 3, 243 leaves, 12 steps) :

$$-\frac{i (c-i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{(a-i b)^2 f}+\frac{i (c+i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{(a+i b)^2 f}-$$
$$\frac{(b c-a d)^{3/2} \left(4 a b c+a^2 d+5 b^2 d\right) \text{ArcTanh}\left[\frac{\sqrt{b} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{b c-a d}}\right]}{b^{3/2} \left(a^2+b^2\right)^2 f}-\frac{(b c-a d)^2 \sqrt{c+d \text{Tan}[e+f x]}}{b \left(a^2+b^2\right) f (a+b \text{Tan}[e+f x])}$$

Result (type ?, 576 860 leaves) : Display of huge result suppressed!

Problem 1246: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d \text{Tan}[e+f x])^{5/2}}{(a+b \text{Tan}[e+f x])^3} \, dx$$

Optimal (type 3, 355 leaves, 13 steps) :

$$-\frac{(c-i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c-i d}}\right]}{(i a+b)^3 f}+\frac{(c+i d)^{5/2} \text{ArcTanh}\left[\frac{\sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{c+i d}}\right]}{(i a-b)^3 f}+\frac{1}{4 b^{3/2} \left(a^2+b^2\right)^3 f}$$
$$\sqrt{b c-a d} \left(8 a^3 b c d-56 a b^3 c d+a^4 d^2+b^4 \left(8 c^2-15 d^2\right)-6 a^2 b^2 \left(4 c^2-3 d^2\right)\right)$$
$$\text{ArcTanh}\left[\frac{\sqrt{b} \sqrt{c+d \text{Tan}[e+f x]}}{\sqrt{b c-a d}}\right]-\frac{(b c-a d)^2 \sqrt{c+d \text{Tan}[e+f x]}}{2 b \left(a^2+b^2\right) f (a+b \text{Tan}[e+f x])^2}-$$
$$\frac{(b c-a d) \left(8 a b c+a^2 d+9 b^2 d\right) \sqrt{c+d \text{Tan}[e+f x]}}{4 b \left(a^2+b^2\right)^2 f (a+b \text{Tan}[e+f x])}$$

Result (type ?, 783 192 leaves) : Display of huge result suppressed!

Problem 1252: Humongous result has more than 200000 leaves.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])^2\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 244 leaves, 12 steps):

$$-\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(a-i\,b)^2\,\sqrt{c-i\,d}\,f}+\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(a+i\,b)^2\,\sqrt{c+i\,d}\,f}-$$
$$\frac{b^{3/2}\,(4\,a\,b\,c-5\,a^2\,d-b^2\,d)\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)^2\,(b\,c-a\,d)^{3/2}\,f}-\frac{b^2\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{(a^2+b^2)\,(b\,c-a\,d)\,f\,(a+b\,\mathrm{Tan}[e+f\,x])}$$

Result (type ?, 273 224 leaves): Display of huge result suppressed!

Problem 1253: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^4}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 317 leaves, 10 steps):

$$-\frac{i\,(a-i\,b)^4\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{i\,(a+i\,b)^4\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(c+i\,d)^{3/2}\,f}-$$
$$\frac{2\,(b\,c-a\,d)^2\,(a+b\,\mathrm{Tan}[e+f\,x])^2}{d\,(c^2+d^2)\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}-\frac{1}{3\,d^3\,(c^2+d^2)\,f}$$
$$2\,b\,\left(15\,a^2\,b\,c\,d^2-6\,a^3\,d^3-12\,a\,b^2\,d\,(2\,c^2+d^2)+b^3\,(8\,c^3+5\,c\,d^2)\right)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\;-$$
$$\frac{1}{3\,d^2\,(c^2+d^2)\,f}2\,b^2\,\left(3\,a\,d\,(2\,b\,c-a\,d)-b^2\,(4\,c^2+d^2)\right)\,\mathrm{Tan}[e+f\,x]\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}$$

Result (type 3, 742 leaves):

$$\left(\text{Cos}[e+f x]^2 \left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2 \left(a+b\,\text{Tan}[e+f x]\right)^4\right.$$
$$\left(-\left(\left(2\left(8 b^4 c^4-24 a b^3 c^3 d+18 a^2 b^2 c^2 d^2+5 b^4 c^2 d^2-12 a^3 b c d^3-12 a b^3 c d^3+3 a^4 d^4\right)\right)\Big/\right.\right.$$
$$\left.\left(3 c\left(c-\mathrm{i}\,d\right)\left(c+\mathrm{i}\,d\right) d^3\right)\right)+\left(2\left(b^4 c^4\,\text{Sin}[e+f x]-4 a b^3 c^3 d\,\text{Sin}[e+f x]+\right.\right.$$
$$\left.\left.6 a^2 b^2 c^2 d^2\,\text{Sin}[e+f x]-4 a^3 b c d^3\,\text{Sin}[e+f x]+a^4 d^4\,\text{Sin}[e+f x]\right)\right)\Big/$$
$$\left.\left.\left(c\left(c-\mathrm{i}\,d\right)\left(c+\mathrm{i}\,d\right) d^2\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\right)+\frac{2 b^4\,\text{Tan}[e+f x]}{3 d^2}\right)\right)\Big/$$
$$\left(f\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^4\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}\right)+$$
$$\left(\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^{3/2}\left(a+b\,\text{Tan}[e+f x]\right)^4\right.$$
$$\left(-\left(\left(\mathrm{i}\left(a^4 c-6 a^2 b^2 c+b^4 c+4 a^3 b d-4 a b^3 d\right)\right.\right.\right.$$
$$\left.\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\text{Tan}[e+f x]}\right)\Big/$$
$$\left.\left(\sqrt{\text{Sec}[e+f x]}\,\sqrt{c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]}\right)\right)-\left(\left(4 a^3 b c-4 a b^3 c-a^4 d+6 a^2 b^2 d-\right.\right.$$
$$\left.\left.b^4 d\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\text{Tan}[e+f x]}\right)\Big/$$
$$\left.\left.\left(\sqrt{\text{Sec}[e+f x]}\,\sqrt{c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]}\right)\right)\right)\Big/$$
$$\left(\left(c-\mathrm{i}\,d\right)\left(c+\mathrm{i}\,d\right) f\,\text{Sec}[e+f x]^{5/2}\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^4\right.$$
$$\left.\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}\right)$$

Problem 1254: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[e+f x]\right)^3}{\left(c+d\,\text{Tan}[e+f x]\right)^{3/2}}\,dx$$

Optimal (type 3, 216 leaves, 9 steps):

$$\frac{(\mathrm{i}\, a+b)^3 \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{(c-\mathrm{i}\, d)^{3/2} f}-\frac{(\mathrm{i}\, a-b)^3 \operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{(c+\mathrm{i}\, d)^{3/2} f}-\frac{2 (b c-a d)^2 (a+b \operatorname{Tan}[e+f x])}{d (c^2+d^2) f \sqrt{c+d \operatorname{Tan}[e+f x]}}-\frac{2 b \left(a d (2 b c-a d)-b^2 (2 c^2+d^2)\right) \sqrt{c+d \operatorname{Tan}[e+f x]}}{d^2 (c^2+d^2) f}$$

Result (type 3, 659 leaves) :

$$\left(\operatorname{Cos}[e+f x] (c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x])^2 \left(\frac{2 (2 b^3 c^3-3 a b^2 c^2 d+3 a^2 b c d^2+b^3 c d^2-a^3 d^3)}{c (c-\mathrm{i}\, d) (c+\mathrm{i}\, d) d^2}-\left(2 (b^3 c^3 \operatorname{Sin}[e+f x]-3 a b^2 c^2 d \operatorname{Sin}[e+f x]+3 a^2 b c d^2 \operatorname{Sin}[e+f x]-a^3 d^3 \operatorname{Sin}[e+f x])\right) \Big/ \left(c (c-\mathrm{i}\, d) (c+\mathrm{i}\, d) d (c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x])\right)\right) (a+b \operatorname{Tan}[e+f x])^3\right) \Big/ \left(f (a \operatorname{Cos}[e+f x]+b \operatorname{Sin}[e+f x])^3 (c+d \operatorname{Tan}[e+f x])^{3/2}\right)+$$

$$\left((c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x])^{3/2} (a+b \operatorname{Tan}[e+f x])^3 \left(-\left(\left(\mathrm{i}\, (a^3 c-3 a b^2 c+3 a^2 b d-b^3 d) \left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{\sqrt{c-\mathrm{i}\, d}}-\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{\sqrt{c+\mathrm{i}\, d}}\right) \sqrt{c+d \operatorname{Tan}[e+f x]}\right) \Big/ \left(\sqrt{\operatorname{Sec}[e+f x]} \sqrt{c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]}\right)\right)-\left((3 a^2 b c-b^3 c-a^3 d+3 a b^2 d) \left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{\sqrt{c-\mathrm{i}\, d}}+\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{c+d \operatorname{Tan}[e+f x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{\sqrt{c+\mathrm{i}\, d}}\right) \sqrt{c+d \operatorname{Tan}[e+f x]}\right) \Big/ \left(\sqrt{\operatorname{Sec}[e+f x]} \sqrt{c \operatorname{Cos}[e+f x]+d \operatorname{Sin}[e+f x]}\right)\right)\right) \Big/ \left((c-\mathrm{i}\, d) (c+\mathrm{i}\, d) f \operatorname{Sec}[e+f x]^{3/2} (a \operatorname{Cos}[e+f x]+b \operatorname{Sin}[e+f x])^3 (c+d \operatorname{Tan}[e+f x])^{3/2}\right)$$

Problem 1255: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b \operatorname{Tan}[e+f x])^2}{(c+d \operatorname{Tan}[e+f x])^{3/2}} \, dx$$

Optimal (type 3, 150 leaves, 8 steps) :

$$-\frac{i\,(a-i\,b)^2\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{i\,(a+i\,b)^2\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(c+i\,d)^{3/2}\,f}-\frac{2\,(b\,c-a\,d)^2}{d\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 3, 575 leaves):

$$\left((c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^2\left(-\frac{2\,(-b\,c+a\,d)^2}{c\,(c-i\,d)\,(c+i\,d)\,d}+\frac{2\,(b^2\,c^2\,\text{Sin}[e+f\,x]-2\,a\,b\,c\,d\,\text{Sin}[e+f\,x]+a^2\,d^2\,\text{Sin}[e+f\,x])}{c\,(c-i\,d)\,(c+i\,d)\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])}\right)(a+b\,\text{Tan}[e+f\,x])^2\right)\Big/\left(f\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\right)+$$

$$\left((c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])^{3/2}\,(a+b\,\text{Tan}[e+f\,x])^2\left(-\left(\left(i\,(a^2\,c-b^2\,c+2\,a\,b\,d)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{\sqrt{c+i\,d}}\right)\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]}\right)\right)-\left((2\,a\,b\,c-a^2\,d+b^2\,d)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{\sqrt{c-i\,d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{\sqrt{c+i\,d}}\right)\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\text{Sec}[e+f\,x]}\,\sqrt{c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x]}\right)\right)\right)\Big/\left((c-i\,d)\,(c+i\,d)\,f\,\sqrt{\text{Sec}[e+f\,x]}\,(a\,\text{Cos}[e+f\,x]+b\,\text{Sin}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\right)$$

Problem 1256: Result more than twice size of optimal antiderivative.

$$\int\frac{a+b\,\text{Tan}[e+f\,x]}{(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 138 leaves, 8 steps):

$$-\frac{(\mathrm{i}\, a+b)\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{(c-\mathrm{i}\, d)^{3/2}\, f}+\frac{(\mathrm{i}\, a-b)\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{(c+\mathrm{i}\, d)^{3/2}\, f}+\frac{2\,(b\,c-a\,d)}{(c^2+d^2)\, f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 537 leaves):

$$\left(\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2\left(-\frac{2\,(-b\,c+a\,d)}{c\,(c-\mathrm{i}\, d)\,(c+\mathrm{i}\, d)}-\frac{2\,(b\,c\,d\,\mathrm{Sin}[e+f\,x]-a\,d^2\,\mathrm{Sin}[e+f\,x])}{c\,(c-\mathrm{i}\, d)\,(c+\mathrm{i}\, d)\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])}\right)(a+b\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}\right)+$$

$$\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{3/2}\,(a+b\,\mathrm{Tan}[e+f\,x])\right.$$

$$\left(-\left(\left(\mathrm{i}\,(a\,c+b\,d)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{\sqrt{c-\mathrm{i}\, d}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{\sqrt{c+\mathrm{i}\, d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$\left((b\,c-a\,d)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\, d}}\right]}{\sqrt{c-\mathrm{i}\, d}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\, d}}\right]}{\sqrt{c+\mathrm{i}\, d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\Big/$$

$$\left((c-\mathrm{i}\, d)\,(c+\mathrm{i}\, d)\, f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}\right)$$

Problem 1257: Humongous result has more than 200000 leaves.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 211 leaves, 12 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(i\,a+b)\,(c-i\,d)^{3/2}\,f}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(i\,a-b)\,(c+i\,d)^{3/2}\,f}-\frac{2\,b^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)\,(b\,c-a\,d)^{3/2}\,f}+\frac{2\,d^2}{(b\,c-a\,d)\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 229 690 leaves) : Display of huge result suppressed!

Problem 1258: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 314 leaves, 13 steps) :

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(a-i\,b)^2\,(c-i\,d)^{3/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(a+i\,b)^2\,(c+i\,d)^{3/2}\,f}-\frac{b^{5/2}\,(4\,a\,b\,c-7\,a^2\,d-3\,b^2\,d)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)^2\,(b\,c-a\,d)^{5/2}\,f}-\frac{d\,(2\,a^2\,d^2+b^2\,(c^2+3\,d^2))}{(a^2+b^2)\,(b\,c-a\,d)^2\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-\frac{b^2}{(a^2+b^2)\,(b\,c-a\,d)\,f\,(a+b\,\text{Tan}[e+f\,x])\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 591 590 leaves) : Display of huge result suppressed!

Problem 1259: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^4}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 290 leaves, 10 steps) :

$$-\frac{i\,(a-i\,b)^4\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,(a+i\,b)^4\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(c+i\,d)^{5/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,(a+b\,\text{Tan}[e+f\,x])^2}{3\,d\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{4\,(b\,c-a\,d)^3\,(2\,b\,c^2+3\,a\,c\,d+5\,b\,d^2)}{3\,d^3\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-\frac{2\,b^2\,(a\,d\,(2\,b\,c-a\,d)-b^2\,(4\,c^2+3\,d^2))\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,d^3\,(c^2+d^2)\,f}$$

Result (type 3, 947 leaves) :

$$\frac{1}{f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,\mathrm{Cos}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3$$

$$\Bigg(-\Big(\Big(2\,\big(-8\,b^4\,c^5+8\,a\,b^3\,c^4\,d+6\,a^2\,b^2\,c^3\,d^2-18\,b^4\,c^3\,d^2-16\,a^3\,b\,c^2\,d^3+36\,a\,b^3\,c^2\,d^3+7\,a^4\,c\,d^4-36\,a^2\,b^2\,c\,d^4-3\,b^4\,c\,d^4+12\,a^3\,b\,d^5\big)\Big)\Big/\Big(3\,c\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,d^3\Big)\Big)-$$

$$\frac{2\,(b\,c-a\,d)^4}{3\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,d\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2}-$$

$$\Big(8\,\big(b^4\,c^5\,\mathrm{Sin}[e+f\,x]-a\,b^3\,c^4\,d\,\mathrm{Sin}[e+f\,x]-3\,a^2\,b^2\,c^3\,d^2\,\mathrm{Sin}[e+f\,x]+3\,b^4\,c^3\,d^2\,\mathrm{Sin}[e+f\,x]+5\,a^3\,b\,c^2\,d^3\,\mathrm{Sin}[e+f\,x]-9\,a\,b^3\,c^2\,d^3\,\mathrm{Sin}[e+f\,x]-2\,a^4\,c\,d^4\,\mathrm{Sin}[e+f\,x]+9\,a^2\,b^2\,c\,d^4\,\mathrm{Sin}[e+f\,x]-3\,a^3\,b\,d^5\,\mathrm{Sin}[e+f\,x]\big)\Big)\Big/$$

$$\Big(3\,c\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,d^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\Big)\Bigg)\,(a+b\,\mathrm{Tan}[e+f\,x])^4+$$

$$\Bigg((c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{5/2}\,(a+b\,\mathrm{Tan}[e+f\,x])^4$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{i}\,\big(a^4\,c^2-6\,a^2\,b^2\,c^2+b^4\,c^2+8\,a^3\,b\,c\,d-8\,a\,b^3\,c\,d-a^4\,d^2+6\,a^2\,b^2\,d^2-b^4\,d^2\big)$$

$$\left(\frac{\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\Big]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\Big]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Bigg)\Bigg/$$

$$\Big(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\Big)\Bigg)-$$

$$\Bigg(\big(4\,a^3\,b\,c^2-4\,a\,b^3\,c^2-2\,a^4\,c\,d+12\,a^2\,b^2\,c\,d-2\,b^4\,c\,d-4\,a^3\,b\,d^2+4\,a\,b^3\,d^2\big)$$

$$\left(\frac{\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\Big]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTanh}\Big[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\Big]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Bigg)\Bigg/$$

$$\Big(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\Big)\Bigg)\Bigg)\Bigg/$$

$$\Big((c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,f\,\mathrm{Sec}[e+f\,x]^{3/2}\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^4$$

$$\left.(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\right)$$

Problem 1260: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^3}{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 219 leaves, 9 steps):

$$\frac{(i\,a+b)^3\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{5/2}\,f}-\frac{(i\,a-b)^3\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(c+i\,d)^{5/2}\,f}-$$
$$\frac{2\,(b\,c-a\,d)^2\,(a+b\,\mathrm{Tan}[e+f\,x])}{3\,d\,(c^2+d^2)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}-\frac{4\,(b\,c-a\,d)^2\,(3\,a\,c\,d+b\,(c^2+4\,d^2))}{3\,d^2\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 787 leaves):

$$\left(\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^3\left(-\frac{2\left(b\,c-a\,d\right)^2\left(2\,b\,c^2+7\,a\,c\,d+9\,b\,d^2\right)}{3\,c\left(c-\mathrm{i}\,d\right)^2\left(c+\mathrm{i}\,d\right)^2 d^2}+\frac{2\left(b\,c-a\,d\right)^3}{3\left(c-\mathrm{i}\,d\right)^2\left(c+\mathrm{i}\,d\right)^2\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^2}+\left(2\left(b^3 c^4\,\mathrm{Sin}[e+f\,x]+6\,a\,b^2 c^3 d\,\mathrm{Sin}[e+f\,x]-15\,a^2 b\,c^2 d^2\,\mathrm{Sin}[e+f\,x]+9\,b^3 c^2 d^2\,\mathrm{Sin}[e+f\,x]+8\,a^3 c\,d^3\,\mathrm{Sin}[e+f\,x]-18\,a\,b^2 c\,d^3\,\mathrm{Sin}[e+f\,x]+9\,a^2 b\,d^4\,\mathrm{Sin}[e+f\,x]\right)\right)\Big/\left(3\,c\left(c-\mathrm{i}\,d\right)^2\left(c+\mathrm{i}\,d\right)^2 d\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)\right)\right)\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right)\Big/$$

$$\left(f\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^{5/2}\right)+$$

$$\left(\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^{5/2}\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right.$$

$$\left(-\left(\left(\mathrm{i}\left(a^3 c^2-3\,a\,b^2 c^2+6\,a^2 b\,c\,d-2\,b^3 c\,d-a^3 d^2+3\,a\,b^2 d^2\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-\right.$$

$$\left(\left(3\,a^2 b\,c^2-b^3 c^2-2\,a^3 c\,d+6\,a\,b^2 c\,d-3\,a^2 b\,d^2+b^3 d^2\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\Big/$$

$$\left(\left(c-\mathrm{i}\,d\right)^2\left(c+\mathrm{i}\,d\right)^2 f\,\sqrt{\mathrm{Sec}[e+f\,x]}\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^{5/2}\right)$$

Problem 1261: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^2}{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 195 leaves, 9 steps):

$$-\frac{i\,(a-i\,b)^2\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,(a+i\,b)^2\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(c+i\,d)^{5/2}\,f}-\frac{2\,(b\,c-a\,d)^2}{3\,d\,(c^2+d^2)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}+\frac{4\,(b\,c-a\,d)\,(a\,c+b\,d)}{(c^2+d^2)^2\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 732 leaves):

$$\Bigg(\text{Sec}[e+f x]\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^3\,\Bigg(-\frac{2\left(b^2 c^3-8 a b c^2 d+7 a^2 c d^2-6 b^2 c d^2+6 a b d^3\right)}{3 c\,(c-\mathbb{i}\,d)^2\,(c+\mathbb{i}\,d)^2\,d}-$$

$$\frac{2 d\,(b c-a d)^2}{3\,(c-\mathbb{i}\,d)^2\,(c+\mathbb{i}\,d)^2\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^2}+$$

$$\Big(4\,\big(b^2 c^3\,\text{Sin}[e+f x]-5 a b c^2 d\,\text{Sin}[e+f x]+4 a^2 c d^2\,\text{Sin}[e+f x]-3 b^2 c d^2\,\text{Sin}[e+f x]+$$

$$3 a b d^3\,\text{Sin}[e+f x]\big)\Big)\Big/\Big(3 c\,(c-\mathbb{i}\,d)^2\,(c+\mathbb{i}\,d)^2\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)\Big)\Bigg)$$

$$\left(a+b\,\text{Tan}[e+f x]\right)^2\Bigg)\Big/\left(f\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^2\,\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}\right)+$$

$$\Bigg(\sqrt{\text{Sec}[e+f x]}\,\left(c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]\right)^{5/2}\,\left(a+b\,\text{Tan}[e+f x]\right)^2$$

$$\Bigg(-\Bigg(\Bigg(\mathbb{i}\,\left(a^2 c^2-b^2 c^2+4 a b c d-a^2 d^2+b^2 d^2\right)$$

$$\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathbb{i}\,d}}\right]}{\sqrt{c-\mathbb{i}\,d}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathbb{i}\,d}}\right]}{\sqrt{c+\mathbb{i}\,d}}\right)\sqrt{c+d\,\text{Tan}[e+f x]}\Bigg)\Big/$$

$$\left(\sqrt{\text{Sec}[e+f x]}\,\sqrt{c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]}\right)\Bigg)-$$

$$\Bigg(\left(2 a b c^2-2 a^2 c d+2 b^2 c d-2 a b d^2\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c-\mathbb{i}\,d}}\right]}{\sqrt{c-\mathbb{i}\,d}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f x]}}{\sqrt{c+\mathbb{i}\,d}}\right]}{\sqrt{c+\mathbb{i}\,d}}\right)$$

$$\sqrt{c+d\,\text{Tan}[e+f x]}\Bigg)\Big/\left(\sqrt{\text{Sec}[e+f x]}\,\sqrt{c\,\text{Cos}[e+f x]+d\,\text{Sin}[e+f x]}\right)\Bigg)\Bigg)\Big/$$

$$\left((c-\mathbb{i}\,d)^2\,(c+\mathbb{i}\,d)^2\,f\,\left(a\,\text{Cos}[e+f x]+b\,\text{Sin}[e+f x]\right)^2\,\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}\right)$$

Problem 1262: Result more than twice size of optimal antiderivative.

$$\int\frac{a+b\,\text{Tan}[e+f x]}{\left(c+d\,\text{Tan}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 186 leaves, 9 steps):

$$-\frac{(\mathrm{i}\,a+b)\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{(c-\mathrm{i}\,d)^{5/2}\,f}+\frac{(\mathrm{i}\,a-b)\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{(c+\mathrm{i}\,d)^{5/2}\,f}+\frac{2\,(b\,c-a\,d)}{3\,(c^2+d^2)\,f\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}-\frac{2\,\left(2\,a\,c\,d-b\,(c^2-d^2)\right)}{(c^2+d^2)^2\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 3, 640 leaves):

$$\Bigg(\mathrm{Sec}[e+f\,x]^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^3\left(\frac{2\,(4\,b\,c^2-7\,a\,c\,d-3\,b\,d^2)}{3\,c\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2}+\frac{2\,d^2\,(b\,c-a\,d)}{3\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^2}-\left(2\,(5\,b\,c^2\,d\,\mathrm{Sin}[e+f\,x]-8\,a\,c\,d^2\,\mathrm{Sin}[e+f\,x]-3\,b\,d^3\,\mathrm{Sin}[e+f\,x])\right)\Big/\left(3\,c\,(c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])\right)\right)(a+b\,\mathrm{Tan}[e+f\,x])\Bigg)\Big/\left(f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\right)+$$

$$\Bigg(\mathrm{Sec}[e+f\,x]^{3/2}\,(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x])^{5/2}\,(a+b\,\mathrm{Tan}[e+f\,x])\left(-\left(\left(\mathrm{i}\,(a\,c^2+2\,b\,c\,d-a\,d^2)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)-\left((b\,c^2-2\,a\,c\,d-b\,d^2)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c-\mathrm{i}\,d}}\right]}{\sqrt{c-\mathrm{i}\,d}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{\sqrt{c+\mathrm{i}\,d}}\right]}{\sqrt{c+\mathrm{i}\,d}}\right)\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\Big/\left(\sqrt{\mathrm{Sec}[e+f\,x]}\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\Bigg)\Big/\left((c-\mathrm{i}\,d)^2\,(c+\mathrm{i}\,d)^2\,f\,(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}\right)$$

Problem 1263: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])\,(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 272 leaves, 13 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(i\,a+b)\,(c-i\,d)^{5/2}\,f}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(i\,a-b)\,(c+i\,d)^{5/2}\,f}-\frac{2\,b^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)\,(b\,c-a\,d)^{5/2}\,f}+\frac{2\,d^2}{3\,(b\,c-a\,d)\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{2\,d^2\,\left(2\,a\,c\,d-b\,(3\,c^2+d^2)\right)}{(b\,c-a\,d)^2\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 411 521 leaves): Display of huge result suppressed!

Problem 1264: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\text{Tan}[e+f\,x])^2\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 425 leaves, 14 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c-i\,d}}\right]}{(a-i\,b)^2\,(c-i\,d)^{5/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{c+i\,d}}\right]}{(a+i\,b)^2\,(c+i\,d)^{5/2}\,f}-\frac{b^{7/2}\,(4\,a\,b\,c-9\,a^2\,d-5\,b^2\,d)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{b\,c-a\,d}}\right]}{(a^2+b^2)^2\,(b\,c-a\,d)^{7/2}\,f}-\frac{d\,\left(2\,a^2\,d^2+b^2\,(3\,c^2+5\,d^2)\right)}{3\,(a^2+b^2)\,(b\,c-a\,d)^2\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{b^2}{(a^2+b^2)\,(b\,c-a\,d)\,f\,(a+b\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{d\,\left(4\,a^3\,c\,d^3+4\,a\,b^2\,c\,d^3-4\,a^2\,b\,d^2\,(2\,c^2+d^2)-b^3\,(c^4+10\,c^2\,d^2+5\,d^4)\right)}{(a^2+b^2)\,(b\,c-a\,d)^3\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 961 458 leaves): Display of huge result suppressed!

Problem 1265: Humongous result has more than 200000 leaves.

$$\int(a+b\,\text{Tan}[e+f\,x])^{5/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 337 leaves, 14 steps):

$$-\frac{i\,(a-i\,b)^{5/2}\sqrt{c-i\,d}\ \text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,(a+i\,b)^{5/2}\sqrt{c+i\,d}\ \text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{\sqrt{b}\,\left(10\,a\,b\,c\,d+15\,a^2\,d^2-b^2\,(c^2+8\,d^2)\right)\,\text{ArcTanh}\left[\frac{\sqrt{d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{4\,d^{3/2}\,f}-\frac{b\,(b\,c-9\,a\,d)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}{4\,d\,f}+\frac{b^2\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\ (c+d\,\text{Tan}[e+f\,x])^{3/2}}{2\,d\,f}$$

Result (type ?, 443 917 leaves): Display of huge result suppressed!

Problem 1266: Humongous result has more than 200000 leaves.

$$\int (a+b\,\text{Tan}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\ dx$$

Optimal (type 3, 258 leaves, 13 steps):

$$-\frac{i\,(a-i\,b)^{3/2}\sqrt{c-i\,d}\ \text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,(a+i\,b)^{3/2}\sqrt{c+i\,d}\ \text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{\sqrt{b}\,(b\,c+3\,a\,d)\,\text{ArcTanh}\left[\frac{\sqrt{d}\ \sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{d}\ f}+\frac{b\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}}{f}$$

Result (type ?, 349 177 leaves): Display of huge result suppressed!

Problem 1267: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{a+b\,\text{Tan}[e+f\,x]}\ \sqrt{c+d\,\text{Tan}[e+f\,x]}\ dx$$

Optimal (type 3, 218 leaves, 11 steps):

$$-\frac{i\sqrt{a-ib}\,\sqrt{c-id}\,\text{ArcTanh}\left[\frac{\sqrt{c-id}\,\sqrt{a+b\,\text{Tan}[e+fx]}}{\sqrt{a-ib}\,\sqrt{c+d\,\text{Tan}[e+fx]}}\right]}{f}+\frac{i\sqrt{a+ib}\,\sqrt{c+id}\,\text{ArcTanh}\left[\frac{\sqrt{c+id}\,\sqrt{a+b\,\text{Tan}[e+fx]}}{\sqrt{a+ib}\,\sqrt{c+d\,\text{Tan}[e+fx]}}\right]}{f}+\frac{2\sqrt{b}\,\sqrt{d}\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+fx]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+fx]}}\right]}{f}$$

Result (type 4, 177 263 leaves) : Display of huge result suppressed!

Problem 1268: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\text{Tan}[e+fx]}}{\sqrt{a+b\,\text{Tan}[e+fx]}}\,dx$$

Optimal (type 3, 163 leaves, 7 steps) :

$$-\frac{i\sqrt{c-id}\,\text{ArcTanh}\left[\frac{\sqrt{c-id}\,\sqrt{a+b\,\text{Tan}[e+fx]}}{\sqrt{a-ib}\,\sqrt{c+d\,\text{Tan}[e+fx]}}\right]}{\sqrt{a-ib}\,f}+\frac{i\sqrt{c+id}\,\text{ArcTanh}\left[\frac{\sqrt{c+id}\,\sqrt{a+b\,\text{Tan}[e+fx]}}{\sqrt{a+ib}\,\sqrt{c+d\,\text{Tan}[e+fx]}}\right]}{\sqrt{a+ib}\,f}$$

Result (type 3, 3289 leaves) :

$$\Bigg(i\Bigg(-\sqrt{a+ib}\,\sqrt{c-id}\,\text{Log}\Big[-\Big(\Big(2i\,\big(2ac-2ibd\,\text{Tan}[e+fx]+bc\,(-i+\text{Tan}[e+fx])+ad\,(-i+\text{Tan}[e+fx])\big)+2\sqrt{a-ib}\,\sqrt{c-id}\,\sqrt{a+b\,\text{Tan}[e+fx]}\,\sqrt{c+d\,\text{Tan}[e+fx]}\Big)\Big/\Big(\sqrt{a-ib}\,(c-id)^{3/2}\,(i+\text{Tan}[e+fx])\Big)\Big)\Big]+\sqrt{a-ib}\,\sqrt{c+id}\,\text{Log}\Big[\Big(2i\,\big(2ac+2ibd\,\text{Tan}[e+fx]+bc\,(i+\text{Tan}[e+fx])+ad\,(i+\text{Tan}[e+fx])\big)+2\sqrt{a+ib}\,\sqrt{c+id}\,\sqrt{a+b\,\text{Tan}[e+fx]}\,\sqrt{c+d\,\text{Tan}[e+fx]}\Big)\Big/\Big(\sqrt{a+ib}\,(c+id)^{3/2}\,(-i+\text{Tan}[e+fx])\Big)\Big]\Bigg)\sqrt{\frac{c+d\,\text{Tan}[e+fx]}{\sqrt{\text{Sec}[e+fx]^2}}}\Bigg)\Bigg/\Bigg(2\sqrt{a-ib}\,\sqrt{a+ib}\,f\,\sqrt{\frac{a+b\,\text{Tan}[e+fx]}{\sqrt{\text{Sec}[e+fx]^2}}}\Bigg)$$

$$\Bigg(-\frac{1}{4\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^{3/2}}$$

$$\mathrm{i}\,d\,\Bigg(-\sqrt{a+\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$
$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\Big)\Big)\Big]+$$
$$\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$
$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\sqrt{a+\mathrm{i}\,b}\,\left(c+\mathrm{i}\,d\right)^{3/2}\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\Big)\Big]\Bigg)$$

$$\mathrm{Sec}[e+f\,x]^2\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}\;+$$

$$\Bigg(\mathrm{i}\,b\,\Bigg(-\sqrt{a+\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$
$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\Big)\Big)\Big]+$$
$$\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$
$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\sqrt{a+\mathrm{i}\,b}\,\left(c+\mathrm{i}\,d\right)^{3/2}\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\Big)\Big]\Bigg)$$

$$\mathrm{Sec}[e+f\,x]^2\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}\Bigg)\Bigg/\Bigg(4\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Bigg)-$$

$$\frac{1}{4\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\left(\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}\right)^{3/2}\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

$$\mathrm{i}\,\Bigg(-\sqrt{a+\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}$$
$$\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$
$$\Big(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\Big)\Big)\Big]+\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}$$
$$\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$
$$2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\left(\sqrt{a+i b}\;(c+i d)^{3/2}\;\left(-i+\text{Tan}[e+f x]\right)\right)\Big]\Big)\;\sqrt{a+b\,\text{Tan}[e+f x]}$$

$$\sqrt{\frac{c+d\,\text{Tan}[e+f x]}{\sqrt{\text{Sec}[e+f x]^2}}}\;\left(b\,\sqrt{\text{Sec}[e+f x]^2}-\frac{\text{Tan}[e+f x]\;\left(a+b\,\text{Tan}[e+f x]\right)}{\sqrt{\text{Sec}[e+f x]^2}}\right)+$$

$$\left(1\Big/\left(4\sqrt{a-i b}\;\sqrt{a+i b}\;\sqrt{\frac{a+b\,\text{Tan}[e+f x]}{\sqrt{\text{Sec}[e+f x]^2}}}\;\sqrt{c+d\,\text{Tan}[e+f x]}\;\sqrt{\frac{c+d\,\text{Tan}[e+f x]}{\sqrt{\text{Sec}[e+f x]^2}}}\right)\right)$$

$$i\;\Big(-\sqrt{a+i b}\;\sqrt{c-i d}\;\text{Log}\Big[-\Big(\Big(2\,i\,\Big(2\,a\,c-2\,i\,b\,d\,\text{Tan}[e+f x]+b\,c\,\left(-i+\text{Tan}[e+f x]\right)+$$
$$a\,d\,\left(-i+\text{Tan}[e+f x]\right)+2\sqrt{a-i b}\;\sqrt{c-i d}\;\sqrt{a+b\,\text{Tan}[e+f x]}$$
$$\sqrt{c+d\,\text{Tan}[e+f x]}\Big)\Big)\Big/\left(\sqrt{a-i b}\;(c-i d)^{3/2}\;\left(i+\text{Tan}[e+f x]\right)\right)\Big)\Big]+$$
$$\sqrt{a-i b}\;\sqrt{c+i d}\;\text{Log}\Big[\Big(2\,i\,\Big(2\,a\,c+2\,i\,b\,d\,\text{Tan}[e+f x]+b\,c\,\left(i+\text{Tan}[e+f x]\right)+$$
$$a\,d\,\left(i+\text{Tan}[e+f x]\right)+2\sqrt{a+i b}\;\sqrt{c+i d}\;\sqrt{a+b\,\text{Tan}[e+f x]}$$
$$\sqrt{c+d\,\text{Tan}[e+f x]}\Big)\Big)\Big/\left(\sqrt{a+i b}\;(c+i d)^{3/2}\;\left(-i+\text{Tan}[e+f x]\right)\right)\Big]\Big)$$

$$\sqrt{a+b\,\text{Tan}[e+f x]}\;\left(d\,\sqrt{\text{Sec}[e+f x]^2}-\frac{\text{Tan}[e+f x]\;\left(c+d\,\text{Tan}[e+f x]\right)}{\sqrt{\text{Sec}[e+f x]^2}}\right)+$$

$$\frac{1}{2\sqrt{a-i b}\;\sqrt{a+i b}\;\sqrt{\frac{a+b\,\text{Tan}[e+f x]}{\sqrt{\text{Sec}[e+f x]^2}}}\;\sqrt{c+d\,\text{Tan}[e+f x]}}$$

$$i\,\sqrt{a+b\,\text{Tan}[e+f x]}\;\sqrt{\frac{c+d\,\text{Tan}[e+f x]}{\sqrt{\text{Sec}[e+f x]^2}}}$$

$$\Big(-\Big(\Big(i\,\sqrt{a-i b}\;\sqrt{a+i b}\;(c-i d)^2\;\left(i+\text{Tan}[e+f x]\right)\;\Big(-\Big(\Big(2\,i\,\Big(b\,c\,\text{Sec}[e+f x]^2+$$
$$a\,d\,\text{Sec}[e+f x]^2-2\,i\,b\,d\,\text{Sec}[e+f x]^2+\Big(\sqrt{a-i b}\;\sqrt{c-i d}\;d$$
$$\text{Sec}[e+f x]^2\,\sqrt{a+b\,\text{Tan}[e+f x]}\Big)\Big/\left(\sqrt{c+d\,\text{Tan}[e+f x]}\right)+$$
$$\left(\sqrt{a-i b}\;b\,\sqrt{c-i d}\;\text{Sec}[e+f x]^2\,\sqrt{c+d\,\text{Tan}[e+f x]}\right)\Big/$$
$$\left(\sqrt{a+b\,\text{Tan}[e+f x]}\right)\Big)\Big)\Big/\left(\sqrt{a-i b}\;(c-i d)^{3/2}\;\left(i+\text{Tan}[e+f x]\right)\right)\Big)+$$
$$\Big(2\,i\,\text{Sec}[e+f x]^2\,\Big(2\,a\,c-2\,i\,b\,d\,\text{Tan}[e+f x]+b\,c\,\left(-i+\text{Tan}[e+f x]\right)+$$
$$a\,d\,\left(-i+\text{Tan}[e+f x]\right)+2\sqrt{a-i b}\;\sqrt{c-i d}\;\sqrt{a+b\,\text{Tan}[e+f x]}$$
$$\sqrt{c+d\,\text{Tan}[e+f x]}\Big)\Big)\Big/\left(\sqrt{a-i b}\;(c-i d)^{3/2}\;\left(i+\text{Tan}[e+f x]\right)^2\right)\Big)\Big)\Big/$$
$$\Big(2\,\Big(2\,a\,c-2\,i\,b\,d\,\text{Tan}[e+f x]+b\,c\,\left(-i+\text{Tan}[e+f x]\right)+a\,d\,\left(-i+\text{Tan}[e+f x]\right)+$$
$$2\sqrt{a-i b}\;\sqrt{c-i d}\;\sqrt{a+b\,\text{Tan}[e+f x]}\;\sqrt{c+d\,\text{Tan}[e+f x]}\Big)\Big)\Big)-$$
$$\Big(i\,\sqrt{a-i b}\;\sqrt{a+i b}\;(c+i d)^2\;\left(-i+\text{Tan}[e+f x]\right)$$
$$\Big(\Big(2\,i\,\Big(b\,c\,\text{Sec}[e+f x]^2+a\,d\,\text{Sec}[e+f x]^2+2\,i\,b\,d\,\text{Sec}[e+f x]^2+\Big(\sqrt{a+i b}$$
$$\sqrt{c+i d}\;d\,\text{Sec}[e+f x]^2\,\sqrt{a+b\,\text{Tan}[e+f x]}\Big)\Big/\left(\sqrt{c+d\,\text{Tan}[e+f x]}\right)+$$
$$\left(\sqrt{a+i b}\;b\,\sqrt{c+i d}\;\text{Sec}[e+f x]^2\,\sqrt{c+d\,\text{Tan}[e+f x]}\right)\Big/$$
$$\left(\sqrt{a+b\,\text{Tan}[e+f x]}\right)\Big)\Big)\Big/\left(\sqrt{a+i b}\;(c+i d)^{3/2}\;\left(-i+\text{Tan}[e+f x]\right)\right)-$$

$$\left(2\,\mathrm{i}\,\mathrm{Sec}[e+f x]^2\left(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f x]+b\,c\,(\mathrm{i}+\mathrm{Tan}[e+f x])+a\,d\,(\mathrm{i}+\mathrm{Tan}[e+f x])+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)\right)\Big/\left(\sqrt{a+\mathrm{i}\,b}\,(c+\mathrm{i}\,d)^{3/2}\,(-\mathrm{i}+\mathrm{Tan}[e+f x])^2\right)\Bigg)\Bigg)\Bigg/$$
$$\left(2\left(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f x]+b\,c\,(\mathrm{i}+\mathrm{Tan}[e+f x])+a\,d\,(\mathrm{i}+\mathrm{Tan}[e+f x])+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)\right)\Bigg)\Bigg)$$

Problem 1269: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{(a+b\,\mathrm{Tan}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 206 leaves, 8 steps):

$$-\frac{\mathrm{i}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a-\mathrm{i}\,b)^{3/2}\,f}+\frac{\mathrm{i}\,\sqrt{c+\mathrm{i}\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a+\mathrm{i}\,b)^{3/2}\,f}-\frac{2\,b\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{(a^2+b^2)\,f\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}$$

Result (type 4, 183 017 leaves): Display of huge result suppressed!

Problem 1270: Humongous result has more than 200000 leaves.

$$\int \frac{\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{(a+b\,\mathrm{Tan}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 280 leaves, 9 steps):

$$-\frac{\mathrm{i}\,\sqrt{c-\mathrm{i}\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a-\mathrm{i}\,b)^{5/2}\,f}+\frac{\mathrm{i}\,\sqrt{c+\mathrm{i}\,d}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a+\mathrm{i}\,b)^{5/2}\,f}-\frac{2\,b\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{3\,(a^2+b^2)\,f\,(a+b\,\mathrm{Tan}[e+f x])^{3/2}}-\frac{2\,b\,(6\,a\,b\,c-5\,a^2\,d+b^2\,d)\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}{3\,(a^2+b^2)^2\,(b\,c-a\,d)\,f\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}$$

Result (type ?, 273 452 leaves): Display of huge result suppressed!

Problem 1271: Humongous result has more than 200000 leaves.

$$\int (a+b\,\mathrm{Tan}[e+f\,x])^{3/2}\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 330 leaves, 14 steps):

$$-\frac{i\,(a-i\,b)^{3/2}\,(c-i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,(a+i\,b)^{3/2}\,(c+i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{f}+\frac{\left(18\,a\,b\,c\,d+3\,a^2\,d^2+b^2\,(3\,c^2-8\,d^2)\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{4\,\sqrt{b}\,\sqrt{d}\,f}+\frac{(3\,b\,c+5\,a\,d)\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{4\,f}+\frac{b\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{2\,f}$$

Result (type ?, 554 429 leaves): Display of huge result suppressed!

Problem 1272: Humongous result has more than 200000 leaves.

$$\int \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 258 leaves, 13 steps):

$$-\frac{i\,\sqrt{a-i\,b}\,(c-i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,\sqrt{a+i\,b}\,(c+i\,d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{f}+\frac{\sqrt{d}\,(3\,b\,c+a\,d)\,\mathrm{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{b}\,f}+\frac{d\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}{f}$$

Result (type ?, 349 255 leaves): Display of huge result suppressed!

Problem 1273: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}{\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 218 leaves, 12 steps):

$$-\frac{\mathrm{i}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{a-\mathrm{i}\,b}\,f}+$$

$$\frac{\mathrm{i}\,\left(c+\mathrm{i}\,d\right)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{a+\mathrm{i}\,b}\,f}+\frac{2\,d^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{b}\,f}$$

Result (type 3, 4180 leaves) :

$$\Bigg(\mathrm{Cos}[e+f\,x]\,\Bigg(-\mathrm{i}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\left(c-\mathrm{i}\,d\right)^{3/2}$$

$$\mathrm{Log}\Bigg[-\Bigg(\Bigg(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$

$$2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Bigg)\Bigg/$$

$$\left(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{5/2}\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Bigg)\Bigg]+\sqrt{a-\mathrm{i}\,b}$$

$$\Bigg(\mathrm{i}\,\sqrt{b}\,\left(c+\mathrm{i}\,d\right)^{3/2}\,\mathrm{Log}\Bigg[\Bigg(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\big(\mathrm{i}+$$

$$\mathrm{Tan}[e+f\,x]\big)+2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Bigg)\Bigg/$$

$$\left(\sqrt{a+\mathrm{i}\,b}\,\left(c+\mathrm{i}\,d\right)^{5/2}\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Bigg]+2\,\sqrt{a+\mathrm{i}\,b}\,d^{3/2}$$

$$\mathrm{Log}\left[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\,\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right]\Bigg)\Bigg)$$

$$\sqrt{a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]}\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)$$

$$\left(\frac{c\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}}{\sqrt{a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]}}+\frac{d\,\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\,\mathrm{Tan}[e+f\,x]}{\sqrt{a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]}}\right)$$

$$\left.\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\right)\Bigg/\Bigg(2$$

$$\sqrt{a-\mathrm{i}\,b}$$
$$\sqrt{a+\mathrm{i}\,b}$$
$$\sqrt{b}$$
$$f$$
$$\left(c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]\right)^{3/2}$$
$$\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}$$

$$\left(-\frac{1}{4\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\left(c+d\,\mathrm{Tan}[e+f\,x]\right)^{3/2}\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}}\,d\,\left(-\mathrm{i}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\right.\right.$$

$$\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\Big(-\mathrm{i}+\mathrm{Tan}[e+$$

$$f\,x]\Big)+2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\left(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{5/2}\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big)\Big]+\sqrt{a-\mathrm{i}\,b}\,\left(\mathrm{i}\,\sqrt{b}\,\left(c+\mathrm{i}\,d\right)^{3/2}\right.$$

$$\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$

$$2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\left(\sqrt{a+\mathrm{i}\,b}\,\left(c+\mathrm{i}\,d\right)^{5/2}\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big]+2\,\sqrt{a+\mathrm{i}\,b}\,d^{3/2}\,\mathrm{Log}\Big[b\,c+$$

$$a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\,\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big]\Big)\Big)$$

$$\mathrm{Sec}[e+f\,x]^2\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\;+$$

$$\left(\sqrt{b}\,\left(-\mathrm{i}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\mathrm{Log}\Big[\right.\right.$$

$$-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$

$$2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\left(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{5/2}\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big)\Big]+\sqrt{a-\mathrm{i}\,b}\,\left(\mathrm{i}\,\sqrt{b}\,\left(c+\mathrm{i}\,d\right)^{3/2}\right.$$

$$\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+$$

$$2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\left(\sqrt{a+\mathrm{i}\,b}\,\left(c+\mathrm{i}\,d\right)^{5/2}\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big]+2\,\sqrt{a+\mathrm{i}\,b}\,d^{3/2}\,\mathrm{Log}\Big[b\,c+$$

$$a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\,\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big]\Big)\Big)$$

$$\left.\mathrm{Sec}[e+f\,x]^2\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\right)\Big/\left(4\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\right.$$

$$\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\right)-$$

$$\frac{1}{4\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,\left(\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)^{3/2}}$$

$$\left(-\mathrm{i}\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{b}\,\left(c-\mathrm{i}\,d\right)^{3/2}\,\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+\right.$$

$$a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\left(\sqrt{a-\mathrm{i}\,b}\,\left(c-\mathrm{i}\,d\right)^{5/2}\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big)\Big]+$$

$$\sqrt{a-\mathrm{i}\, b}\ \left(\mathrm{i}\sqrt{b}\ (c+\mathrm{i}\, d)^{3/2}\,\mathrm{Log}\left[\left(2\,\mathrm{i}\left(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+\right.\right.\right.\right.$$

$$a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\sqrt{a+\mathrm{i}\,b}\ \sqrt{c+\mathrm{i}\,d}\ \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\right)\Big/\left(\sqrt{a+\mathrm{i}\,b}\ (c+\mathrm{i}\,d)^{5/2}\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big]+$$

$$2\sqrt{a+\mathrm{i}\,b}\ d^{3/2}\,\mathrm{Log}\Big[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\sqrt{b}\ \sqrt{d}\ \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\ \Big]\right)\right)\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\ \sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}$$

$$\left(-\frac{\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\ \left(a+b\,\mathrm{Tan}[e+f\,x]\right)}{\left(1+\mathrm{Tan}[e+f\,x]^2\right)^{3/2}}+\frac{b\,\mathrm{Sec}[e+f\,x]^2}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)+$$

$$\left(\left(-\mathrm{i}\sqrt{a+\mathrm{i}\,b}\ \sqrt{b}\ (c-\mathrm{i}\,d)^{3/2}\,\mathrm{Log}\left[-\left(\left(2\,\mathrm{i}\left(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+\right.\right.\right.\right.\right.\right.$$

$$a\,d\,\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\sqrt{a-\mathrm{i}\,b}\ \sqrt{c-\mathrm{i}\,d}\ \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left.\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\right)\Big/\left(\sqrt{a-\mathrm{i}\,b}\ (c-\mathrm{i}\,d)^{5/2}\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\right)\Big]+$$

$$\sqrt{a-\mathrm{i}\,b}\ \left(\mathrm{i}\sqrt{b}\ (c+\mathrm{i}\,d)^{3/2}\,\mathrm{Log}\left[\left(2\,\mathrm{i}\left(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+\right.\right.\right.\right.$$

$$a\,d\,\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)+2\sqrt{a+\mathrm{i}\,b}\ \sqrt{c+\mathrm{i}\,d}\ \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)\right)\Big/\left(\sqrt{a+\mathrm{i}\,b}\ (c+\mathrm{i}\,d)^{5/2}\left(-\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right)\Big]+$$

$$2\sqrt{a+\mathrm{i}\,b}\ d^{3/2}\,\mathrm{Log}\Big[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\sqrt{b}\ \sqrt{d}\ \sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left.\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\ \Big]\right)\right)\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\left.\left(-\frac{\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\ \left(c+d\,\mathrm{Tan}[e+f\,x]\right)}{\left(1+\mathrm{Tan}[e+f\,x]^2\right)^{3/2}}+\frac{d\,\mathrm{Sec}[e+f\,x]^2}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)\right)\Big/$$

$$\left(4\sqrt{a-\mathrm{i}\,b}\ \sqrt{a+\mathrm{i}\,b}\ \sqrt{b}\ \sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\ \sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\right.$$

$$\left.\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\right)+$$

$$\frac{1}{2\sqrt{a-\mathrm{i}\,b}\ \sqrt{a+\mathrm{i}\,b}\ \sqrt{b}\ \sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\ \sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}}$$

$$\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}$$

$$\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}$$

$$\left(\left(\sqrt{a-\mathrm{i}\,b}\ \sqrt{a+\mathrm{i}\,b}\ \sqrt{b}\ (c-\mathrm{i}\,d)^4\left(\mathrm{i}+\mathrm{Tan}[e+f\,x]\right)\right.\right.$$

$$\left(-\left(\left(2\,\mathrm{i}\left(b\,c\,\mathrm{Sec}[e+f\,x]^2+a\,d\,\mathrm{Sec}[e+f\,x]^2-2\,\mathrm{i}\,b\,d\,\mathrm{Sec}[e+f\,x]^2+\left(\sqrt{a-\mathrm{i}\,b}\right.\right.\right.\right.\right.$$

$$\sqrt{c-i d}\; d\, \text{Sec}[e+f x]^2 \sqrt{a+b\, \text{Tan}[e+f x]} \Big) \Big/ \Big(\sqrt{c+d\, \text{Tan}[e+f x]}\Big) +$$
$$\Big(\sqrt{a-i b}\; b \sqrt{c-i d}\; \text{Sec}[e+f x]^2 \sqrt{c+d\, \text{Tan}[e+f x]}\Big) \Big/$$
$$\Big(\sqrt{a+b\, \text{Tan}[e+f x]}\Big)\Big)\Big) \Big/ \Big(\sqrt{a-i b}\; (c-i d)^{5/2} \left(i+\text{Tan}[e+f x]\right)\Big)\Big) +$$
$$\Big(2 i\, \text{Sec}[e+f x]^2 \Big(2 a c - 2 i b d\, \text{Tan}[e+f x] + b c \left(-i+\text{Tan}[e+f x]\right) +$$
$$a d \left(-i+\text{Tan}[e+f x]\right) + 2 \sqrt{a-i b}\; \sqrt{c-i d}\; \sqrt{a+b\, \text{Tan}[e+f x]}$$
$$\sqrt{c+d\, \text{Tan}[e+f x]}\Big)\Big) \Big/ \Big(\sqrt{a-i b}\; (c-i d)^{5/2} \left(i+\text{Tan}[e+f x]\right)^2\Big)\Big)\Big) \Big/$$
$$\Big(2 \Big(2 a c - 2 i b d\, \text{Tan}[e+f x] + b c \left(-i+\text{Tan}[e+f x]\right) + a d \left(-i+\text{Tan}[e+f x]\right) +$$
$$2 \sqrt{a-i b}\; \sqrt{c-i d}\; \sqrt{a+b\, \text{Tan}[e+f x]}\; \sqrt{c+d\, \text{Tan}[e+f x]}\Big)\Big) + \sqrt{a-i b}$$
$$\Bigg(\Bigg(2 \sqrt{a+i b}\; d^{3/2} \Bigg(2 b d\, \text{Sec}[e+f x]^2 + \frac{\sqrt{b}\; d^{3/2}\, \text{Sec}[e+f x]^2 \sqrt{a+b\, \text{Tan}[e+f x]}}{\sqrt{c+d\, \text{Tan}[e+f x]}} +$$
$$\frac{b^{3/2} \sqrt{d}\; \text{Sec}[e+f x]^2 \sqrt{c+d\, \text{Tan}[e+f x]}}{\sqrt{a+b\, \text{Tan}[e+f x]}}\Bigg)\Bigg) \Bigg/$$
$$\Big(b c + a d + 2 b d\, \text{Tan}[e+f x] + 2 \sqrt{b}\; \sqrt{d}\; \sqrt{a+b\, \text{Tan}[e+f x]}\; \sqrt{c+d\, \text{Tan}[e+f x]}\Big) +$$
$$\Big(\sqrt{a+i b}\; \sqrt{b}\; (c+i d)^4 \left(-i+\text{Tan}[e+f x]\right)$$
$$\Big(\Big(2 i \Big(b c\, \text{Sec}[e+f x]^2 + a d\, \text{Sec}[e+f x]^2 + 2 i b d\, \text{Sec}[e+f x]^2 + \Big(\sqrt{a+i b}$$
$$\sqrt{c+i d}\; d\, \text{Sec}[e+f x]^2 \sqrt{a+b\, \text{Tan}[e+f x]}\Big) \Big/ \Big(\sqrt{c+d\, \text{Tan}[e+f x]}\Big) +$$
$$\Big(\sqrt{a+i b}\; b \sqrt{c+i d}\; \text{Sec}[e+f x]^2 \sqrt{c+d\, \text{Tan}[e+f x]}\Big) \Big/$$
$$\Big(\sqrt{a+b\, \text{Tan}[e+f x]}\Big)\Big)\Big) \Big/ \Big(\sqrt{a+i b}\; (c+i d)^{5/2} \left(-i+\text{Tan}[e+f x]\right)\Big) -$$
$$\Big(2 i\, \text{Sec}[e+f x]^2 \Big(2 a c + 2 i b d\, \text{Tan}[e+f x] + b c \left(i+\text{Tan}[e+f x]\right) +$$
$$a d \left(i+\text{Tan}[e+f x]\right) + 2 \sqrt{a+i b}\; \sqrt{c+i d}\; \sqrt{a+b\, \text{Tan}[e+f x]}$$
$$\sqrt{c+d\, \text{Tan}[e+f x]}\Big)\Big) \Big/ \Big(\sqrt{a+i b}\; (c+i d)^{5/2} \left(-i+\text{Tan}[e+f x]\right)^2\Big)\Big)\Big) \Big/$$
$$\Big(2 \Big(2 a c + 2 i b d\, \text{Tan}[e+f x] + b c \left(i+\text{Tan}[e+f x]\right) + a d \left(i+\text{Tan}[e+f x]\right) +$$
$$2 \sqrt{a+i b}\; \sqrt{c+i d}\; \sqrt{a+b\, \text{Tan}[e+f x]}\; \sqrt{c+d\, \text{Tan}[e+f x]}\Big)\Big)\Big)\Big)\Bigg)\Bigg)$$

Problem 1274: Humongous result has more than 200000 leaves.

$$\int \frac{\left(c+d\, \text{Tan}[e+f x]\right)^{3/2}}{\left(a+b\, \text{Tan}[e+f x]\right)^{3/2}}\, dx$$

Optimal (type 3, 213 leaves, 8 steps):

$$-\frac{i\,(c-i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a-i\,b)^{3/2}\,f}+\frac{i\,(c+i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a+i\,b)^{3/2}\,f}-\frac{2\,(b\,c-a\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{(a^2+b^2)\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 273 501 leaves) : Display of huge result suppressed!

Problem 1275: Humongous result has more than 200000 leaves.

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^{3/2}}{(a+b\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 277 leaves, 9 steps) :

$$-\frac{i\,(c-i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a-i\,b)^{5/2}\,f}+\frac{i\,(c+i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a+i\,b)^{5/2}\,f}-\frac{2\,(b\,c-a\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,(a^2+b^2)\,f\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}-\frac{4\,(3\,a\,b\,c-a^2\,d+2\,b^2\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,(a^2+b^2)^2\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 416 193 leaves) : Display of huge result suppressed!

Problem 1276: Humongous result has more than 200000 leaves.

$$\int\frac{(c+d\,\text{Tan}[e+f\,x])^{3/2}}{(a+b\,\text{Tan}[e+f\,x])^{7/2}}\,dx$$

Optimal (type 3, 391 leaves, 10 steps) :

$$-\frac{i\,(c-i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a-i\,b)^{7/2}\,f}+\frac{i\,(c+i\,d)^{3/2}\,\text{ArcTanh}\Big[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{(a+i\,b)^{7/2}\,f}-\frac{2\,(b\,c-a\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{5\,(a^2+b^2)\,f\,(a+b\,\text{Tan}[e+f\,x])^{5/2}}-\frac{4\,(5\,a\,b\,c-2\,a^2\,d+3\,b^2\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{15\,(a^2+b^2)^2\,f\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}+\left(2\,\left(50\,a^3\,b\,c\,d-70\,a\,b^3\,c\,d-8\,a^4\,d^2-a^2\,b^2\,(45\,c^2-49\,d^2)+3\,b^4\,(5\,c^2-d^2)\right)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(15\,(a^2+b^2)^3\,(b\,c-a\,d)\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\right)$$

Result (type ?, 545 183 leaves) : Display of huge result suppressed!

Problem 1277: Humongous result has more than 200000 leaves.

$$\int (a+b\,\text{Tan}[e+f\,x])^{3/2}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 429 leaves, 15 steps):

$$-\frac{i\,(a-i\,b)^{3/2}\,(c-i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,(a+i\,b)^{3/2}\,(c+i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{1}{8\,b^{3/2}\,\sqrt{d}\,f}\left(15\,a^2\,b\,c\,d^2-a^3\,d^3+3\,a\,b^2\,d\,(15\,c^2-8\,d^2)+5\,b^3\,(c^3-8\,c\,d^2)\right)\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]+\frac{1}{8\,b\,f}\left(14\,a\,b\,c\,d-a^2\,d^2+b^2\,(11\,c^2-8\,d^2)\right)\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}+\frac{d\,(13\,b\,c-a\,d)\,(a+b\,\text{Tan}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{12\,b\,f}+\frac{d^2\,(a+b\,\text{Tan}[e+f\,x])^{5/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,b\,f}$$

Result (type ?, 677 340 leaves): Display of huge result suppressed!

Problem 1278: Humongous result has more than 200000 leaves.

$$\int \sqrt{a+b\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 339 leaves, 14 steps):

$$-\frac{i\,\sqrt{a-i\,b}\,(c-i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{i\,\sqrt{a+i\,b}\,(c+i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{f}+\frac{\sqrt{d}\,\left(10\,a\,b\,c\,d-a^2\,d^2+b^2\,(15\,c^2-8\,d^2)\right)\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{4\,b^{3/2}\,f}+\frac{d\,(9\,b\,c-a\,d)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{4\,b\,f}+\frac{d^2\,(a+b\,\text{Tan}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{2\,b\,f}$$

Result (type ?, 444 049 leaves) : Display of huge result suppressed!

Problem 1279: Humongous result has more than 200000 leaves.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^{5/2}}{\sqrt{a + b \operatorname{Tan}[e + f x]}} \, dx$$

Optimal (type 3, 264 leaves, 13 steps) :

$$-\frac{i (c - i d)^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c-i d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{a-i b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{\sqrt{a - i b} f} + \frac{i (c + i d)^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c+i d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{a+i b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{\sqrt{a + i b} f} + \frac{d^{3/2} (5 b c - a d) \operatorname{ArcTanh}\left[\frac{\sqrt{d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{b^{3/2} f} + \frac{d^2 \sqrt{a + b \operatorname{Tan}[e + f x]} \sqrt{c + d \operatorname{Tan}[e + f x]}}{b f}$$

Result (type ?, 234 444 leaves) : Display of huge result suppressed!

Problem 1280: Humongous result has more than 200000 leaves.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^{5/2}}{(a + b \operatorname{Tan}[e + f x])^{3/2}} \, dx$$

Optimal (type 3, 273 leaves, 13 steps) :

$$-\frac{i (c - i d)^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c-i d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{a-i b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{(a - i b)^{3/2} f} + \frac{i (c + i d)^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c+i d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{a+i b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{(a + i b)^{3/2} f} + \frac{2 d^{5/2} \operatorname{ArcTanh}\left[\frac{\sqrt{d} \sqrt{a+b \operatorname{Tan}[e+f x]}}{\sqrt{b} \sqrt{c+d \operatorname{Tan}[e+f x]}}\right]}{b^{3/2} f} - \frac{2 (b c - a d)^2 \sqrt{c + d \operatorname{Tan}[e + f x]}}{b (a^2 + b^2) f \sqrt{a + b \operatorname{Tan}[e + f x]}}$$

Result (type ?, 440 773 leaves) : Display of huge result suppressed!

Problem 1281: Humongous result has more than 200000 leaves.

$$\int \frac{(c + d \operatorname{Tan}[e + f x])^{5/2}}{(a + b \operatorname{Tan}[e + f x])^{5/2}} \, dx$$

Optimal (type 3, 292 leaves, 9 steps) :

$$-\frac{i\,(c-i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a-i\,b)^{5/2}\,f}+\frac{i\,(c+i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a+i\,b)^{5/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,b\,(a^2+b^2)\,f\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}-\frac{2\,(b\,c-a\,d)\,(6\,a\,b\,c+a^2\,d+7\,b^2\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{3\,b\,(a^2+b^2)^2\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 545 134 leaves) : Display of huge result suppressed!

Problem 1282: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d\,\text{Tan}[e+f\,x])^{5/2}}{(a+b\,\text{Tan}[e+f\,x])^{7/2}}\,dx$$

Optimal (type 3, 398 leaves, 10 steps) :

$$-\frac{i\,(c-i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a-i\,b)^{7/2}\,f}+\frac{i\,(c+i\,d)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a+i\,b)^{7/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{5\,b\,(a^2+b^2)\,f\,(a+b\,\text{Tan}[e+f\,x])^{5/2}}-\frac{2\,(b\,c-a\,d)\,(10\,a\,b\,c+a^2\,d+11\,b^2\,d)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{15\,b\,(a^2+b^2)^2\,f\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}+\left(2\,\left(20\,a^3\,b\,c\,d-100\,a\,b^3\,c\,d+2\,a^4\,d^2+b^4\,(15\,c^2-23\,d^2)-3\,a^2\,b^2\,(15\,c^2-13\,d^2)\right)\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(15\,b\,(a^2+b^2)^3\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\right)$$

Result (type ?, 726 374 leaves) : Display of huge result suppressed!

Problem 1283: Humongous result has more than 200000 leaves.

$$\int \frac{(a+b\,\text{Tan}[e+f\,x])^{5/2}}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 264 leaves, 13 steps) :

$$-\frac{i\,(a-i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{c-i\,d}\,f}+\frac{i\,(a+i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{c+i\,d}\,f}-\frac{b^{3/2}\,(b\,c-5\,a\,d)\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{d^{3/2}\,f}+\frac{b^2\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}{d\,f}$$

Result (type ?, 234 417 leaves) : Display of huge result suppressed!

Problem 1284: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^{3/2}}{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 218 leaves, 12 steps):

$$-\frac{i\,(a-i\,b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{c-i\,d}\,f}+\frac{i\,(a+i\,b)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{c+i\,d}\,f}+\frac{2\,b^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{d}\,f}$$

Result (type 3, 4194 leaves):

$$\begin{aligned}&\Bigg(\mathrm{Cos}[e+f\,x]\,\Bigg(-i\,(a-i\,b)^{3/2}\,\sqrt{c+i\,d}\,\sqrt{d}\\
&\quad\mathrm{Log}\Big[-\Big(\Big(2\,i\,\Big(2\,a\,c-2\,i\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(-i+\mathrm{Tan}[e+f\,x])+a\,d\,(-i+\mathrm{Tan}[e+f\,x])+\\
&\qquad 2\,\sqrt{a-i\,b}\,\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\\
&\qquad\Big((a-i\,b)^{5/2}\,\sqrt{c-i\,d}\,(i+\mathrm{Tan}[e+f\,x])\Big)\Big)\Big]+\sqrt{c-i\,d}\\
&\quad\Big(i\,(a+i\,b)^{3/2}\,\sqrt{d}\,\mathrm{Log}\Big[\Big(2\,i\,\Big(2\,a\,c+2\,i\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(i+\mathrm{Tan}[e+f\,x])+a\,d\,(i+\\
&\qquad\mathrm{Tan}[e+f\,x])+2\,\sqrt{a+i\,b}\,\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\\
&\qquad\Big((a+i\,b)^{5/2}\,\sqrt{c+i\,d}\,(-i+\mathrm{Tan}[e+f\,x])\Big)\Big]+2\,b^{3/2}\,\sqrt{c+i\,d}\\
&\qquad\mathrm{Log}\Big[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f\,x]+2\,\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big]\Big)\Bigg)\\
&\quad\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}\,(a+b\,\mathrm{Tan}[e+f\,x])^2\\
&\quad\left(\frac{a\,\sqrt{a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]}}{\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}}+\frac{b\,\sqrt{a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]}\,\mathrm{Tan}[e+f\,x]}{\sqrt{c\,\mathrm{Cos}[e+f\,x]+d\,\mathrm{Sin}[e+f\,x]}}\right)\\
&\quad\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}}\Bigg)\Bigg/\Bigg(2\\
&\quad\sqrt{c-i\,d}\\
&\quad\sqrt{c+i\,d}\\
&\quad\sqrt{d}\\
&\quad f\\
&\quad(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x])^{3/2}\\
&\quad(c+d\,\mathrm{Tan}[e+f\,x])\Bigg)\end{aligned}$$

$$\sqrt{\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}}$$

$$\Bigg(-\frac{1}{4\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\left(c+d\,\text{Tan}[e+f\,x]\right)^{3/2}\sqrt{\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}}}\sqrt{d}\,\Big(-\mathrm{i}\,(a-\mathrm{i}\,b)^{3/2}\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}$$

$$\text{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,(-\mathrm{i}+\text{Tan}[e+f\,x])+a\,d\,(-\mathrm{i}+\text{Tan}[e+f\,x])+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\Big((a-\mathrm{i}\,b)^{5/2}\sqrt{c-\mathrm{i}\,d}\,(\mathrm{i}+\text{Tan}[e+f\,x])\Big)\Big)\Big]+\sqrt{c-\mathrm{i}\,d}\,\Big(\mathrm{i}\,(a+\mathrm{i}\,b)^{3/2}\sqrt{d}$$

$$\text{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,(\mathrm{i}+\text{Tan}[e+f\,x])+a\,d\,(\mathrm{i}+\text{Tan}[e+f\,x])+$$

$$2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\Big((a+\mathrm{i}\,b)^{5/2}\sqrt{c+\mathrm{i}\,d}\,(-\mathrm{i}+\text{Tan}[e+f\,x])\Big)\Big]+2\,b^{3/2}\sqrt{c+\mathrm{i}\,d}\,\text{Log}\Big[b\,c+$$

$$a\,d+2\,b\,d\,\text{Tan}[e+f\,x]+2\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big]\Big)\Big)$$

$$\text{Sec}[e+f\,x]^2\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}}+$$

$$\Bigg(b\,\Big(-\mathrm{i}\,(a-\mathrm{i}\,b)^{3/2}\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\text{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,(-\mathrm{i}+\text{Tan}[e+f\,x])+a\,d\,(-\mathrm{i}+\text{Tan}[e+f\,x])+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}$$

$$\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/\Big((a-\mathrm{i}\,b)^{5/2}\sqrt{c-\mathrm{i}\,d}\,(\mathrm{i}+\text{Tan}[e+f\,x])\Big)\Big)\Big]+$$

$$\sqrt{c-\mathrm{i}\,d}\,\Big(\mathrm{i}\,(a+\mathrm{i}\,b)^{3/2}\sqrt{d}\,\text{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,(\mathrm{i}+\text{Tan}[e+f\,x])+$$

$$a\,d\,(\mathrm{i}+\text{Tan}[e+f\,x])+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}$$

$$\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/\Big((a+\mathrm{i}\,b)^{5/2}\sqrt{c+\mathrm{i}\,d}\,(-\mathrm{i}+\text{Tan}[e+f\,x])\Big)\Big]+$$

$$2\,b^{3/2}\sqrt{c+\mathrm{i}\,d}\,\text{Log}\Big[b\,c+a\,d+2\,b\,d\,\text{Tan}[e+f\,x]+2\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}$$

$$\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big]\Big)\Big)\,\text{Sec}[e+f\,x]^2\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}}\Bigg)\Bigg/$$

$$\left(4\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,\sqrt{\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}}\right)-$$

$$\frac{1}{4\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,\left(\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)^{3/2}}$$

$$\Big(-\mathrm{i}\,(a-\mathrm{i}\,b)^{3/2}\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\text{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,(-\mathrm{i}+\text{Tan}[e+f\,x])+$$

$$a\,d\,(-\mathrm{i}+\text{Tan}[e+f\,x])+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}$$

$$\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big)\Big)\Big/\Big(\big(a-\mathrm{i}\,b\big)^{5/2}\sqrt{c-\mathrm{i}\,d}\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)\Big)\Big)\Big]+$$

$$\sqrt{c-\mathrm{i}\,d}\,\Big(\mathrm{i}\,\big(a+\mathrm{i}\,b\big)^{3/2}\sqrt{d}\,\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f x]+b\,c\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)+ a\,d\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big)\Big)\Big/\Big(\big(a+\mathrm{i}\,b\big)^{5/2}\sqrt{c+\mathrm{i}\,d}\,\big(-\mathrm{i}+\mathrm{Tan}[e+f x]\big)\Big)\Big]+$$

$$2\,b^{3/2}\sqrt{c+\mathrm{i}\,d}\,\mathrm{Log}\Big[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f x]+2\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big]\Big)\Big)\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f x]}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}}$$

$$\left(-\frac{\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\,\big(a+b\,\mathrm{Tan}[e+f x]\big)}{\big(1+\mathrm{Tan}[e+f x]^2\big)^{3/2}}+\frac{b\,\mathrm{Sec}[e+f x]^2}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}\right)+$$

$$\Bigg(\Big(-\mathrm{i}\,\big(a-\mathrm{i}\,b\big)^{3/2}\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\mathrm{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f x]+b\,c\,\big(-\mathrm{i}+\mathrm{Tan}[e+f x]\big)+ a\,d\,\big(-\mathrm{i}+\mathrm{Tan}[e+f x]\big)+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big)\Big)\Big/\Big(\big(a-\mathrm{i}\,b\big)^{5/2}\sqrt{c-\mathrm{i}\,d}\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)\Big)\Big)\Big]+$$

$$\sqrt{c-\mathrm{i}\,d}\,\Big(\mathrm{i}\,\big(a+\mathrm{i}\,b\big)^{3/2}\sqrt{d}\,\mathrm{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f x]+b\,c\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)+ a\,d\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big)\Big)\Big/\Big(\big(a+\mathrm{i}\,b\big)^{5/2}\sqrt{c+\mathrm{i}\,d}\,\big(-\mathrm{i}+\mathrm{Tan}[e+f x]\big)\Big)\Big]+$$

$$2\,b^{3/2}\sqrt{c+\mathrm{i}\,d}\,\mathrm{Log}\Big[b\,c+a\,d+2\,b\,d\,\mathrm{Tan}[e+f x]+2\sqrt{b}\,\sqrt{d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\Big]\Big)\Big)\sqrt{a+b\,\mathrm{Tan}[e+f x]}$$

$$\left(-\frac{\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\,\big(c+d\,\mathrm{Tan}[e+f x]\big)}{\big(1+\mathrm{Tan}[e+f x]^2\big)^{3/2}}+\frac{d\,\mathrm{Sec}[e+f x]^2}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}\right)\Bigg)\Bigg/$$

$$\left(4\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\,\sqrt{\frac{a+b\,\mathrm{Tan}[e+f x]}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f x]}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}}\right)+$$

$$\frac{1}{2\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\,\sqrt{\frac{a+b\,\mathrm{Tan}[e+f x]}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}}}$$

$$\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f x]}{\sqrt{1+\mathrm{Tan}[e+f x]^2}}}$$

$$\Big(\Big(\big(a-\mathrm{i}\,b\big)^4\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{d}\,\big(\mathrm{i}+\mathrm{Tan}[e+f x]\big)$$

$$
\begin{aligned}
&\Bigg(-\Bigg(\Bigg(2\,\mathrm{i}\,\Big(b\,c\,\text{Sec}[e+f\,x]^2+a\,d\,\text{Sec}[e+f\,x]^2-2\,\mathrm{i}\,b\,d\,\text{Sec}[e+f\,x]^2+\Big(\sqrt{a-\mathrm{i}\,b}\\
&\qquad\sqrt{c-\mathrm{i}\,d}\;d\,\text{Sec}[e+f\,x]^2\sqrt{a+b\,\text{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)+\\
&\qquad\Big(\sqrt{a-\mathrm{i}\,b}\;b\,\sqrt{c-\mathrm{i}\,d}\;\text{Sec}[e+f\,x]^2\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big/\\
&\qquad\Big(\sqrt{a+b\,\text{Tan}[e+f\,x]}\Big)\Big)\Bigg)\Big/\Big(\big(a-\mathrm{i}\,b\big)^{5/2}\sqrt{c-\mathrm{i}\,d}\;\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)\Bigg)+\\
&\quad\Big(2\,\mathrm{i}\,\text{Sec}[e+f\,x]^2\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+\\
&\qquad a\,d\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+2\,\sqrt{a-\mathrm{i}\,b}\;\sqrt{c-\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}\\
&\qquad\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\big(a-\mathrm{i}\,b\big)^{5/2}\sqrt{c-\mathrm{i}\,d}\;\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)^2\Big)\Bigg)\Big/\\
&\Big(2\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+\\
&\quad 2\,\sqrt{a-\mathrm{i}\,b}\;\sqrt{c-\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}\;\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)+\sqrt{c-\mathrm{i}\,d}\\
&\Bigg(\Bigg(2\,b^{3/2}\sqrt{c+\mathrm{i}\,d}\;\Bigg(2\,b\,d\,\text{Sec}[e+f\,x]^2+\frac{\sqrt{b}\;d^{3/2}\,\text{Sec}[e+f\,x]^2\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}+\\
&\qquad\frac{b^{3/2}\sqrt{d}\;\text{Sec}[e+f\,x]^2\sqrt{c+d\,\text{Tan}[e+f\,x]}}{\sqrt{a+b\,\text{Tan}[e+f\,x]}}\Bigg)\Bigg)\Big/\\
&\quad\Big(b\,c+a\,d+2\,b\,d\,\text{Tan}[e+f\,x]+2\,\sqrt{b}\;\sqrt{d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}\;\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)+\\
&\Big(\big(a+\mathrm{i}\,b\big)^4\sqrt{c+\mathrm{i}\,d}\;\sqrt{d}\;\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)\\
&\quad\Bigg(\Bigg(2\,\mathrm{i}\,\Big(b\,c\,\text{Sec}[e+f\,x]^2+a\,d\,\text{Sec}[e+f\,x]^2+2\,\mathrm{i}\,b\,d\,\text{Sec}[e+f\,x]^2+\Big(\sqrt{a+\mathrm{i}\,b}\\
&\qquad\sqrt{c+\mathrm{i}\,d}\;d\,\text{Sec}[e+f\,x]^2\sqrt{a+b\,\text{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)+\\
&\qquad\Big(\sqrt{a+\mathrm{i}\,b}\;b\,\sqrt{c+\mathrm{i}\,d}\;\text{Sec}[e+f\,x]^2\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big/\\
&\qquad\Big(\sqrt{a+b\,\text{Tan}[e+f\,x]}\Big)\Big)\Bigg)\Big/\Big(\big(a+\mathrm{i}\,b\big)^{5/2}\sqrt{c+\mathrm{i}\,d}\;\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)-\\
&\quad\Big(2\,\mathrm{i}\,\text{Sec}[e+f\,x]^2\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+\\
&\qquad a\,d\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+2\,\sqrt{a+\mathrm{i}\,b}\;\sqrt{c+\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}\\
&\qquad\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/\Big(\big(a+\mathrm{i}\,b\big)^{5/2}\sqrt{c+\mathrm{i}\,d}\;\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)^2\Big)\Bigg)\Big/\\
&\quad\Big(2\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+\\
&\qquad 2\,\sqrt{a+\mathrm{i}\,b}\;\sqrt{c+\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}\;\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big)\Bigg)\Bigg)
\end{aligned}
$$

Problem 1285: Result more than twice size of optimal antiderivative.

$$
\int\frac{\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}\,dx
$$

Optimal (type 3, 163 leaves, 7 steps):

$$
-\frac{\mathrm{i}\,\sqrt{a-\mathrm{i}\,b}\;\text{ArcTanh}\Big[\frac{\sqrt{c-\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-\mathrm{i}\,b}\;\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{\sqrt{c-\mathrm{i}\,d}\;f}+\frac{\mathrm{i}\,\sqrt{a+\mathrm{i}\,b}\;\text{ArcTanh}\Big[\frac{\sqrt{c+\mathrm{i}\,d}\;\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+\mathrm{i}\,b}\;\sqrt{c+d\,\text{Tan}[e+f\,x]}}\Big]}{\sqrt{c+\mathrm{i}\,d}\;f}
$$

Result (type 3, 3289 leaves):

$$\Bigg(\mathrm{i}\,\Big(-\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}$$

$$\text{Log}\Big[-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+$$
$$2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$
$$\Big(\big(a-\mathrm{i}\,b\big)^{3/2}\,\sqrt{c-\mathrm{i}\,d}\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)\Big)\Big]+\sqrt{a+\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}$$
$$\text{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+$$
$$2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$
$$\Big(\big(a+\mathrm{i}\,b\big)^{3/2}\,\sqrt{c+\mathrm{i}\,d}\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)\Big]\Big)$$

$$\sqrt{\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{\text{Sec}[e+f\,x]^2}}}\Bigg)\Bigg/\Bigg(2\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}$$

$$f\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{\sqrt{\text{Sec}[e+f\,x]^2}}}$$

$$\Bigg(\Bigg(\mathrm{i}\,d\,\Big(-\sqrt{a-\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\text{Log}\Big[$$

$$-\Big(\Big(2\,\mathrm{i}\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)+$$
$$2\,\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$
$$\Big(\big(a-\mathrm{i}\,b\big)^{3/2}\,\sqrt{c-\mathrm{i}\,d}\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)\Big)\Big]+\sqrt{a+\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}$$
$$\text{Log}\Big[\Big(2\,\mathrm{i}\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\text{Tan}[e+f\,x]+b\,c\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+a\,d\,\big(\mathrm{i}+\text{Tan}[e+f\,x]\big)+$$
$$2\,\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\Big)\Big)\Big/$$

$$\Big(\big(a+\mathrm{i}\,b\big)^{3/2}\,\sqrt{c+\mathrm{i}\,d}\,\big(-\mathrm{i}+\text{Tan}[e+f\,x]\big)\Big)\Big]\Big)\,\text{Sec}[e+f\,x]^2\,\sqrt{\frac{a+b\,\text{Tan}[e+f\,x]}{\sqrt{\text{Sec}[e+f\,x]^2}}}\Bigg)\Bigg/$$

$$\Bigg(4\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{\sqrt{\text{Sec}[e+f\,x]^2}}}\Bigg)-$$

$$\frac{1}{4\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\big(a+b\,\text{Tan}[e+f\,x]\big)^{3/2}\,\sqrt{\frac{c+d\,\text{Tan}[e+f\,x]}{\sqrt{\text{Sec}[e+f\,x]^2}}}}$$

$$\begin{aligned}&i\, b \Bigg(-\sqrt{a-i\, b}\,\sqrt{c+i\, d}\,\text{Log}\Big[-\Big(\Big(2\, i\,\Big(2\, a\, c-2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(-i+\text{Tan}[e+f\, x]\big)+\\&\qquad a\, d\,\big(-i+\text{Tan}[e+f\, x]\big)+2\sqrt{a-i\, b}\,\sqrt{c-i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\\&\qquad\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\Big(\big(a-i\, b\big)^{3/2}\sqrt{c-i\, d}\,\big(i+\text{Tan}[e+f\, x]\big)\Big)\Big)\Big]+\\&\quad\sqrt{a+i\, b}\,\sqrt{c-i\, d}\,\text{Log}\Big[\Big(2\, i\,\Big(2\, a\, c+2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(i+\text{Tan}[e+f\, x]\big)+\\&\qquad a\, d\,\big(i+\text{Tan}[e+f\, x]\big)+2\sqrt{a+i\, b}\,\sqrt{c+i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\\&\qquad\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\Big(\big(a+i\, b\big)^{3/2}\sqrt{c+i\, d}\,\big(-i+\text{Tan}[e+f\, x]\big)\Big)\Big]\Bigg)\\&\text{Sec}[e+f\, x]^2\sqrt{\frac{a+b\,\text{Tan}[e+f\, x]}{\sqrt{\text{Sec}[e+f\, x]^2}}}\,\sqrt{c+d\,\text{Tan}[e+f\, x]}+\end{aligned}$$

$$\begin{aligned}&\left(1\Bigg/\left(4\sqrt{c-i\, d}\,\sqrt{c+i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\,\sqrt{\frac{a+b\,\text{Tan}[e+f\, x]}{\sqrt{\text{Sec}[e+f\, x]^2}}}\,\sqrt{\frac{c+d\,\text{Tan}[e+f\, x]}{\sqrt{\text{Sec}[e+f\, x]^2}}}\right)\right)\\&i\,\Bigg(-\sqrt{a-i\, b}\,\sqrt{c+i\, d}\,\text{Log}\Big[-\Big(\Big(2\, i\,\Big(2\, a\, c-2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(-i+\text{Tan}[e+f\, x]\big)+\\&\qquad a\, d\,\big(-i+\text{Tan}[e+f\, x]\big)+2\sqrt{a-i\, b}\,\sqrt{c-i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\\&\qquad\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\Big(\big(a-i\, b\big)^{3/2}\sqrt{c-i\, d}\,\big(i+\text{Tan}[e+f\, x]\big)\Big)\Big)\Big]+\\&\quad\sqrt{a+i\, b}\,\sqrt{c-i\, d}\,\text{Log}\Big[\Big(2\, i\,\Big(2\, a\, c+2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(i+\text{Tan}[e+f\, x]\big)+\\&\qquad a\, d\,\big(i+\text{Tan}[e+f\, x]\big)+2\sqrt{a+i\, b}\,\sqrt{c+i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\\&\qquad\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\Big(\big(a+i\, b\big)^{3/2}\sqrt{c+i\, d}\,\big(-i+\text{Tan}[e+f\, x]\big)\Big)\Big]\Bigg)\\&\sqrt{c+d\,\text{Tan}[e+f\, x]}\,\left(b\sqrt{\text{Sec}[e+f\, x]^2}-\frac{\text{Tan}[e+f\, x]\,\big(a+b\,\text{Tan}[e+f\, x]\big)}{\sqrt{\text{Sec}[e+f\, x]^2}}\right)-\end{aligned}$$

$$\begin{aligned}&\frac{1}{4\sqrt{c-i\, d}\,\sqrt{c+i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\,\left(\frac{c+d\,\text{Tan}[e+f\, x]}{\sqrt{\text{Sec}[e+f\, x]^2}}\right)^{3/2}}\\&i\,\Bigg(-\sqrt{a-i\, b}\,\sqrt{c+i\, d}\\&\quad\text{Log}\Big[-\Big(\Big(2\, i\,\Big(2\, a\, c-2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(-i+\text{Tan}[e+f\, x]\big)+a\, d\,\big(-i+\text{Tan}[e+f\, x]\big)+\\&\qquad 2\sqrt{a-i\, b}\,\sqrt{c-i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\,\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\\&\qquad\Big(\big(a-i\, b\big)^{3/2}\sqrt{c-i\, d}\,\big(i+\text{Tan}[e+f\, x]\big)\Big)\Big)\Big]+\sqrt{a+i\, b}\,\sqrt{c-i\, d}\\&\quad\text{Log}\Big[\Big(2\, i\,\Big(2\, a\, c+2\, i\, b\, d\,\text{Tan}[e+f\, x]+b\, c\,\big(i+\text{Tan}[e+f\, x]\big)+a\, d\,\big(i+\text{Tan}[e+f\, x]\big)+\\&\qquad 2\sqrt{a+i\, b}\,\sqrt{c+i\, d}\,\sqrt{a+b\,\text{Tan}[e+f\, x]}\,\sqrt{c+d\,\text{Tan}[e+f\, x]}\Big)\Big)\Big/\\&\qquad\Big(\big(a+i\, b\big)^{3/2}\sqrt{c+i\, d}\,\big(-i+\text{Tan}[e+f\, x]\big)\Big)\Big]\Bigg)\sqrt{\frac{a+b\,\text{Tan}[e+f\, x]}{\sqrt{\text{Sec}[e+f\, x]^2}}}\end{aligned}$$

$$\sqrt{c+d\,\text{Tan}[e+f\, x]}\,\left(d\sqrt{\text{Sec}[e+f\, x]^2}-\frac{\text{Tan}[e+f\, x]\,\big(c+d\,\text{Tan}[e+f\, x]\big)}{\sqrt{\text{Sec}[e+f\, x]^2}}\right)+$$

$$\frac{1}{2\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{\frac{c+d\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}}$$

$$\mathrm{i}\,\sqrt{\frac{a+b\,\mathrm{Tan}[e+f\,x]}{\sqrt{\mathrm{Sec}[e+f\,x]^2}}}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\,\Bigg(-\Bigg(\Bigg(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])\,\Bigg(-\Bigg(\Bigg(2\,\mathrm{i}\,\Big(b\,c\,\mathrm{Sec}[e+f\,x]^2+a\,d\,\mathrm{Sec}[e+f\,x]^2-2\,\mathrm{i}\,b\,d\,\mathrm{Sec}[e+f\,x]^2+\Big(\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,d\,\mathrm{Sec}[e+f\,x]^2\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)+\Big(\sqrt{a-\mathrm{i}\,b}\,b\sqrt{c-\mathrm{i}\,d}\,\mathrm{Sec}[e+f\,x]^2\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Bigg)\Bigg/\Big((a-\mathrm{i}\,b)^{3/2}\sqrt{c-\mathrm{i}\,d}\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])\Big)\Bigg)+\Big(2\,\mathrm{i}\,\mathrm{Sec}[e+f\,x]^2\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])+a\,d\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big((a-\mathrm{i}\,b)^{3/2}\sqrt{c-\mathrm{i}\,d}\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])^2\Big)\Bigg)\Bigg)\Bigg/\Big(2\,\Big(2\,a\,c-2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])+a\,d\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])+2\sqrt{a-\mathrm{i}\,b}\,\sqrt{c-\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Bigg)-\Big(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{c-\mathrm{i}\,d}\,\sqrt{c+\mathrm{i}\,d}\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])\Big(\Big(2\,\mathrm{i}\,\Big(b\,c\,\mathrm{Sec}[e+f\,x]^2+a\,d\,\mathrm{Sec}[e+f\,x]^2+2\,\mathrm{i}\,b\,d\,\mathrm{Sec}[e+f\,x]^2+\Big(\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,d\,\mathrm{Sec}[e+f\,x]^2\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)+\Big(\sqrt{a+\mathrm{i}\,b}\,b\sqrt{c+\mathrm{i}\,d}\,\mathrm{Sec}[e+f\,x]^2\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big/\Big(\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big)\Big/\Big((a+\mathrm{i}\,b)^{3/2}\sqrt{c+\mathrm{i}\,d}\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])\Big)-\Big(2\,\mathrm{i}\,\mathrm{Sec}[e+f\,x]^2\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])+a\,d\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Big/\Big((a+\mathrm{i}\,b)^{3/2}\sqrt{c+\mathrm{i}\,d}\,(-\mathrm{i}+\mathrm{Tan}[e+f\,x])^2\Big)\Big)\Big)\Big/\Big(2\,\Big(2\,a\,c+2\,\mathrm{i}\,b\,d\,\mathrm{Tan}[e+f\,x]+b\,c\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])+a\,d\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])+2\sqrt{a+\mathrm{i}\,b}\,\sqrt{c+\mathrm{i}\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\Big)\Big)\Bigg)$$

Problem 1286: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Optimal (type 3, 163 leaves, 7 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a-i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{\sqrt{a-i b}\,\sqrt{c-i d}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a+i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{\sqrt{a+i b}\,\sqrt{c+i d}\,f}$$

Result (type 4, 54 252 leaves): Display of huge result suppressed!

Problem 1287: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\text{Tan}[e+f x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 218 leaves, 8 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a-i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{(a-i b)^{3/2}\,\sqrt{c-i d}\,f}+$$

$$\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a+i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{(a+i b)^{3/2}\,\sqrt{c+i d}\,f}-\frac{2\,b^2\,\sqrt{c+d\,\text{Tan}[e+f x]}}{(a^2+b^2)\,(b c-a d)\,f\,\sqrt{a+b\,\text{Tan}[e+f x]}}$$

Result (type 4, 92 860 leaves): Display of huge result suppressed!

Problem 1288: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\text{Tan}[e+f x])^{5/2}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\,dx$$

Optimal (type 3, 295 leaves, 9 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a-i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{(a-i b)^{5/2}\,\sqrt{c-i d}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i d}\,\sqrt{a+b\,\text{Tan}[e+f x]}}{\sqrt{a+i b}\,\sqrt{c+d\,\text{Tan}[e+f x]}}\right]}{(a+i b)^{5/2}\,\sqrt{c+i d}\,f}-$$

$$\frac{2\,b^2\,\sqrt{c+d\,\text{Tan}[e+f x]}}{3\,(a^2+b^2)\,(b c-a d)\,f\,(a+b\,\text{Tan}[e+f x])^{3/2}}-\frac{4\,b^2\,(3 a b c-4 a^2 d-b^2 d)\,\sqrt{c+d\,\text{Tan}[e+f x]}}{3\,(a^2+b^2)^2\,(b c-a d)^2\,f\,\sqrt{a+b\,\text{Tan}[e+f x]}}$$

Result (type 4, 144 931 leaves): Display of huge result suppressed!

Problem 1289: Humongous result has more than 200000 leaves.

$$\int \frac{(a+b\,\text{Tan}[e+f x])^{7/2}}{(c+d\,\text{Tan}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 356 leaves, 14 steps):

$$-\frac{i\,(a-i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{i\,(a+i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{3/2}\,f}-$$

$$\frac{b^{5/2}\,(3\,b\,c-7\,a\,d)\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{d^{5/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}{d\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-$$

$$\frac{1}{d^2\,(c^2+d^2)\,f}b\,\left(2\,a\,d\,(2\,b\,c-a\,d)-b^2\,(3\,c^2+d^2)\right)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}$$

Result (type ?, 635 230 leaves) : Display of huge result suppressed!

Problem 1290: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^{5/2}}{(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 273 leaves, 13 steps) :

$$-\frac{i\,(a-i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{i\,(a+i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{3/2}\,f}+$$

$$\frac{2\,b^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{d^{3/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{d\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 440 643 leaves) : Display of huge result suppressed!

Problem 1291: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^{3/2}}{(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 213 leaves, 8 steps) :

$$-\frac{i\,(a-i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{3/2}\,f}+$$

$$\frac{i\,(a+i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{3/2}\,f}+\frac{2\,(b\,c-a\,d)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 273 423 leaves) : Display of huge result suppressed!

Problem 1292: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 206 leaves, 8 steps):

$$-\frac{i\sqrt{a-i\,b}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{3/2}\,f}+\frac{i\sqrt{a+i\,b}\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{3/2}\,f}-\frac{2\,d\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{(c^2+d^2)\,f\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 4, 183 017 leaves): Display of huge result suppressed!

Problem 1293: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 218 leaves, 8 steps):

$$-\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{a-i\,b}\,(c-i\,d)^{3/2}\,f}+\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\right]}{\sqrt{a+i\,b}\,(c+i\,d)^{3/2}\,f}+\frac{2\,d^2\sqrt{a+b\,\mathrm{Tan}[e+f\,x]}}{(b\,c-a\,d)\,(c^2+d^2)\,f\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}$$

Result (type 4, 92 834 leaves): Display of huge result suppressed!

Problem 1294: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Tan}[e+f\,x])^{3/2}\,(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 301 leaves, 9 steps):

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a-i\,b)^{3/2}\,(c-i\,d)^{3/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a+i\,b)^{3/2}\,(c+i\,d)^{3/2}\,f}-\frac{2\,b^2}{(a^2+b^2)\,(b\,c-a\,d)\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-\frac{2\,d\,(a^2\,d^2+b^2\,(c^2+2\,d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{(a^2+b^2)\,(b\,c-a\,d)^2\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 4, 183 335 leaves) : Display of huge result suppressed!

Problem 1295: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\text{Tan}[e+f\,x])^{5/2}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 417 leaves, 10 steps) :

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a-i\,b)^{5/2}\,(c-i\,d)^{3/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a+i\,b)^{5/2}\,(c+i\,d)^{3/2}\,f}-\frac{2\,b^2}{3\,(a^2+b^2)\,(b\,c-a\,d)\,f\,(a+b\,\text{Tan}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}-\frac{4\,b^2\,(3\,a\,b\,c-5\,a^2\,d-2\,b^2\,d)}{3\,(a^2+b^2)^2\,(b\,c-a\,d)^2\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+\left(2\,d\,(3\,a^4\,d^3-6\,a\,b^3\,c\,(c^2+d^2)+b^4\,d\,(5\,c^2+8\,d^2)+a^2\,b^2\,d\,(11\,c^2+17\,d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\right)\Big/\left(3\,(a^2+b^2)^2\,(b\,c-a\,d)^3\,(c^2+d^2)\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)$$

Result (type ?, 273 785 leaves) : Display of huge result suppressed!

Problem 1296: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^{9/2}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 470 leaves, 15 steps) :

$$-\frac{i\,(a-i\,b)^{9/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,(a+i\,b)^{9/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{5/2}\,f}-$$

$$\frac{b^{7/2}\,(5\,b\,c-9\,a\,d)\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{d^{7/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,(a+b\,\text{Tan}[e+f\,x])^{5/2}}{3\,d\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-$$

$$\frac{2\,(b\,c-a\,d)^2\,(5\,b\,c^2+6\,a\,c\,d+11\,b\,d^2)\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}{3\,d^2\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}+\frac{1}{d^3\,(c^2+d^2)^2\,f}$$

$$b\,\left(4\,a^3\,c\,d^3-4\,a^2\,b\,d^2\,(c^2-2\,d^2)-4\,a\,b^2\,c\,d\,(c^2+4\,d^2)+b^3\,(5\,c^4+10\,c^2\,d^2+d^4)\right)$$

$$\sqrt{a+b\,\text{Tan}[e+f\,x]}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}$$

Result (type ?, 936 188 leaves): Display of huge result suppressed!

Problem 1297: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^{7/2}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 347 leaves, 14 steps):

$$-\frac{i\,(a-i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}+$$

$$\frac{i\,(a+i\,b)^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{5/2}\,f}+\frac{2\,b^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{d^{5/2}\,f}-$$

$$\frac{2\,(b\,c-a\,d)^2\,(a+b\,\text{Tan}[e+f\,x])^{3/2}}{3\,d\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{2\,(b\,c-a\,d)^2\,(2\,a\,c\,d+b\,(c^2+3\,d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{d^2\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 691 126 leaves): Display of huge result suppressed!

Problem 1298: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^{5/2}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 292 leaves, 9 steps):

$$-\frac{i\,(a-i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,(a+i\,b)^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{5/2}\,f}-\frac{2\,(b\,c-a\,d)^2\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,d\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{2\,(b\,c-a\,d)\,(6\,a\,c\,d+b\,(c^2+7\,d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,d\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 545 056 leaves) : Display of huge result suppressed!

Problem 1299: Humongous result has more than 200000 leaves.

$$\int \frac{(a+b\,\text{Tan}[e+f\,x])^{3/2}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 276 leaves, 9 steps) :

$$-\frac{i\,(a-i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,(a+i\,b)^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{5/2}\,f}+\frac{2\,(b\,c-a\,d)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{4\,(b\,c^2-3\,a\,c\,d-2\,b\,d^2)\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 416 193 leaves) : Display of huge result suppressed!

Problem 1300: Humongous result has more than 200000 leaves.

$$\int \frac{\sqrt{a+b\,\text{Tan}[e+f\,x]}}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 283 leaves, 9 steps) :

$$-\frac{i\,\sqrt{a-i\,b}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c-i\,d)^{5/2}\,f}+\frac{i\,\sqrt{a+i\,b}\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(c+i\,d)^{5/2}\,f}-\frac{2\,d\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\frac{2\,d\,(6\,a\,c\,d-b\,(5\,c^2-d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(b\,c-a\,d)\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type ?, 273 530 leaves) : Display of huge result suppressed!

Problem 1301: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{a+b\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 295 leaves, 9 steps) :

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{a-i\,b}\,(c-i\,d)^{5/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{\sqrt{a+i\,b}\,(c+i\,d)^{5/2}\,f}+\frac{2\,d^2\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(b\,c-a\,d)\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{4\,d^2\,(3\,a\,c\,d-b\,(4\,c^2+d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(b\,c-a\,d)^2\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}$$

Result (type 4, 144 931 leaves) : Display of huge result suppressed!

Problem 1302: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\text{Tan}[e+f\,x])^{3/2}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 433 leaves, 10 steps) :

$$-\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a-i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a-i\,b)^{3/2}\,(c-i\,d)^{5/2}\,f}+\frac{i\,\text{ArcTanh}\left[\frac{\sqrt{c+i\,d}\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{\sqrt{a+i\,b}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}}\right]}{(a+i\,b)^{3/2}\,(c+i\,d)^{5/2}\,f}-\frac{2\,b^2}{(a^2+b^2)\,(b\,c-a\,d)\,f\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}-\frac{2\,d\,(a^2\,d^2+b^2\,(3\,c^2+4\,d^2))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}}{3\,(a^2+b^2)\,(b\,c-a\,d)^2\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^{3/2}}+\left(2\,(6\,a^3\,c\,d^4+6\,a\,b^2\,c\,d^4-a^2\,b\,d^3\,(11\,c^2+5\,d^2)-b^3\,(3\,c^4\,d+17\,c^2\,d^3+8\,d^5))\,\sqrt{a+b\,\text{Tan}[e+f\,x]}\right)\Big/\left(3\,(a^2+b^2)\,(b\,c-a\,d)^3\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)$$

Result (type ?, 273 872 leaves) : Display of huge result suppressed!

Problem 1303: Humongous result has more than 200000 leaves.

$$\int\frac{1}{(a+b\,\text{Tan}[e+f\,x])^{5/2}\,(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 596 leaves, 11 steps) :

$$-\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c-i d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a-i b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a-i b)^{5/2}\,(c-i d)^{5/2}\,f}+\frac{i\,\mathrm{ArcTanh}\left[\frac{\sqrt{c+i d}\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}}{\sqrt{a+i b}\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}}\right]}{(a+i b)^{5/2}\,(c+i d)^{5/2}\,f}-$$

$$\frac{2 b^2}{3\,(a^2+b^2)\,(b c-a d)\,f\,(a+b\,\mathrm{Tan}[e+f x])^{3/2}\,(c+d\,\mathrm{Tan}[e+f x])^{3/2}}-$$

$$\frac{4 b^2\,(a b c-2 a^2 d-b^2 d)}{(a^2+b^2)^2\,(b c-a d)^2\,f\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\,(c+d\,\mathrm{Tan}[e+f x])^{3/2}}+$$

$$\left(2 d\,\left(a^4 d^3-6 a b^3 c\,(c^2+d^2)+b^4 d\,(7 c^2+8 d^2)+a^2 b^2 d\,(13 c^2+15 d^2)\right)\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\right)\Big/$$
$$\left(3\,(a^2+b^2)^2\,(b c-a d)^3\,(c^2+d^2)\,f\,(c+d\,\mathrm{Tan}[e+f x])^{3/2}\right)-$$
$$\left(4 d\,\left(3 a^5 c d^4+6 a^3 b^2 c d^4-a^4 b d^3\,(7 c^2+4 d^2)+3 a b^4 c\,(c^4+2 c^2 d^2+2 d^4)-\right.\right.$$
$$\left.\left.b^5 d\,(4 c^4+15 c^2 d^2+8 d^4)-a^2 b^3 d\,(7 c^4+28 c^2 d^2+15 d^4)\right)\,\sqrt{a+b\,\mathrm{Tan}[e+f x]}\right)\Big/$$
$$\left(3\,(a^2+b^2)^2\,(b c-a d)^4\,(c^2+d^2)^2\,f\,\sqrt{c+d\,\mathrm{Tan}[e+f x]}\right)$$

Result (type ?, 416 578 leaves) : Display of huge result suppressed!

Problem 1304: Unable to integrate problem.

$$\int (a+b\,\mathrm{Tan}[e+f x])^m\,(c+d\,\mathrm{Tan}[e+f x])^n\,dx$$

Optimal (type 6, 257 leaves, 7 steps) :

$$\left(\mathrm{AppellF1}\left[1+m,\,-n,\,1,\,2+m,\,-\frac{d\,(a+b\,\mathrm{Tan}[e+f x])}{b c-a d},\,\frac{a+b\,\mathrm{Tan}[e+f x]}{a-i b}\right]\,(a+b\,\mathrm{Tan}[e+f x])^{1+m}\right.$$
$$\left.(c+d\,\mathrm{Tan}[e+f x])^n\,\left(\frac{b\,(c+d\,\mathrm{Tan}[e+f x])}{b c-a d}\right)^{-n}\right)\Big/\left(2\,(i a+b)\,f\,(1+m)\right)-$$
$$\left(\mathrm{AppellF1}\left[1+m,\,-n,\,1,\,2+m,\,-\frac{d\,(a+b\,\mathrm{Tan}[e+f x])}{b c-a d},\,\frac{a+b\,\mathrm{Tan}[e+f x]}{a+i b}\right]\right.$$
$$\left.(a+b\,\mathrm{Tan}[e+f x])^{1+m}\,(c+d\,\mathrm{Tan}[e+f x])^n\,\left(\frac{b\,(c+d\,\mathrm{Tan}[e+f x])}{b c-a d}\right)^{-n}\right)\Big/\left(2\,(i a-b)\,f\,(1+m)\right)$$

Result (type 8, 27 leaves) :

$$\int (a+b\,\mathrm{Tan}[e+f x])^m\,(c+d\,\mathrm{Tan}[e+f x])^n\,dx$$

Problem 1308: Result unnecessarily involves imaginary or complex numbers.

$$\int (a+b\,\mathrm{Tan}[e+f x])^m\,dx$$

Optimal (type 5, 167 leaves, 5 steps) :

$$\left(b\,\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a-\sqrt{-b^2}}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right)\Big/\left(2\sqrt{-b^2}\left(a-\sqrt{-b^2}\right)f\,(1+m)\right)-\left(b\,\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a+\sqrt{-b^2}}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right)\Big/\left(2\sqrt{-b^2}\left(a+\sqrt{-b^2}\right)f\,(1+m)\right)$$

Result (type 5, 161 leaves):

$$-\frac{1}{2\,f\,m}i\,(a+b\,\text{Tan}[e+f\,x])^m\left(\text{Hypergeometric2F1}\left[-m,-m,1-m,-\frac{a+i\,b}{b\,(-i+\text{Tan}[e+f\,x])}\right]\left(\frac{a+b\,\text{Tan}[e+f\,x]}{b\,(-i+\text{Tan}[e+f\,x])}\right)^{-m}-\text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{-a+i\,b}{b\,(i+\text{Tan}[e+f\,x])}\right]\left(\frac{a+b\,\text{Tan}[e+f\,x]}{b\,(i+\text{Tan}[e+f\,x])}\right)^{-m}\right)$$

Problem 1310: Unable to integrate problem.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^m}{(c+d\,\text{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 5, 301 leaves, 9 steps):

$$\frac{\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}}{2\,(i\,a+b)\,(c-i\,d)^2\,f\,(1+m)}-\left(\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right)\Big/\left(2\,(i\,a-b)\,(c+i\,d)^2\,f\,(1+m)\right)-\left(d^2\left(2\,a\,c\,d-b\left(c^2\,(2-m)-d^2\,m\right)\right)\text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right)\Big/\left((b\,c-a\,d)^2\left(c^2+d^2\right)^2f\,(1+m)\right)+\frac{d^2\,(a+b\,\text{Tan}[e+f\,x])^{1+m}}{(b\,c-a\,d)\left(c^2+d^2\right)f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 8, 27 leaves):

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^m}{(c+d\,\text{Tan}[e+f\,x])^2}\,dx$$

Problem 1311: Unable to integrate problem.

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^m}{(c+d\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 5, 455 leaves, 10 steps) :

$$\frac{\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right]\,(a+b\,\text{Tan}[e+f\,x])^{1+m}}{2\,(i\,a+b)\,(c-i\,d)^3\,f\,(1+m)}+$$

$$\left(\text{Hypergeometric2F1}\left[1,1+m,2+m,\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right]\,(a+b\,\text{Tan}[e+f\,x])^{1+m}\right)\Big/$$

$$\left(2\,(a+i\,b)\,(i\,c-d)^3\,f\,(1+m)\right)+\Big(d^2\,\left(2\,a^2\,d^2\,(3\,c^2-d^2)-\right.$$

$$\left.4\,a\,b\,c\,d\,\left(c^2\,(3-m)-d^2\,(1+m)\right)-b^2\,\left(d^4\,(1-m)\,m+2\,c^2\,d^2\,(1+3\,m-m^2)-c^4\,(6-5\,m+m^2)\right)\right)$$

$$\text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d}\right]\,(a+b\,\text{Tan}[e+f\,x])^{1+m}\Big)\Big/$$

$$\left(2\,(b\,c-a\,d)^3\,(c^2+d^2)^3\,f\,(1+m)\right)+\frac{d^2\,(a+b\,\text{Tan}[e+f\,x])^{1+m}}{2\,(b\,c-a\,d)\,(c^2+d^2)\,f\,(c+d\,\text{Tan}[e+f\,x])^2}-$$

$$\frac{d^2\,\left(4\,a\,c\,d-b\,\left(d^2\,(1-m)+c^2\,(5-m)\right)\right)\,(a+b\,\text{Tan}[e+f\,x])^{1+m}}{2\,(b\,c-a\,d)^2\,(c^2+d^2)^2\,f\,(c+d\,\text{Tan}[e+f\,x])}$$

Result (type 8, 27 leaves) :

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^m}{(c+d\,\text{Tan}[e+f\,x])^3}\,dx$$

Problem 1312: Unable to integrate problem.

$$\int(a+b\,\text{Tan}[e+f\,x])^m\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 6, 283 leaves, 7 steps) :

$$\left(\left(b\,c-a\,d\right)\,\text{AppellF1}\left[1+m,-\frac{3}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right]\right.$$

$$\left.(a+b\,\text{Tan}[e+f\,x])^{1+m}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,b\,(i\,a+b)\,f\,(1+m)\,\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)-$$

$$\left(\left(b\,c-a\,d\right)\,\text{AppellF1}\left[1+m,-\frac{3}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right]\right.$$

$$\left.(a+b\,\text{Tan}[e+f\,x])^{1+m}\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,(i\,a-b)\,b\,f\,(1+m)\,\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)$$

Result (type 8, 29 leaves) :

$$\int(a+b\,\text{Tan}[e+f\,x])^m\,(c+d\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Problem 1313: Unable to integrate problem.

$$\int (a+b\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 6, 261 leaves, 7 steps):

$$\left(\text{AppellF1}\left[1+m,-\frac{1}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,(i\,a+b)\,f\,(1+m)\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)-\left(\text{AppellF1}\left[1+m,-\frac{1}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)\Big/\left(2\,(i\,a-b)\,f\,(1+m)\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)$$

Result (type 8, 29 leaves):

$$\int (a+b\,\text{Tan}[e+f\,x])^m\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\,dx$$

Problem 1314: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Tan}[e+f\,x])^m}{\sqrt{c+d\,\text{Tan}[e+f\,x]}}\,dx$$

Optimal (type 6, 261 leaves, 7 steps):

$$\left(\text{AppellF1}\left[1+m,\frac{1}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Big/\left(2\,(i\,a+b)\,f\,(1+m)\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)-\left(\text{AppellF1}\left[1+m,\frac{1}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Big/\left(2\,(i\,a-b)\,f\,(1+m)\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)$$

Result (type 8, 29 leaves):

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^m}{\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}}\,dx$$

Problem 1315: Unable to integrate problem.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^m}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 6, 283 leaves, 7 steps):

$$\left(b\,\mathrm{AppellF1}\left[1+m,\frac{3}{2},1,2+m,-\frac{d\,(a+b\,\mathrm{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\mathrm{Tan}[e+f\,x]}{a-i\,b}\right](a+b\,\mathrm{Tan}[e+f\,x])^{1+m}\sqrt{\frac{b\,(c+d\,\mathrm{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Bigg/\left(2\,(i\,a+b)\,(b\,c-a\,d)\,f\,(1+m)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)-\left(b\,\mathrm{AppellF1}\left[1+m,\frac{3}{2},1,2+m,-\frac{d\,(a+b\,\mathrm{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\mathrm{Tan}[e+f\,x]}{a+i\,b}\right](a+b\,\mathrm{Tan}[e+f\,x])^{1+m}\sqrt{\frac{b\,(c+d\,\mathrm{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Bigg/\left(2\,(i\,a-b)\,(b\,c-a\,d)\,f\,(1+m)\,\sqrt{c+d\,\mathrm{Tan}[e+f\,x]}\right)$$

Result (type 8, 29 leaves):

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^m}{(c+d\,\mathrm{Tan}[e+f\,x])^{3/2}}\,dx$$

Problem 1316: Unable to integrate problem.

$$\int \frac{(a+b\,\mathrm{Tan}[e+f\,x])^m}{(c+d\,\mathrm{Tan}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 6, 287 leaves, 7 steps):

$$\left(b^2\,\text{AppellF1}\left[1+m,\frac{5}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a-i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right.$$
$$\left.\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Big/\left(2\,(i\,a+b)\,(b\,c-a\,d)^2\,f\,(1+m)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)-$$
$$\left(b^2\,\text{AppellF1}\left[1+m,\frac{5}{2},1,2+m,-\frac{d\,(a+b\,\text{Tan}[e+f\,x])}{b\,c-a\,d},\frac{a+b\,\text{Tan}[e+f\,x]}{a+i\,b}\right](a+b\,\text{Tan}[e+f\,x])^{1+m}\right.$$
$$\left.\sqrt{\frac{b\,(c+d\,\text{Tan}[e+f\,x])}{b\,c-a\,d}}\right)\Big/\left(2\,(i\,a-b)\,(b\,c-a\,d)^2\,f\,(1+m)\,\sqrt{c+d\,\text{Tan}[e+f\,x]}\right)$$

Result (type 8, 29 leaves):

$$\int\frac{(a+b\,\text{Tan}[e+f\,x])^m}{(c+d\,\text{Tan}[e+f\,x])^{5/2}}\,dx$$

Problem 1317: Unable to integrate problem.

$$\int\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n\,(a+i\,a\,\text{Tan}[e+f\,x])^m\,dx$$

Optimal (type 6, 99 leaves, 4 steps):

$$\frac{1}{f\,(1+n\,p)}\text{AppellF1}[1+n\,p,1-m,1,2+n\,p,-i\,\text{Tan}[e+f\,x],i\,\text{Tan}[e+f\,x]]$$
$$(1+i\,\text{Tan}[e+f\,x])^{-m}\,\text{Tan}[e+f\,x]\,\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n\,(a+i\,a\,\text{Tan}[e+f\,x])^m$$

Result (type 8, 32 leaves):

$$\int\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n\,(a+i\,a\,\text{Tan}[e+f\,x])^m\,dx$$

Problem 1318: Unable to integrate problem.

$$\int\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 5, 132 leaves, 8 steps):

$$-\frac{3\,a^3\,\text{Tan}[e+f\,x]\,\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n}{f\,(1+n\,p)}+\frac{1}{f\,(1+n\,p)}$$
$$4\,a^3\,\text{Hypergeometric2F1}[1,1+n\,p,2+n\,p,i\,\text{Tan}[e+f\,x]]\,\text{Tan}[e+f\,x]\,\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n-$$
$$\frac{i\,a^3\,\text{Tan}[e+f\,x]^2\,\left(c\,(d\,\text{Tan}[e+f\,x])^p\right)^n}{f\,(2+n\,p)}$$

Result (type 8, 32 leaves):

$$\int\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)^3\,dx$$

Problem 1319: Unable to integrate problem.

$$\int\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)^2\,dx$$

Optimal (type 5, 93 leaves, 5 steps):

$$-\frac{a^2\,\mathrm{Tan}[e+f\,x]\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n}{f\left(1+n\,p\right)}+\frac{1}{f\left(1+n\,p\right)}$$
$$2\,a^2\,\mathrm{Hypergeometric2F1}[1,\,1+n\,p,\,2+n\,p,\,i\,\mathrm{Tan}[e+f\,x]]\,\mathrm{Tan}[e+f\,x]\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n$$

Result (type 8, 32 leaves):

$$\int\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)^2\,dx$$

Problem 1320: Unable to integrate problem.

$$\int\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\,dx$$

Optimal (type 5, 54 leaves, 4 steps):

$$\frac{1}{f\left(1+n\,p\right)}a\,\mathrm{Hypergeometric2F1}[1,\,1+n\,p,\,2+n\,p,\,i\,\mathrm{Tan}[e+f\,x]]\,\mathrm{Tan}[e+f\,x]\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n$$

Result (type 8, 30 leaves):

$$\int\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\left(a+i\,a\,\mathrm{Tan}[e+f\,x]\right)\,dx$$

Problem 1321: Unable to integrate problem.

$$\int\frac{\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n}{a+i\,a\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 5, 134 leaves, 8 steps):

$$\frac{1}{a\,f\left(1+n\,p\right)}$$
$$\mathrm{Hypergeometric2F1}\left[2,\,\frac{1}{2}\left(1+n\,p\right),\,\frac{1}{2}\left(3+n\,p\right),\,-\mathrm{Tan}[e+f\,x]^2\right]\mathrm{Tan}[e+f\,x]\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n-$$
$$\frac{1}{a\,f\left(2+n\,p\right)}i\,\mathrm{Hypergeometric2F1}\left[2,\,\frac{1}{2}\left(2+n\,p\right),\,\frac{1}{2}\left(4+n\,p\right),\,-\mathrm{Tan}[e+f\,x]^2\right]$$
$$\mathrm{Tan}[e+f\,x]^2\left(c\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n$$

Result (type 8, 32 leaves):

$$\int \frac{\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n}{a+\text{i}\,a\,\text{Tan}[e+f\,x]}\,dx$$

Problem 1322: Unable to integrate problem.

$$\int \frac{\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n}{\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^2}\,dx$$

Optimal (type 5, 227 leaves, 8 steps):

$$\frac{1}{8\,a^2\,f\,\left(1+n\,p\right)}\left(1-4\,n\,p+2\,n^2\,p^2\right)\,\text{Hypergeometric2F1}[1,\,1+n\,p,\,2+n\,p,\,-\text{i}\,\text{Tan}[e+f\,x]]\,\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n+\frac{1}{8\,a^2\,f\,\left(1+n\,p\right)}\text{Hypergeometric2F1}[1,\,1+n\,p,\,2+n\,p,\,\text{i}\,\text{Tan}[e+f\,x]]\,\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n+\frac{\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n}{4\,a^2\,f\,\left(1+\text{i}\,\text{Tan}[e+f\,x]\right)^2}+\frac{\left(2-n\,p\right)\,\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n}{4\,a^2\,f\,\left(1+\text{i}\,\text{Tan}[e+f\,x]\right)}$$

Result (type 8, 32 leaves):

$$\int \frac{\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n}{\left(a+\text{i}\,a\,\text{Tan}[e+f\,x]\right)^2}\,dx$$

Problem 1323: Unable to integrate problem.

$$\int \left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^m\,dx$$

Optimal (type 6, 201 leaves, 8 steps):

$$\frac{1}{2\,f\,\left(1+n\,p\right)}\text{AppellF1}\left[1+n\,p,\,-m,\,1,\,2+n\,p,\,-\frac{b\,\text{Tan}[e+f\,x]}{a},\,-\text{i}\,\text{Tan}[e+f\,x]\right]\,\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^m\,\left(1+\frac{b\,\text{Tan}[e+f\,x]}{a}\right)^{-m}+\frac{1}{2\,f\,\left(1+n\,p\right)}\text{AppellF1}\left[1+n\,p,\,-m,\,1,\,2+n\,p,\,-\frac{b\,\text{Tan}[e+f\,x]}{a},\,\text{i}\,\text{Tan}[e+f\,x]\right]\,\text{Tan}[e+f\,x]\,\left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^m\,\left(1+\frac{b\,\text{Tan}[e+f\,x]}{a}\right)^{-m}$$

Result (type 8, 29 leaves):

$$\int \left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^m\,dx$$

Problem 1324: Result more than twice size of optimal antiderivative.

$$\int \left(c\,\left(d\,\text{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\text{Tan}[e+f\,x]\right)^3\,dx$$

Optimal (type 5, 219 leaves, 7 steps):

$$\frac{3\,a\,b^2\,\mathrm{Tan}[e+f\,x]\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n}{f\,(1+n\,p)}+\frac{1}{f\,(1+n\,p)}a\,\left(a^2-3\,b^2\right)\,\mathrm{Hypergeometric2F1}\left[1,\frac{1}{2}\,(1+n\,p),\frac{1}{2}\,(3+n\,p),-\mathrm{Tan}[e+f\,x]^2\right]\,\mathrm{Tan}[e+f\,x]\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n+\frac{b^3\,\mathrm{Tan}[e+f\,x]^2\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n}{f\,(2+n\,p)}+\frac{1}{f\,(2+n\,p)}b\,\left(3\,a^2-b^2\right)\,\mathrm{Hypergeometric2F1}\left[1,\frac{1}{2}\,(2+n\,p),\frac{1}{2}\,(4+n\,p),-\mathrm{Tan}[e+f\,x]^2\right]\,\mathrm{Tan}[e+f\,x]^2\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n$$

Result (type 5, 519 leaves):

$$-\left(\left(b^3\,\mathrm{Cos}[e+f\,x]\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}\,(-2-n\,p),\frac{1}{2}\,(-2-n\,p),-\frac{n\,p}{2},\mathrm{Cos}[e+f\,x]^2\right]\,\mathrm{Sin}[e+f\,x]^4\,\left(\mathrm{Sin}[e+f\,x]^2\right)^{\frac{1}{2}\,(-4-n\,p)}\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,(-2-n\,p)\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\right)\right)-\left(3\,a\,b^2\,\mathrm{Cos}[e+f\,x]^2\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}\,(-1-n\,p),\frac{1}{2}\,(-1-n\,p),\frac{1}{2}\,(1-n\,p),\mathrm{Cos}[e+f\,x]^2\right]\,\mathrm{Sin}[e+f\,x]^3\,\left(\mathrm{Sin}[e+f\,x]^2\right)^{\frac{1}{2}\,(-3-n\,p)}\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,(-1-n\,p)\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\right)-\left(a^3\,\mathrm{Cos}[e+f\,x]^4\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}\,(1-n\,p),\frac{1}{2}\,(1-n\,p),\frac{1}{2}\,(3-n\,p),\mathrm{Cos}[e+f\,x]^2\right]\,\mathrm{Sin}[e+f\,x]\,\left(\mathrm{Sin}[e+f\,x]^2\right)^{\frac{1}{2}\,(-1-n\,p)}\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,(1-n\,p)\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\right)+\left(3\,a^2\,b\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Hypergeometric2F1}\left[-\frac{n\,p}{2},-\frac{n\,p}{2},\frac{1}{2}\,(2-n\,p),\mathrm{Cos}[e+f\,x]^2\right]\,\left(\mathrm{Sin}[e+f\,x]^2\right)^{1+\frac{1}{2}\,(-2-n\,p)}\,\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n\,\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^3\right)\Big/\left(f\,n\,p\,\left(a\,\mathrm{Cos}[e+f\,x]+b\,\mathrm{Sin}[e+f\,x]\right)^3\right)$$

Problem 1328: Unable to integrate problem.

$$\int\frac{\left(c\,\left(d\,\mathrm{Tan}[e+f\,x]\right)^p\right)^n}{\left(a+b\,\mathrm{Tan}[e+f\,x]\right)^2}\,dx$$

Optimal (type 5, 293 leaves, 9 steps):

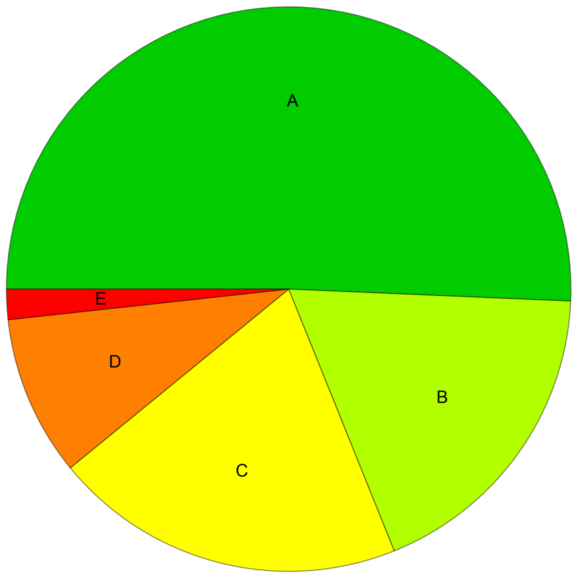
$$\left(\left(a^2-b^2\right) \text{Hypergeometric2F1}\left[1, \frac{1}{2}(1+n p), \frac{1}{2}(3+n p), -\text{Tan}[e+f x]^2\right] \text{Tan}[e+f x]\left(c\left(d \text{Tan}[e+f x]\right)^p\right)^n\right) \Big/ \left(\left(a^2+b^2\right)^2 f (1+n p)\right) +$$
$$\left(2 b^2 \text{Hypergeometric2F1}\left[1, 1+n p, 2+n p, -\frac{b \text{Tan}[e+f x]}{a}\right] \text{Tan}[e+f x]\left(c\left(d \text{Tan}[e+f x]\right)^p\right)^n\right) \Big/ \left(\left(a^2+b^2\right)^2 f (1+n p)\right) +$$
$$\left(b^2 \text{Hypergeometric2F1}\left[2, 1+n p, 2+n p, -\frac{b \text{Tan}[e+f x]}{a}\right] \text{Tan}[e+f x]\left(c\left(d \text{Tan}[e+f x]\right)^p\right)^n\right) \Big/ \left(a^2\left(a^2+b^2\right) f (1+n p)\right) - \left(2 a b \text{Hypergeometric2F1}\left[1, \frac{1}{2}(2+n p), \frac{1}{2}(4+n p), -\text{Tan}[e+f x]^2\right] \text{Tan}[e+f x]^2\left(c\left(d \text{Tan}[e+f x]\right)^p\right)^n\right) \Big/ \left(\left(a^2+b^2\right)^2 f (2+n p)\right)$$

Result (type 8, 29 leaves):

$$\int \frac{\left(c\left(d \text{Tan}[e+f x]\right)^p\right)^n}{\left(a+b \text{Tan}[e+f x]\right)^2} \, dx$$

Summary of Integration Test Results

1328 integration problems



A - 673 optimal antiderivatives

B - 242 more than twice size of optimal antiderivatives

C - 268 unnecessarily complex antiderivatives

D - 122 unable to integrate problems

E - 23 integration timeouts