Mathematica 11.3 Integration Test Results

Test results for the 855 problems in "4.3.3.1 (a+b tan)^m (c+d tan)^n (A+B tan).m"

Problem 9: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 141 leaves, 5 steps):

$$-2\,a^2\,\left(A-\mathrm{i}\,B\right)\,x+\frac{2\,a^2\,\left(\mathrm{i}\,A+B\right)\,\text{Log}[\text{Cos}[c+d\,x]]}{d}+\frac{2\,a^2\,\left(A-\mathrm{i}\,B\right)\,\text{Tan}[c+d\,x]}{d}+\frac{a^2\,\left(\mathrm{i}\,A+B\right)\,\text{Tan}[c+d\,x]^2}{d}-\frac{a^2\,\left(4\,A-5\,\mathrm{i}\,B\right)\,\text{Tan}[c+d\,x]^3}{12\,d}+\frac{\mathrm{i}\,B\,\text{Tan}[c+d\,x]^3\,\left(a^2+\mathrm{i}\,a^2\,\text{Tan}[c+d\,x]\right)}{4\,d}$$

Result (type 3, 924 leaves):

$$\Big(\mathrm{Cos}[c+d\,x]^3\,\big(\mathbb{i}\,A\,\mathrm{Cos}[c]+B\,\mathrm{Cos}[c]+A\,\mathrm{Sin}[c]-\mathbb{i}\,B\,\mathrm{Sin}[c]\big)\,\big(-2\,\mathbb{i}\,\mathrm{ArcTan}[\mathrm{Tan}[3\,c+d\,x]]\,\mathrm{Cos}[c]-2\,\mathrm{ArcTan}[\mathrm{Tan}[3\,c+d\,x]]\,\mathrm{Sin}[c]\big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(d\,\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)+$$

$$\Big(\mathrm{Cos}[c+d\,x]^3\,\big(\mathbb{i}\,A\,\mathrm{Cos}[c]+B\,\mathrm{Cos}[c]+A\,\mathrm{Sin}[c]-\mathbb{i}\,B\,\mathrm{Sin}[c]\big)\,\big(\mathrm{Cos}[c]\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]-\mathbb{i}\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]\,\mathrm{Sin}[c]\big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(d\,\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)+$$

$$\Big(\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}[c]\,\big(6\,\mathbb{i}\,A\,\mathrm{Cos}[c]+9\,B\,\mathrm{Cos}[c]-2\,A\,\mathrm{Sin}[c]+4\,\mathbb{i}\,B\,\mathrm{Sin}[c]\big)\,\Big(\frac{1}{6}\,\mathrm{Cos}[2\,c]-\frac{1}{6}\,\mathbb{i}\,\mathrm{Sin}[2\,c]\Big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(d\,\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)+$$

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

$$\Big(\big(A-\mathbb{i}\,B\big)\,\mathrm{Cos}[c+d\,x]^3\,\big(-2\,d\,x\,\mathrm{Cos}[2\,c]+2\,\mathbb{i}\,d\,x\,\mathrm{Sin}[2\,c]\big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(d\,\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)+$$

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

$$\Big(\mathrm{Cos}[c+d\,x]^2\,\mathrm{Sec}[c]\,\Big(\frac{1}{3}\,\mathrm{Cos}[2\,c]-\frac{1}{3}\,\mathbb{i}\,\mathrm{Sin}[2\,c]\Big)\,\big(7\,A\,\mathrm{Sin}[d\,x]-8\,\mathbb{i}\,B\,\mathrm{Sin}[d\,x]\big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(d\,\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)+$$

$$\Big(x\,\mathrm{Cos}[c+d\,x]^3\,\big(-2\,A\,\mathrm{Cos}[c]^2+2\,\mathbb{i}\,B\,\mathrm{Cos}[c]^2+6\,\mathbb{i}\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+6\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+6\,A\,\mathrm{Sin}[c]^2-6\,\mathbb{i}\,B\,\mathrm{Sin}[c]^2-2\,\mathbb{i}\,A\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]-2\,B\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]-\mathbb{i}\,\big(A-\mathbb{i}\,B\big)\,\big(2\,\mathrm{Cos}[2\,c]-2\,\mathbb{i}\,\mathrm{Sin}[2\,c]\big)\,\mathrm{Tan}[c]\big)\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/\Big(\big(\mathrm{Cos}[d\,x]+\mathbb{i}\,\mathrm{Sin}[d\,x]\big)^2\,\big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\Big)$$

Problem 10: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2\,\big(A+B\,\mathrm{Tan}[c+d\,x]\big)\,dx$$

Optimal (type 3, 107 leaves, 4 steps):

$$-2\,a^2\,\big(\mathbb{i}\,A+B\big)\,x-\frac{2\,a^2\,\big(A-\mathbb{i}\,B\big)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+\frac{a^2\,\big(\mathbb{i}\,A+B\big)\,\mathrm{Tan}[c+d\,x]}{d}+\frac{A\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^2}{2\,d}-\frac{\mathbb{i}\,B\,\big(a+\mathbb{i}\,a\,\mathrm{Tan}[c+d\,x]\big)^3}{3\,a\,d}$$

Result (type 3, 273 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\Big(2\,(i\,A+B)\,\text{ArcTan}[\text{Tan}[3\,c+d\,x]]\,\text{Cos}[c+d\,x]^3\,(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])-(A-i\,B)\,\text{Cos}[c+d\,x]^3\,\text{Log}\big[\text{Cos}[c+d\,x]^2\big]\,(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])+(A-i\,B)\,\text{Cos}[c+d\,x]^3\,(-4\,i\,d\,x\,\text{Cos}[2\,c]-4\,d\,x\,\text{Sin}[2\,c])+\frac{1}{3}\,(6\,A-7\,i\,B)\,\text{Cos}[c+d\,x]^2\,\text{Sec}[c]\,(i\,\text{Cos}[2\,c]+\text{Sin}[2\,c])\,\text{Sin}[d\,x]+\frac{1}{3}\,B\,\text{Cos}[c]\,\text{Sin}[d\,x]\,(i+\text{Tan}[c])^2-\frac{1}{6}\,\text{Cos}[c+d\,x]\,(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])\,(3\,A-6\,i\,B+2\,B\,\text{Tan}[c])\Big)\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 11: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 80 leaves, 3 steps):

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

Result (type 3, 263 leaves):

$$\frac{1}{4\,d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2}\,a^2\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(\text{Cos}[2\,d\,x]+i\,\text{Sin}[2\,d\,x])\,\Big(-8\,(A-i\,B)\,\text{ArcTan}[\text{Tan}[3\,c+d\,x]]\,\text{Cos}[c]\,\text{Cos}[c+d\,x]^2-i\,\Big(4\,i\,A\,d\,x\,\text{Cos}[3\,c+2\,d\,x]+4\,B\,d\,x\,\text{Cos}[3\,c+2\,d\,x]+(i\,A+B)\,\text{Cos}[c+2\,d\,x]\,\big(4\,d\,x-i\,\text{Log}\big[\text{Cos}[c+d\,x]^2\big]\big)+A\,\text{Cos}[3\,c+2\,d\,x]\,\text{Log}\big[\text{Cos}[c+d\,x]^2\big]-i\,B\,\text{Cos}[3\,c+2\,d\,x]\,\text{Log}\big[\text{Cos}[c+d\,x]^2\big]+2\,\text{Cos}[c]\,\big(-i\,B+4\,i\,A\,d\,x+4\,B\,d\,x+(A-i\,B)\,\text{Log}\big[\text{Cos}[c+d\,x]^2\big]\big)+2\,i\,A\,\text{Sin}[c]+4\,B\,\text{Sin}[c]-2\,i\,A\,\text{Sin}[c+2\,d\,x]-4\,B\,\text{Sin}[c+2\,d\,x]\Big)\Big)$$

Problem 12: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 75 leaves, 5 steps):

$$2\,a^2\,(i\,A+B)\,x+\frac{a^2\,(A-2\,i\,B)\,\text{Log}[\text{Cos}[c+d\,x]]}{d}+\frac{a^2\,A\,\text{Log}[\text{Sin}[c+d\,x]]}{d}+\frac{i\,B\,(a^2+i\,a^2\,\text{Tan}[c+d\,x])}{d}$$

Result (type 3, 201 leaves):

$$\frac{1}{4\,d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}$$
$$a^2\,\Big(-8\,i\,(A-i\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[3\,c+d\,x]]\,\mathrm{Cos}[c+d\,x]+$$
$$\mathrm{Sec}[c]\,\Big(\mathrm{Cos}[d\,x]\,\Big(8\,(i\,A+B)\,d\,x+(A-2\,i\,B)\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]+A\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\Big)+$$
$$\mathrm{Cos}[2\,c+d\,x]\,\Big(8\,(i\,A+B)\,d\,x+(A-2\,i\,B)\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]+A\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\Big)-$$
$$4\,B\,\mathrm{Sin}[d\,x]\Big)\Big)\,(\mathrm{Cos}[2\,d\,x]+i\,\mathrm{Sin}[2\,d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])$$

Problem 13: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 79 leaves, 5 steps):

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

Result (type 3, 202 leaves):

$$\frac{1}{4\,d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}$$
$$a^2\,(B+A\,\mathrm{Cot}[c+d\,x])\,(\mathrm{Cos}[2\,d\,x]+i\,\mathrm{Sin}[2\,d\,x])$$
$$\Big(\mathrm{Csc}[c]\,\Big(\mathrm{Cos}[2\,c+d\,x]\,\Big(8\,(A-i\,B)\,d\,x-B\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]+(-2\,i\,A-B)\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\Big)+$$
$$\mathrm{Cos}[d\,x]\,\Big(-8\,(A-i\,B)\,d\,x+B\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]+(2\,i\,A+B)\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\Big)+$$
$$4\,A\,\mathrm{Sin}[d\,x]\Big)+8\,(A-i\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[3\,c+d\,x]]\,\mathrm{Sin}[c+d\,x]\Big)$$

Problem 14: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 94 leaves, 4 steps):

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

Result (type 3, 302 leaves):

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

Problem 15: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 117 leaves, 5 steps):

$$2\,a^2\,\left(A-\text{i}\,B\right)\,x+\frac{2\,a^2\,\left(A-\text{i}\,B\right)\,\text{Cot}[c+d\,x]}{d}-\frac{a^2\,\left(4\,\text{i}\,A+3\,B\right)\,\text{Cot}[c+d\,x]^2}{6\,d}-\frac{2\,a^2\,\left(\text{i}\,A+B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}-\frac{A\,\text{Cot}[c+d\,x]^3\,\left(a^2+\text{i}\,a^2\,\text{Tan}[c+d\,x]\right)}{3\,d}$$

Result (type 3, 435 leaves):

$$\frac{1}{24\,d\,\left(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x]\right)^2}\,a^2\,\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\,\left(\text{Cos}[2\,d\,x]+\text{i}\,\text{Sin}[2\,d\,x]\right)\,\left(12\,\text{i}\,A\,\text{Cos}[2\,c+d\,x]+6\,B\,\text{Cos}[2\,c+d\,x]-36\,A\,d\,x\,\text{Cos}[2\,c+d\,x]+36\,\text{i}\,B\,d\,x\,\text{Cos}[2\,c+d\,x]-12\,A\,d\,x\,\text{Cos}[2\,c+3\,d\,x]+12\,\text{i}\,B\,d\,x\,\text{Cos}[2\,c+3\,d\,x]+12\,A\,d\,x\,\text{Cos}[4\,c+3\,d\,x]-12\,\text{i}\,B\,d\,x\,\text{Cos}[4\,c+3\,d\,x]+9\,\text{i}\,A\,\text{Cos}[2\,c+d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]+9\,B\,\text{Cos}[2\,c+d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]+3\,\text{i}\,A\,\text{Cos}[2\,c+3\,d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]+3\,B\,\text{Cos}[2\,c+3\,d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]-3\,\text{i}\,A\,\text{Cos}[4\,c+3\,d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]-3\,B\,\text{Cos}[4\,c+3\,d\,x]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]+3\,\text{Cos}[d\,x]\,\left(2\,B\,\left(-1-6\,\text{i}\,d\,x\right)+4\,A\,\left(-\text{i}+3\,d\,x\right)+\left(-3\,\text{i}\,A-3\,B\right)\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]\right)-24\,A\,\text{Sin}[d\,x]+24\,\text{i}\,B\,\text{Sin}[d\,x]-48\,\left(A-\text{i}\,B\right)\,\text{ArcTan}[\text{Tan}[3\,c+d\,x]]\,\text{Sin}[c]\,\text{Sin}[c+d\,x]^3-18\,A\,\text{Sin}[2\,c+d\,x]+12\,\text{i}\,B\,\text{Sin}[2\,c+d\,x]+14\,A\,\text{Sin}[2\,c+3\,d\,x]-12\,\text{i}\,B\,\text{Sin}[2\,c+3\,d\,x]\right)$$

Problem 16: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 139 leaves, 6 steps):

$$2\,a^2\,\left(\text{i}\,A+B\right)\,x+\frac{2\,a^2\,\left(\text{i}\,A+B\right)\,\text{Cot}[c+d\,x]}{d}+\frac{a^2\,\left(A-\text{i}\,B\right)\,\text{Cot}[c+d\,x]^2}{d}-\frac{a^2\,\left(5\,\text{i}\,A+4\,B\right)\,\text{Cot}[c+d\,x]^3}{12\,d}+\frac{2\,a^2\,\left(A-\text{i}\,B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}-\frac{A\,\text{Cot}[c+d\,x]^4\,\left(a^2+\text{i}\,a^2\,\text{Tan}[c+d\,x]\right)}{4\,d}$$

Result (type 3, 902 leaves):

$$a^2 \left(\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \mathrm{Csc}[c+d x] \left(-\frac{1}{4} A\,\mathrm{Cos}[2 c]+\frac{1}{4} \mathrm{i} A\,\mathrm{Sin}[2 c]\right)\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \mathrm{Csc}[c] \left(\frac{1}{3} \mathrm{Cos}[2 c]-\frac{1}{3} \mathrm{i}\,\mathrm{Sin}[2 c]\right) \left(2 \mathrm{i} A\,\mathrm{Sin}[d x]+B\,\mathrm{Sin}[d x]\right)\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \mathrm{Csc}[c] \left(-4 \mathrm{i} A\,\mathrm{Cos}[c]-2 B\,\mathrm{Cos}[c]+9 A\,\mathrm{Sin}[c]-6 \mathrm{i} B\,\mathrm{Sin}[c]\right) \left(\frac{1}{6} \mathrm{Cos}[2 c]-\frac{1}{6} \mathrm{i}\,\mathrm{Sin}[2 c]\right) \mathrm{Sin}[c+d x]\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \mathrm{Csc}[c] \left(\frac{1}{3} \mathrm{Cos}[2 c]-\frac{1}{3} \mathrm{i}\,\mathrm{Sin}[2 c]\right) \left(-8 \mathrm{i} A\,\mathrm{Sin}[d x]-7 B\,\mathrm{Sin}[d x]\right) \mathrm{Sin}[c+d x]^2\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \left(A\,\mathrm{Cos}[c]-\mathrm{i} B\,\mathrm{Cos}[c]-\mathrm{i} A\,\mathrm{Sin}[c]-B\,\mathrm{Sin}[c]\right) \left(-2 \mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[3 c+d x]]\,\mathrm{Cos}[c]-2\,\mathrm{ArcTan}[\mathrm{Tan}[3 c+d x]]\,\mathrm{Sin}[c]\right) \mathrm{Sin}[c+d x]^3\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \left(A\,\mathrm{Cos}[c]-\mathrm{i} B\,\mathrm{Cos}[c]-\mathrm{i} A\,\mathrm{Sin}[c]-B\,\mathrm{Sin}[c]\right) \left(\mathrm{Cos}[c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right]-\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right] \mathrm{Sin}[c]\right) \mathrm{Sin}[c+d x]^3\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(x \left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \left(6 \mathrm{i} A\,\mathrm{Cos}[c]^2+6 B\,\mathrm{Cos}[c]^2-2 A\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]+2 \mathrm{i} B\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]+6 A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-6 \mathrm{i} B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-2 \mathrm{i} A\,\mathrm{Sin}[c]^2-2 B\,\mathrm{Sin}[c]^2+\left(A-\mathrm{i} B\right) \mathrm{Cot}[c] \left(2\,\mathrm{Cos}[2 c]-2 \mathrm{i}\,\mathrm{Sin}[2 c]\right)\right) \mathrm{Sin}[c+d x]^3\right) \Big/ \left(\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i} A+B\right) \left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^2 \left(B+A\,\mathrm{Cot}[c+d x]\right) \left(2 d x\,\mathrm{Cos}[2 c]-2 \mathrm{i} d x\,\mathrm{Sin}[2 c]\right) \mathrm{Sin}[c+d x]^3\right) \Big/ \left(d \left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^2 \left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)\right)$$

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

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

Optimal (type 3, 182 leaves, 6 steps):

$$-4 a^3 \left(A-\mathrm{i} B\right) x+\frac{4 a^3 \left(\mathrm{i} A+B\right) \mathrm{Log}[\mathrm{Cos}[c+d x]]}{d}+\frac{4 a^3 \left(A-\mathrm{i} B\right) \mathrm{Tan}[c+d x]}{d}+\frac{2 a^3 \left(\mathrm{i} A+B\right) \mathrm{Tan}[c+d x]^2}{d}-\frac{a^3 \left(45 A-47 \mathrm{i} B\right) \mathrm{Tan}[c+d x]^3}{60 d}+\frac{\mathrm{i} a B\,\mathrm{Tan}[c+d x]^3 \left(a+\mathrm{i} a\,\mathrm{Tan}[c+d x]\right)^2}{5 d}-\frac{\left(5 A-7 \mathrm{i} B\right) \mathrm{Tan}[c+d x]^3 \left(a^3+\mathrm{i} a^3\,\mathrm{Tan}[c+d x]\right)}{20 d}$$

Result (type 3, 847 leaves):

$$\left(\text{Cos}[c+d x]^4\left(i A \text{Cos}\left[\frac{3 c}{2}\right]+B \text{Cos}\left[\frac{3 c}{2}\right]+A \text{Sin}\left[\frac{3 c}{2}\right]-i B \text{Sin}\left[\frac{3 c}{2}\right]\right)\left(2 \text{Cos}\left[\frac{3 c}{2}\right] \text{Log}\left[\text{Cos}[c+d x]^2\right]-2 i \text{Log}\left[\text{Cos}[c+d x]^2\right] \text{Sin}\left[\frac{3 c}{2}\right]\right)(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right) \Big/ \left(d (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$

$$\frac{1}{d (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])} \text{Sec}[c] \text{Sec}[c+d x]\left(\frac{1}{240} \text{Cos}[3 c]-\frac{1}{240} i \text{Sin}[3 c]\right)$$
$$(195 i A \text{Cos}[d x]+225 B \text{Cos}[d x]-300 A d x \text{Cos}[d x]+300 i B d x \text{Cos}[d x]+195 i A \text{Cos}[2 c+d x]+225 B \text{Cos}[2 c+d x]-300 A d x \text{Cos}[2 c+d x]+300 i B d x \text{Cos}[2 c+d x]+75 i A \text{Cos}[2 c+3 d x]+105 B \text{Cos}[2 c+3 d x]-150 A d x \text{Cos}[2 c+3 d x]+150 i B d x \text{Cos}[2 c+3 d x]+75 i A \text{Cos}[4 c+3 d x]+105 B \text{Cos}[4 c+3 d x]-150 A d x \text{Cos}[4 c+3 d x]+150 i B d x \text{Cos}[4 c+3 d x]-30 A d x \text{Cos}[4 c+5 d x]+30 i B d x \text{Cos}[4 c+5 d x]-30 A d x \text{Cos}[6 c+5 d x]+30 i B d x \text{Cos}[6 c+5 d x]+420 A \text{Sin}[d x]-470 i B \text{Sin}[d x]-330 A \text{Sin}[2 c+d x]+360 i B \text{Sin}[2 c+d x]+270 A \text{Sin}[2 c+3 d x]-280 i B \text{Sin}[2 c+3 d x]-105 A \text{Sin}[4 c+3 d x]+135 i B \text{Sin}[4 c+3 d x]+75 A \text{Sin}[4 c+5 d x]-83 i B \text{Sin}[4 c+5 d x])(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])+$$

$$\frac{1}{(\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])} x \text{Cos}[c+d x]^4 \left(2 A \text{Cos}[c]-2 i B \text{Cos}[c]-2 A \text{Cos}[c]^3+2 i B \text{Cos}[c]^3-4 i A \text{Sin}[c]-4 B \text{Sin}[c]+8 i A \text{Cos}[c]^2 \text{Sin}[c]+8 B \text{Cos}[c]^2 \text{Sin}[c]+12 A \text{Cos}[c] \text{Sin}[c]^2-12 i B \text{Cos}[c] \text{Sin}[c]^2-8 i A \text{Sin}[c]^3-8 B \text{Sin}[c]^3-2 A \text{Sin}[c] \text{Tan}[c]+2 i B \text{Sin}[c] \text{Tan}[c]-2 A \text{Sin}[c]^3 \text{Tan}[c]+2 i B \text{Sin}[c]^3 \text{Tan}[c]-i (A-i B)(4 \text{Cos}[3 c]-4 i \text{Sin}[3 c]) \text{Tan}[c]\right)(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])$$

Problem 18: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 138 leaves, 5 steps):

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

Result (type 3, 980 leaves):

$$\left(\text{Cos}[c+d x]^4 \left(A \text{Cos}\left[\frac{3 c}{2}\right]-i B \text{Cos}\left[\frac{3 c}{2}\right]-i A \text{Sin}\left[\frac{3 c}{2}\right]-B \text{Sin}\left[\frac{3 c}{2}\right]\right)\right.$$
$$\left(-2 \text{Cos}\left[\frac{3 c}{2}\right] \text{Log}\left[\text{Cos}[c+d x]^2\right]+2 i \text{Log}\left[\text{Cos}[c+d x]^2\right] \text{Sin}\left[\frac{3 c}{2}\right]\right)$$
$$\left.(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right)\Big/$$
$$\left(d (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\text{Cos}[c+d x]^2 (-9 A \text{Cos}[c]+15 i B \text{Cos}[c]-2 i A \text{Sin}[c]-6 B \text{Sin}[c]) \left(\frac{1}{6} \text{Cos}[3 c]-\frac{1}{6} i \text{Sin}[3 c]\right)\right.$$
$$\left.(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right)\Big/\left(d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left.\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\left(-\frac{1}{4} i B \text{Cos}[3 c]-\frac{1}{4} B \text{Sin}[3 c]\right) (a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right)\Big/$$
$$\left(d (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left((A-i B) \text{Cos}[c+d x]^4 (-4 i d x \text{Cos}[3 c]-4 d x \text{Sin}[3 c]) (a+i a \text{Tan}[c+d x])^3\right.$$
$$\left.(A+B \text{Tan}[c+d x])\right)\Big/\left(d (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\text{Cos}[c+d x] \left(\frac{1}{3} \text{Cos}[3 c]-\frac{1}{3} i \text{Sin}[3 c]\right) (-i A \text{Sin}[d x]-3 B \text{Sin}[d x])\right.$$
$$\left.(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right)\Big/\left(d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left.\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\text{Cos}[c+d x]^3 \left(\frac{1}{3} \text{Cos}[3 c]-\frac{1}{3} i \text{Sin}[3 c]\right) (13 i A \text{Sin}[d x]+15 B \text{Sin}[d x])\right.$$
$$\left.(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right)\Big/\left(d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left.\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) (\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\frac{1}{(\text{Cos}[d x]+i \text{Sin}[d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])}$$
$$x \text{Cos}[c+d x]^4 \left(2 i A \text{Cos}[c]+2 B \text{Cos}[c]-2 i A \text{Cos}[c]^3-2 B \text{Cos}[c]^3+4 A \text{Sin}[c]-\right.$$
$$4 i B \text{Sin}[c]-8 A \text{Cos}[c]^2 \text{Sin}[c]+8 i B \text{Cos}[c]^2 \text{Sin}[c]+12 i A \text{Cos}[c] \text{Sin}[c]^2+$$
$$12 B \text{Cos}[c] \text{Sin}[c]^2+8 A \text{Sin}[c]^3-8 i B \text{Sin}[c]^3-2 i A \text{Sin}[c] \text{Tan}[c]-2 B \text{Sin}[c] \text{Tan}[c]-$$
$$\left.2 i A \text{Sin}[c]^3 \text{Tan}[c]-2 B \text{Sin}[c]^3 \text{Tan}[c]+(A-i B) (4 \text{Cos}[3 c]-4 i \text{Sin}[3 c]) \text{Tan}[c]\right)$$
$$(a+i a \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])$$

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

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

Optimal (type 3, 110 leaves, 4 steps):

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

Result (type 3, 883 leaves):

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

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

$$\left((A - i B) \operatorname{Cos}[c + d x]^4 (4 d x \operatorname{Cos}[3 c] - 4 i d x \operatorname{Sin}[3 c]) (a + i a \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])\right) -$$

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

$$\left(\operatorname{Cos}[c + d x]^3 \left(\frac{1}{3} \operatorname{Cos}[3 c] - \frac{1}{3} i \operatorname{Sin}[3 c]\right) (-9 A \operatorname{Sin}[d x] + 13 i B \operatorname{Sin}[d x]) (a + i a \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d \left(\operatorname{Cos}\left[\frac{c}{2}\right] - \operatorname{Sin}\left[\frac{c}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{c}{2}\right] + \operatorname{Sin}\left[\frac{c}{2}\right]\right) (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])\right) +$$

$$\frac{1}{(\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])} x \operatorname{Cos}[c + d x]^4 \left(-2 A \operatorname{Cos}[c] + 2 i B \operatorname{Cos}[c] + 2 A \operatorname{Cos}[c]^3 - 2 i B \operatorname{Cos}[c]^3 + 4 i A \operatorname{Sin}[c] + 4 B \operatorname{Sin}[c] - 8 i A \operatorname{Cos}[c]^2 \operatorname{Sin}[c] - 8 B \operatorname{Cos}[c]^2 \operatorname{Sin}[c] - 12 A \operatorname{Cos}[c] \operatorname{Sin}[c]^2 + 12 i B \operatorname{Cos}[c] \operatorname{Sin}[c]^2 + 8 i A \operatorname{Sin}[c]^3 + 8 B \operatorname{Sin}[c]^3 + 2 A \operatorname{Sin}[c] \operatorname{Tan}[c] - 2 i B \operatorname{Sin}[c] \operatorname{Tan}[c] + 2 A \operatorname{Sin}[c]^3 \operatorname{Tan}[c] - 2 i B \operatorname{Sin}[c]^3 \operatorname{Tan}[c] + i (A - i B) (4 \operatorname{Cos}[3 c] - 4 i \operatorname{Sin}[3 c]) \operatorname{Tan}[c]\right) (a + i a \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])$$

Problem 20: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 107 leaves, 6 steps):

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

Result (type 3, 931 leaves):

$$\left(A \text{Cos}[3 c] \text{Cos}[c + d x]^4 \text{Log}\left[\text{Sin}[c + d x]^2\right] (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(2 d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$
$$\left(\text{Cos}[c + d x]^4 \left(3 A \text{Cos}\left[\frac{3 c}{2}\right] - 4 i B \text{Cos}\left[\frac{3 c}{2}\right] - 3 i A \text{Sin}\left[\frac{3 c}{2}\right] - 4 B \text{Sin}\left[\frac{3 c}{2}\right]\right) \left(\frac{1}{2} \text{Cos}\left[\frac{3 c}{2}\right] \text{Log}\left[\text{Cos}[c + d x]^2\right] - \frac{1}{2} i \text{Log}\left[\text{Cos}[c + d x]^2\right] \text{Sin}\left[\frac{3 c}{2}\right]\right) (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) -$$
$$\left(i A \text{Cos}[c + d x]^4 \text{Log}\left[\text{Sin}[c + d x]^2\right] \text{Sin}[3 c] (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(2 d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$
$$\left(\text{Cos}[c + d x]^2 \left(-\frac{1}{2} i B \text{Cos}[3 c] - \frac{1}{2} B \text{Sin}[3 c]\right) (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$
$$\left((i A + B) \text{Cos}[c + d x]^4 (4 d x \text{Cos}[3 c] - 4 i d x \text{Sin}[3 c]) (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$
$$\left(\text{Cos}[c + d x]^3 (\text{Cos}[3 c] - i \text{Sin}[3 c]) (-i A \text{Sin}[d x] - 3 B \text{Sin}[d x]) (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])\right) \Big/ \left(d \left(\text{Cos}\left[\frac{c}{2}\right] - \text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}\right] + \text{Sin}\left[\frac{c}{2}\right]\right) (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$
$$\frac{1}{(\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} x \text{Cos}[c + d x]^4 \left(-\frac{1}{2} i A \text{Cos}[c] - 2 B \text{Cos}[c] + \frac{7}{2} i A \text{Cos}[c]^3 + 2 B \text{Cos}[c]^3 - \frac{1}{2} A \text{Cos}[c] \text{Cot}[c] - \frac{1}{2} A \text{Cos}[c]^3 \text{Cot}[c] - \frac{5}{2} A \text{Sin}[c] + 4 i B \text{Sin}[c] + 9 A \text{Cos}[c]^2 \text{Sin}[c] - 8 i B \text{Cos}[c]^2 \text{Sin}[c] - 11 i A \text{Cos}[c] \text{Sin}[c]^2 - 12 B \text{Cos}[c] \text{Sin}[c]^2 - \frac{13}{2} A \text{Sin}[c]^3 + 8 i B \text{Sin}[c]^3 + (-A + 2 i B + 2 A \text{Cos}[2 c] - 2 i B \text{Cos}[2 c]) \text{Csc}[c] \text{Sec}[c] (\text{Cos}[3 c] - i \text{Sin}[3 c]) + \frac{3}{2} i A \text{Sin}[c] \text{Tan}[c] + 2 B \text{Sin}[c] \text{Tan}[c] + \frac{3}{2} i A \text{Sin}[c]^3 \text{Tan}[c] + 2 B \text{Sin}[c]^3 \text{Tan}[c]\right) (a + i a \text{Tan}[c + d x])^3 (A + B \text{Tan}[c + d x])$$

Problem 21: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 116 leaves, 6 steps):

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

Result (type 3, 291 leaves):

$$\frac{1}{16 d} a^3 \text{Csc}[c] \text{Csc}[c+d x] \text{Sec}[c] \text{Sec}[c+d x] \Big(14 A d x \text{Cos}[4 c+2 d x]-10 i B d x \text{Cos}[4 c+2 d x]- i A \text{Cos}[4 c+2 d x] \text{Log}\left[\text{Cos}[c+d x]^2\right]-3 B \text{Cos}[4 c+2 d x] \text{Log}\left[\text{Cos}[c+d x]^2\right]- 3 i A \text{Cos}[4 c+2 d x] \text{Log}\left[\text{Sin}[c+d x]^2\right]-B \text{Cos}[4 c+2 d x] \text{Log}\left[\text{Sin}[c+d x]^2\right]+ \text{Cos}[2 d x] \left(2 (-7 A+5 i B) d x+(i A+3 B) \text{Log}\left[\text{Cos}[c+d x]^2\right]+(3 i A+B) \text{Log}\left[\text{Sin}[c+d x]^2\right]\right)- 4 A \text{Sin}[2 c]-4 i B \text{Sin}[2 c]+4 A \text{Sin}[2 d x]-4 i B \text{Sin}[2 d x]+4 A \text{Sin}[2 (c+d x)]+ 4 i B \text{Sin}[2 (c+d x)]+4 (3 A-i B) \text{ArcTan}[\text{Tan}[4 c+d x]] \text{Sin}[2 c] \text{Sin}[2 (c+d x)]\Big)$$

Problem 22: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 123 leaves, 6 steps):

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

Result (type 3, 1010 leaves):

$$
\begin{aligned}
& a^3 \Bigg(\Big((\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, \left(-\frac{1}{2} A\,\text{Cos}[3\,c] + \frac{1}{2}\,\mathrm{i}\,A\,\text{Sin}[3\,c]\right) \text{Sin}[c+d\,x]^2 \Big) \Big/ \\
& \quad \Big(d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \\
& \quad \Big((\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, \text{Csc}\left[\frac{c}{2}\right] \text{Sec}\left[\frac{c}{2}\right] \\
& \qquad \left(\frac{1}{2}\,\text{Cos}[3\,c] - \frac{1}{2}\,\mathrm{i}\,\text{Sin}[3\,c]\right) (3\,\mathrm{i}\,A\,\text{Sin}[d\,x] + B\,\text{Sin}[d\,x])\, \text{Sin}[c+d\,x]^3 \Big) \Big/ \\
& \quad \Big(d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \\
& \quad \Big(\mathrm{i}\,B\,\text{Cos}[3\,c]\, (\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, \text{Log}\left[\text{Cos}[c+d\,x]^2\right] \text{Sin}[c+d\,x]^4 \Big) \Big/ \\
& \quad \Big(2\,d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \Big((\mathrm{i} + \text{Cot}[c+d\,x])^3 \\
& \qquad (B + A\,\text{Cot}[c+d\,x]) \left(4\,A\,\text{Cos}\left[\frac{3\,c}{2}\right] - 3\,\mathrm{i}\,B\,\text{Cos}\left[\frac{3\,c}{2}\right] - 4\,\mathrm{i}\,A\,\text{Sin}\left[\frac{3\,c}{2}\right] - 3\,B\,\text{Sin}\left[\frac{3\,c}{2}\right]\right) \\
& \qquad \left(\mathrm{i}\,\text{ArcTan}[\text{Tan}[4\,c+d\,x]]\,\text{Cos}\left[\frac{3\,c}{2}\right] + \text{ArcTan}[\text{Tan}[4\,c+d\,x]]\,\text{Sin}\left[\frac{3\,c}{2}\right]\right) \text{Sin}[c+d\,x]^4 \Big) \Big/ \\
& \quad \Big(d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \Big((\mathrm{i} + \text{Cot}[c+d\,x])^3 \\
& \qquad (B + A\,\text{Cot}[c+d\,x]) \left(4\,A\,\text{Cos}\left[\frac{3\,c}{2}\right] - 3\,\mathrm{i}\,B\,\text{Cos}\left[\frac{3\,c}{2}\right] - 4\,\mathrm{i}\,A\,\text{Sin}\left[\frac{3\,c}{2}\right] - 3\,B\,\text{Sin}\left[\frac{3\,c}{2}\right]\right) \\
& \qquad \left(-\frac{1}{2}\,\text{Cos}\left[\frac{3\,c}{2}\right] \text{Log}\left[\text{Sin}[c+d\,x]^2\right] + \frac{1}{2}\,\mathrm{i}\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right] \text{Sin}\left[\frac{3\,c}{2}\right]\right) \text{Sin}[c+d\,x]^4 \Big) \Big/ \\
& \quad \Big(d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \\
& \quad \Big(B\, (\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, \text{Log}\left[\text{Cos}[c+d\,x]^2\right] \text{Sin}[3\,c]\, \text{Sin}[c+d\,x]^4 \Big) \Big/ \\
& \quad \Big(2\,d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \\
& \quad \Big((A - \mathrm{i}\,B)\, (\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, (-4\,\mathrm{i}\,d\,x\,\text{Cos}[3\,c] - 4\,d\,x\,\text{Sin}[3\,c]) \\
& \qquad \text{Sin}[c+d\,x]^4 \Big) \Big/ \Big(d\, (\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x]) \Big) + \\
& \quad \frac{1}{(\text{Cos}[d\,x] + \mathrm{i}\,\text{Sin}[d\,x])^3\, (A\,\text{Cos}[c+d\,x] + B\,\text{Sin}[c+d\,x])} \\
& \quad x\, (\mathrm{i} + \text{Cot}[c+d\,x])^3\, (B + A\,\text{Cot}[c+d\,x])\, \text{Sin}[c+d\,x]^4 \\
& \quad \Big(\frac{1}{2}\,B\,\text{Cos}[c] - 16\,\mathrm{i}\,A\,\text{Cos}[c]^3 - \frac{25}{2}\,B\,\text{Cos}[c]^3 + 4\,A\,\text{Cos}[c]^3\,\text{Cot}[c] - 3\,\mathrm{i}\,B\,\text{Cos}[c]^3\,\text{Cot}[c] - \\
& \qquad \mathrm{i}\,B\,\text{Sin}[c] - 24\,A\,\text{Cos}[c]^2\,\text{Sin}[c] + 20\,\mathrm{i}\,B\,\text{Cos}[c]^2\,\text{Sin}[c] + 16\,\mathrm{i}\,A\,\text{Cos}[c]\,\text{Sin}[c]^2 + \\
& \qquad 15\,B\,\text{Cos}[c]\,\text{Sin}[c]^2 + 4\,A\,\text{Sin}[c]^3 - 5\,\mathrm{i}\,B\,\text{Sin}[c]^3 + (2\,A - \mathrm{i}\,B + 2\,A\,\text{Cos}[2\,c] - 2\,\mathrm{i}\,B\,\text{Cos}[2\,c]) \\
& \qquad \text{Csc}[c]\,\text{Sec}[c]\, (-\text{Cos}[3\,c] + \mathrm{i}\,\text{Sin}[3\,c]) - \frac{1}{2}\,B\,\text{Sin}[c]\,\text{Tan}[c] - \frac{1}{2}\,B\,\text{Sin}[c]^3\,\text{Tan}[c]\Big)\Bigg)
\end{aligned}
$$

Problem 23: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 134 leaves, 5 steps):

$$4 a^3 (A - i B) x + \frac{a^3 (17 A - 15 i B) \text{Cot}[c + d x]}{6 d} - \frac{4 a^3 (i A + B) \text{Log}[\text{Sin}[c + d x]]}{d} - \frac{a A \text{Cot}[c + d x]^3 (a + i a \text{Tan}[c + d x])^2}{3 d} - \frac{(5 i A + 3 B) \text{Cot}[c + d x]^2 (a^3 + i a^3 \text{Tan}[c + d x])}{6 d}$$

Result (type 3, 911 leaves):

$$a^3 \Bigg(\Big(A (i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \text{Csc}\left[\frac{c}{2}\right] \text{Sec}\left[\frac{c}{2}\right] \left(\frac{1}{6} \text{Cos}[3 c] - \frac{1}{6} i \text{Sin}[3 c]\right) \text{Sin}[d x] \text{Sin}[c + d x]\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) +$$
$$\Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \text{Csc}\left[\frac{c}{2}\right] \text{Sec}\left[\frac{c}{2}\right] (-2 A \text{Cos}[c] - 9 i A \text{Sin}[c] - 3 B \text{Sin}[c]) \left(\frac{1}{12} \text{Cos}[3 c] - \frac{1}{12} i \text{Sin}[3 c]\right) \text{Sin}[c + d x]^2\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) +$$
$$\Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \text{Csc}\left[\frac{c}{2}\right] \text{Sec}\left[\frac{c}{2}\right] \left(\frac{1}{6} \text{Cos}[3 c] - \frac{1}{6} i \text{Sin}[3 c]\right) (-13 A \text{Sin}[d x] + 9 i B \text{Sin}[d x]) \text{Sin}[c + d x]^3\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) +$$
$$\Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \left(A \text{Cos}\left[\frac{3 c}{2}\right] - i B \text{Cos}\left[\frac{3 c}{2}\right] - i A \text{Sin}\left[\frac{3 c}{2}\right] - B \text{Sin}\left[\frac{3 c}{2}\right]\right) \left(-4 \text{ArcTan}[\text{Tan}[4 c + d x]] \text{Cos}\left[\frac{3 c}{2}\right] + 4 i \text{ArcTan}[\text{Tan}[4 c + d x]] \text{Sin}\left[\frac{3 c}{2}\right]\right) \text{Sin}[c + d x]^4\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) +$$
$$\Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \left(A \text{Cos}\left[\frac{3 c}{2}\right] - i B \text{Cos}\left[\frac{3 c}{2}\right] - i A \text{Sin}\left[\frac{3 c}{2}\right] - B \text{Sin}\left[\frac{3 c}{2}\right]\right) \left(-2 i \text{Cos}\left[\frac{3 c}{2}\right] \text{Log}\left[\text{Sin}[c + d x]^2\right] - 2 \text{Log}\left[\text{Sin}[c + d x]^2\right] \text{Sin}\left[\frac{3 c}{2}\right]\right) \text{Sin}[c + d x]^4\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) +$$
$$\frac{1}{(\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} x (i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \big(16 A \text{Cos}[c]^3 - 16 i B \text{Cos}[c]^3 + 4 i A \text{Cos}[c]^3 \text{Cot}[c] + 4 B \text{Cos}[c]^3 \text{Cot}[c] - 24 i A \text{Cos}[c]^2 \text{Sin}[c] - 24 B \text{Cos}[c]^2 \text{Sin}[c] - 16 A \text{Cos}[c] \text{Sin}[c]^2 + 16 i B \text{Cos}[c] \text{Sin}[c]^2 + 4 i A \text{Sin}[c]^3 + 4 B \text{Sin}[c]^3 - i (A - i B) \text{Cot}[c] (4 \text{Cos}[3 c] - 4 i \text{Sin}[3 c])\big) \text{Sin}[c + d x]^4 +$$
$$\Big((A - i B) (i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) (4 d x \text{Cos}[3 c] - 4 i d x \text{Sin}[3 c]) \text{Sin}[c + d x]^4\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big)\Bigg)$$

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

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

Optimal (type 3, 157 leaves):

$$4 a^3 (i A + B) x + \frac{4 a^3 (i A + B) \text{Cot}[c + d x]}{d} + \frac{a^3 (15 A - 14 i B) \text{Cot}[c + d x]^2}{12 d} + \frac{4 a^3 (A - i B) \text{Log}[\text{Sin}[c + d x]]}{d} - \frac{a A \text{Cot}[c + d x]^4 (a + i a \text{Tan}[c + d x])^2}{4 d} - \frac{(3 i A + 2 B) \text{Cot}[c + d x]^3 (a^3 + i a^3 \text{Tan}[c + d x])}{6 d}$$

Result (type 3, 1007 leaves) :

$$a^3\Bigg(\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\left(-\frac{1}{4}A\,\text{Cos}[3c]+\frac{1}{4}i\,A\,\text{Sin}[3c]\right)\Big)\Big/$$
$$\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]$$
$$\left(\frac{1}{6}\text{Cos}[3c]-\frac{1}{6}i\,\text{Sin}[3c]\right)\big(3\,i\,A\,\text{Sin}[d x]+B\,\text{Sin}[d x]\big)\,\text{Sin}[c+d x]\Big)\Big/$$
$$\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]$$
$$\big(-6\,i\,A\,\text{Cos}[c]-2\,B\,\text{Cos}[c]+15\,A\,\text{Sin}[c]-9\,i\,B\,\text{Sin}[c]\big)\left(\frac{1}{12}\text{Cos}[3c]-\frac{1}{12}i\,\text{Sin}[3c]\right)$$
$$\text{Sin}[c+d x]^2\Big)\Big/\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\left(\frac{1}{6}\text{Cos}[3c]-\frac{1}{6}i\,\text{Sin}[3c]\right)$$
$$\big(-15\,i\,A\,\text{Sin}[d x]-13\,B\,\text{Sin}[d x]\big)\,\text{Sin}[c+d x]^3\Big)\Big/$$
$$\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\left(A\,\text{Cos}\left[\frac{3c}{2}\right]-i\,B\,\text{Cos}\left[\frac{3c}{2}\right]-i\,A\,\text{Sin}\left[\frac{3c}{2}\right]-B\,\text{Sin}\left[\frac{3c}{2}\right]\right)$$
$$\left(-4\,i\,\text{ArcTan}[\text{Tan}[4c+d x]]\,\text{Cos}\left[\frac{3c}{2}\right]-4\,\text{ArcTan}[\text{Tan}[4c+d x]]\,\text{Sin}\left[\frac{3c}{2}\right]\right)\text{Sin}[c+d x]^4\Big)\Big/$$
$$\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\Big(\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\left(A\,\text{Cos}\left[\frac{3c}{2}\right]-i\,B\,\text{Cos}\left[\frac{3c}{2}\right]-i\,A\,\text{Sin}\left[\frac{3c}{2}\right]-B\,\text{Sin}\left[\frac{3c}{2}\right]\right)$$
$$\left(2\,\text{Cos}\left[\frac{3c}{2}\right]\text{Log}\big[\text{Sin}[c+d x]^2\big]-2\,i\,\text{Log}\big[\text{Sin}[c+d x]^2\big]\,\text{Sin}\left[\frac{3c}{2}\right]\right)\text{Sin}[c+d x]^4\Big)\Big/$$
$$\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)+$$
$$\frac{1}{\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)}\,x\,\big(i+\text{Cot}[c+d x]\big)^3$$
$$\big(B+A\,\text{Cot}[c+d x]\big)\big(16\,i\,A\,\text{Cos}[c]^3+16\,B\,\text{Cos}[c]^3-4\,A\,\text{Cos}[c]^3\,\text{Cot}[c]+4\,i\,B\,\text{Cos}[c]^3\,\text{Cot}[c]+$$
$$24\,A\,\text{Cos}[c]^2\,\text{Sin}[c]-24\,i\,B\,\text{Cos}[c]^2\,\text{Sin}[c]-16\,i\,A\,\text{Cos}[c]\,\text{Sin}[c]^2-16\,B\,\text{Cos}[c]\,\text{Sin}[c]^2-$$
$$4\,A\,\text{Sin}[c]^3+4\,i\,B\,\text{Sin}[c]^3+(A-i\,B)\,\text{Cot}[c]\,\big(4\,\text{Cos}[3c]-4\,i\,\text{Sin}[3c]\big)\big)\,\text{Sin}[c+d x]^4+$$
$$\Big((i\,A+B)\big(i+\text{Cot}[c+d x]\big)^3\big(B+A\,\text{Cot}[c+d x]\big)\big(4\,d\,x\,\text{Cos}[3c]-4\,i\,d\,x\,\text{Sin}[3c]\big)$$
$$\text{Sin}[c+d x]^4\Big)\Big/\Big(d\big(\text{Cos}[d x]+i\,\text{Sin}[d x]\big)^3\big(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\big)\Big)\Bigg)$$

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

$$\int \text{Cot}[c+d x]^6\,\big(a+i\,a\,\text{Tan}[c+d x]\big)^3\,\big(A+B\,\text{Tan}[c+d x]\big)\,dx$$

Optimal (type 3, 180 leaves, 7 steps):

$$-4 a^3 (A - i B) x - \frac{4 a^3 (A - i B) \text{Cot}[c + d x]}{d} + \frac{2 a^3 (i A + B) \text{Cot}[c + d x]^2}{d} + \frac{a^3 (47 A - 45 i B) \text{Cot}[c + d x]^3}{60 d} + \frac{4 a^3 (i A + B) \text{Log}[\text{Sin}[c + d x]]}{d} - \frac{a A \text{Cot}[c + d x]^5 (a + i a \text{Tan}[c + d x])^2}{5 d} - \frac{(7 i A + 5 B) \text{Cot}[c + d x]^4 (a^3 + i a^3 \text{Tan}[c + d x])}{20 d}$$

Result (type 3, 943 leaves) :

$$a^3 \Bigg(\Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \left(i A \text{Cos}\left[\frac{3 c}{2}\right] + B \text{Cos}\left[\frac{3 c}{2}\right] + A \text{Sin}\left[\frac{3 c}{2}\right] - i B \text{Sin}\left[\frac{3 c}{2}\right]\right) \left(-4 i \text{ArcTan}[\text{Tan}[4 c + d x]] \text{Cos}\left[\frac{3 c}{2}\right] - 4 \text{ArcTan}[\text{Tan}[4 c + d x]] \text{Sin}\left[\frac{3 c}{2}\right]\right) \text{Sin}[c + d x]^4 \Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x]) \Big) + \Big((i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \left(i A \text{Cos}\left[\frac{3 c}{2}\right] + B \text{Cos}\left[\frac{3 c}{2}\right] + A \text{Sin}\left[\frac{3 c}{2}\right] - i B \text{Sin}\left[\frac{3 c}{2}\right]\right) \left(2 \text{Cos}\left[\frac{3 c}{2}\right] \text{Log}\left[\text{Sin}[c + d x]^2\right] - 2 i \text{Log}\left[\text{Sin}[c + d x]^2\right] \text{Sin}\left[\frac{3 c}{2}\right]\right) \text{Sin}[c + d x]^4 \Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x]) \Big) + \frac{1}{(\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} x (i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \Big(-16 A \text{Cos}[c]^3 + 16 i B \text{Cos}[c]^3 - 4 i A \text{Cos}[c]^3 \text{Cot}[c] - 4 B \text{Cos}[c]^3 \text{Cot}[c] + 24 i A \text{Cos}[c]^2 \text{Sin}[c] + 24 B \text{Cos}[c]^2 \text{Sin}[c] + 16 A \text{Cos}[c] \text{Sin}[c]^2 - 16 i B \text{Cos}[c] \text{Sin}[c]^2 - 4 i A \text{Sin}[c]^3 - 4 B \text{Sin}[c]^3 + (i A + B) \text{Cot}[c] (4 \text{Cos}[3 c] - 4 i \text{Sin}[3 c]) \Big) \text{Sin}[c + d x]^4 + \frac{1}{d (\text{Cos}[d x] + i \text{Sin}[d x])^3 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} (i + \text{Cot}[c + d x])^3 (B + A \text{Cot}[c + d x]) \text{Csc}[c] \text{Csc}[c + d x] \left(\frac{1}{240} \text{Cos}[3 c] - \frac{1}{240} i \text{Sin}[3 c]\right) \Big(225 i A \text{Cos}[d x] + 195 B \text{Cos}[d x] - 300 A d x \text{Cos}[d x] + 300 i B d x \text{Cos}[d x] - 225 i A \text{Cos}[2 c + d x] - 195 B \text{Cos}[2 c + d x] + 300 A d x \text{Cos}[2 c + d x] - 300 i B d x \text{Cos}[2 c + d x] - 105 i A \text{Cos}[2 c + 3 d x] - 75 B \text{Cos}[2 c + 3 d x] + 150 A d x \text{Cos}[2 c + 3 d x] - 150 i B d x \text{Cos}[2 c + 3 d x] + 105 i A \text{Cos}[4 c + 3 d x] + 75 B \text{Cos}[4 c + 3 d x] - 150 A d x \text{Cos}[4 c + 3 d x] + 150 i B d x \text{Cos}[4 c + 3 d x] - 30 A d x \text{Cos}[4 c + 5 d x] + 30 i B d x \text{Cos}[4 c + 5 d x] + 30 A d x \text{Cos}[6 c + 5 d x] - 30 i B d x \text{Cos}[6 c + 5 d x] + 470 A \text{Sin}[d x] - 420 i B \text{Sin}[d x] + 360 A \text{Sin}[2 c + d x] - 330 i B \text{Sin}[2 c + d x] - 280 A \text{Sin}[2 c + 3 d x] + 270 i B \text{Sin}[2 c + 3 d x] - 135 A \text{Sin}[4 c + 3 d x] + 105 i B \text{Sin}[4 c + 3 d x] + 83 A \text{Sin}[4 c + 5 d x] - 75 i B \text{Sin}[4 c + 5 d x] \Big) \Bigg)$$

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

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

Optimal (type 3, 225 leaves, 7 steps) :

$$-8 a^4 (A - i B) x + \frac{8 a^4 (i A + B) \text{Log}[\text{Cos}[c + d x]]}{d} + \frac{8 a^4 (A - i B) \text{Tan}[c + d x]}{d} + \frac{4 a^4 (i A + B) \text{Tan}[c + d x]^2}{d} - \frac{a^4 (92 A - 93 i B) \text{Tan}[c + d x]^3}{60 d} + \frac{i a B \text{Tan}[c + d x]^3 (a + i a \text{Tan}[c + d x])^3}{6 d} - \frac{(2 A - 3 i B) \text{Tan}[c + d x]^3 (a^2 + i a^2 \text{Tan}[c + d x])^2}{10 d} - \frac{(12 A - 13 i B) \text{Tan}[c + d x]^3 (a^4 + i a^4 \text{Tan}[c + d x])}{20 d}$$

Result (type 3, 951 leaves):

$$\Big(\text{Cos}[c + d x]^5 (i A \text{Cos}[2 c] + B \text{Cos}[2 c] + A \text{Sin}[2 c] - i B \text{Sin}[2 c]) (4 \text{Cos}[2 c] \text{Log}[\text{Cos}[c + d x]^2] - 4 i \text{Log}[\text{Cos}[c + d x]^2] \text{Sin}[2 c]) (a + i a \text{Tan}[c + d x])^4 (A + B \text{Tan}[c + d x])\Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\Big) + \frac{1}{d (\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} \text{Sec}[c] \text{Sec}[c + d x] \left(\frac{1}{240} \text{Cos}[4 c] - \frac{1}{240} i \text{Sin}[4 c]\right) (420 i A \text{Cos}[c] + 490 B \text{Cos}[c] - 600 A d x \text{Cos}[c] + 600 i B d x \text{Cos}[c] + 300 i A \text{Cos}[c + 2 d x] + 345 B \text{Cos}[c + 2 d x] - 450 A d x \text{Cos}[c + 2 d x] + 450 i B d x \text{Cos}[c + 2 d x] + 300 i A \text{Cos}[3 c + 2 d x] + 345 B \text{Cos}[3 c + 2 d x] - 450 A d x \text{Cos}[3 c + 2 d x] + 450 i B d x \text{Cos}[3 c + 2 d x] + 90 i A \text{Cos}[3 c + 4 d x] + 120 B \text{Cos}[3 c + 4 d x] - 180 A d x \text{Cos}[3 c + 4 d x] + 180 i B d x \text{Cos}[3 c + 4 d x] + 90 i A \text{Cos}[5 c + 4 d x] + 120 B \text{Cos}[5 c + 4 d x] - 180 A d x \text{Cos}[5 c + 4 d x] + 180 i B d x \text{Cos}[5 c + 4 d x] - 30 A d x \text{Cos}[5 c + 6 d x] + 30 i B d x \text{Cos}[5 c + 6 d x] - 30 A d x \text{Cos}[7 c + 6 d x] + 30 i B d x \text{Cos}[7 c + 6 d x] - 790 A \text{Sin}[c] + 860 i B \text{Sin}[c] + 720 A \text{Sin}[c + 2 d x] - 780 i B \text{Sin}[c + 2 d x] - 465 A \text{Sin}[3 c + 2 d x] + 510 i B \text{Sin}[3 c + 2 d x] + 354 A \text{Sin}[3 c + 4 d x] - 366 i B \text{Sin}[3 c + 4 d x] - 120 A \text{Sin}[5 c + 4 d x] + 150 i B \text{Sin}[5 c + 4 d x] + 79 A \text{Sin}[5 c + 6 d x] - 86 i B \text{Sin}[5 c + 6 d x]) (a + i a \text{Tan}[c + d x])^4 (A + B \text{Tan}[c + d x]) + \frac{1}{(\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} x \text{Cos}[c + d x]^5 (4 A \text{Cos}[c]^2 - 4 i B \text{Cos}[c]^2 - 4 A \text{Cos}[c]^4 + 4 i B \text{Cos}[c]^4 - 12 i A \text{Cos}[c] \text{Sin}[c] - 12 B \text{Cos}[c] \text{Sin}[c] + 20 i A \text{Cos}[c]^3 \text{Sin}[c] + 20 B \text{Cos}[c]^3 \text{Sin}[c] - 12 A \text{Sin}[c]^2 + 12 i B \text{Sin}[c]^2 + 40 A \text{Cos}[c]^2 \text{Sin}[c]^2 - 40 i B \text{Cos}[c]^2 \text{Sin}[c]^2 - 40 i A \text{Cos}[c] \text{Sin}[c]^3 - 40 B \text{Cos}[c] \text{Sin}[c]^3 - 20 A \text{Sin}[c]^4 + 20 i B \text{Sin}[c]^4 + 4 i A \text{Sin}[c]^2 \text{Tan}[c] + 4 B \text{Sin}[c]^2 \text{Tan}[c] + 4 i A \text{Sin}[c]^4 \text{Tan}[c] + 4 B \text{Sin}[c]^4 \text{Tan}[c] - i (A - i B) (8 \text{Cos}[4 c] - 8 i \text{Sin}[4 c]) \text{Tan}[c]) (a + i a \text{Tan}[c + d x])^4 (A + B \text{Tan}[c + d x])$$

Problem 27: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 168 leaves, 6 steps):

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

Result (type 3, 879 leaves):

$$\Big(\operatorname{Cos}[c+d x]^5 (A \operatorname{Cos}[2 c]-i B \operatorname{Cos}[2 c]-i A \operatorname{Sin}[2 c]-B \operatorname{Sin}[2 c]) \left(-4 \operatorname{Cos}[2 c] \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right]+4 i \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[2 c]\right) (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\Big) \Big/ \Big(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\Big)+\frac{1}{d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])} \operatorname{Sec}[c] \left(\frac{1}{120} \operatorname{Cos}[4 c]-\frac{1}{120} i \operatorname{Sin}[4 c]\right) (-165 A \operatorname{Cos}[d x]+210 i B \operatorname{Cos}[d x]-300 i A d x \operatorname{Cos}[d x]-300 B d x \operatorname{Cos}[d x]-165 A \operatorname{Cos}[2 c+d x]+210 i B \operatorname{Cos}[2 c+d x]-300 i A d x \operatorname{Cos}[2 c+d x]-300 B d x \operatorname{Cos}[2 c+d x]-60 A \operatorname{Cos}[2 c+3 d x]+90 i B \operatorname{Cos}[2 c+3 d x]-150 i A d x \operatorname{Cos}[2 c+3 d x]-150 B d x \operatorname{Cos}[2 c+3 d x]-60 A \operatorname{Cos}[4 c+3 d x]+90 i B \operatorname{Cos}[4 c+3 d x]-150 i A d x \operatorname{Cos}[4 c+3 d x]-150 B d x \operatorname{Cos}[4 c+3 d x]-30 i A d x \operatorname{Cos}[4 c+5 d x]-30 B d x \operatorname{Cos}[4 c+5 d x]-30 i A d x \operatorname{Cos}[6 c+5 d x]-30 B d x \operatorname{Cos}[6 c+5 d x]+400 i A \operatorname{Sin}[d x]+445 B \operatorname{Sin}[d x]-300 i A \operatorname{Sin}[2 c+d x]-345 B \operatorname{Sin}[2 c+d x]+260 i A \operatorname{Sin}[2 c+3 d x]+275 B \operatorname{Sin}[2 c+3 d x]-90 i A \operatorname{Sin}[4 c+3 d x]-120 B \operatorname{Sin}[4 c+3 d x]+70 i A \operatorname{Sin}[4 c+5 d x]+79 B \operatorname{Sin}[4 c+5 d x]) (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])+\frac{1}{(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])} x \operatorname{Cos}[c+d x]^5 \big(4 i A \operatorname{Cos}[c]^2+4 B \operatorname{Cos}[c]^2-4 i A \operatorname{Cos}[c]^4-4 B \operatorname{Cos}[c]^4+12 A \operatorname{Cos}[c] \operatorname{Sin}[c]-12 i B \operatorname{Cos}[c] \operatorname{Sin}[c]-20 A \operatorname{Cos}[c]^3 \operatorname{Sin}[c]+20 i B \operatorname{Cos}[c]^3 \operatorname{Sin}[c]-12 i A \operatorname{Sin}[c]^2-12 B \operatorname{Sin}[c]^2+40 i A \operatorname{Cos}[c]^2 \operatorname{Sin}[c]^2+40 B \operatorname{Cos}[c]^2 \operatorname{Sin}[c]^2+40 A \operatorname{Cos}[c] \operatorname{Sin}[c]^3-40 i B \operatorname{Cos}[c] \operatorname{Sin}[c]^3-20 i A \operatorname{Sin}[c]^4-20 B \operatorname{Sin}[c]^4-4 A \operatorname{Sin}[c]^2 \operatorname{Tan}[c]+4 i B \operatorname{Sin}[c]^2 \operatorname{Tan}[c]-4 A \operatorname{Sin}[c]^4 \operatorname{Tan}[c]+4 i B \operatorname{Sin}[c]^4 \operatorname{Tan}[c]+(A-i B) (8 \operatorname{Cos}[4 c]-8 i \operatorname{Sin}[4 c]) \operatorname{Tan}[c]\big) (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])$$

Problem 28: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 140 leaves, 5 steps):

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

Result (type 3, 937 leaves):

$$\Big(\mathrm{Cos}[c+d\,x]^5\,(A\,\mathrm{Cos}[2\,c]-i\,B\,\mathrm{Cos}[2\,c]-i\,A\,\mathrm{Sin}[2\,c]-B\,\mathrm{Sin}[2\,c])$$
$$\left(-4\,i\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-4\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\mathrm{Sin}[2\,c]\right)\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\Big(\mathrm{Cos}[c+d\,x]^3\,\mathrm{Sec}[c]\,(6\,A\,\mathrm{Cos}[c]-12\,i\,B\,\mathrm{Cos}[c]+i\,A\,\mathrm{Sin}[c]+4\,B\,\mathrm{Sin}[c])$$
$$\left(-\frac{1}{3}\,i\,\mathrm{Cos}[4\,c]-\frac{1}{3}\,\mathrm{Sin}[4\,c]\right)\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\left(\mathrm{Cos}[c+d\,x]\,\left(\frac{1}{4}\,B\,\mathrm{Cos}[4\,c]-\frac{1}{4}\,i\,B\,\mathrm{Sin}[4\,c]\right)\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\Big((A-i\,B)\,\mathrm{Cos}[c+d\,x]^5\,(8\,d\,x\,\mathrm{Cos}[4\,c]-8\,i\,d\,x\,\mathrm{Sin}[4\,c])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\Big(\mathrm{Cos}[c+d\,x]^2\,\mathrm{Sec}[c]\,\left(\frac{1}{3}\,\mathrm{Cos}[4\,c]-\frac{1}{3}\,i\,\mathrm{Sin}[4\,c]\right)\,(A\,\mathrm{Sin}[d\,x]-4\,i\,B\,\mathrm{Sin}[d\,x])$$
$$(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\Big(\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}[c]\,\left(-\frac{2}{3}\,\mathrm{Cos}[4\,c]+\frac{2}{3}\,i\,\mathrm{Sin}[4\,c]\right)$$
$$(11\,A\,\mathrm{Sin}[d\,x]-14\,i\,B\,\mathrm{Sin}[d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(d\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+$$
$$\frac{1}{(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}$$
$$x\,\mathrm{Cos}[c+d\,x]^5\,\Big(-4\,A\,\mathrm{Cos}[c]^2+4\,i\,B\,\mathrm{Cos}[c]^2+4\,A\,\mathrm{Cos}[c]^4-4\,i\,B\,\mathrm{Cos}[c]^4+12\,i\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+$$
$$12\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-20\,i\,A\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-20\,B\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]+12\,A\,\mathrm{Sin}[c]^2-$$
$$12\,i\,B\,\mathrm{Sin}[c]^2-40\,A\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2+40\,i\,B\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2+40\,i\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+$$
$$40\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+20\,A\,\mathrm{Sin}[c]^4-20\,i\,B\,\mathrm{Sin}[c]^4-4\,i\,A\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]-4\,B\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]-$$
$$4\,i\,A\,\mathrm{Sin}[c]^4\,\mathrm{Tan}[c]-4\,B\,\mathrm{Sin}[c]^4\,\mathrm{Tan}[c]+(i\,A+B)\,(8\,\mathrm{Cos}[4\,c]-8\,i\,\mathrm{Sin}[4\,c])\,\mathrm{Tan}[c]\Big)$$
$$(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])$$

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

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

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

$$8\,a^4\,(i\,A+B)\,x+\frac{a^4\,(7\,A-8\,i\,B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}+$$
$$\frac{a^4\,A\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}+\frac{i\,a\,B\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^3}{3\,d}-$$
$$\frac{(A-2\,i\,B)\,(a^2+i\,a^2\,\mathrm{Tan}[c+d\,x])^2}{2\,d}-\frac{(3\,A-4\,i\,B)\,(a^4+i\,a^4\,\mathrm{Tan}[c+d\,x])}{d}$$

Result (type 3, 1060 leaves) :

$$\left(A \operatorname{Cos}[4 c] \operatorname{Cos}[c+d x]^5 \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(2 d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(\operatorname{Cos}[c+d x]^5 (7 A \operatorname{Cos}[2 c]-8 i B \operatorname{Cos}[2 c]-7 i A \operatorname{Sin}[2 c]-8 B \operatorname{Sin}[2 c])\right.$$
$$\left(\frac{1}{2} \operatorname{Cos}[2 c] \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right]-\frac{1}{2} i \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[2 c]\right) (a+i a \operatorname{Tan}[c+d x])^4$$
$$\left.(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(\operatorname{Cos}[c+d x]^3 \operatorname{Sec}[c] (3 A \operatorname{Cos}[c]-12 i B \operatorname{Cos}[c]+2 B \operatorname{Sin}[c])\right.$$
$$\left.\left(\frac{1}{6} \operatorname{Cos}[4 c]-\frac{1}{6} i \operatorname{Sin}[4 c]\right) (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/$$
$$\left(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)-$$
$$\left(i A \operatorname{Cos}[c+d x]^5 \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right] \operatorname{Sin}[4 c] (a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/$$
$$\left(2 d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left((i A+B) \operatorname{Cos}[c+d x]^5 (8 d x \operatorname{Cos}[4 c]-8 i d x \operatorname{Sin}[4 c]) (a+i a \operatorname{Tan}[c+d x])^4\right.$$
$$\left.(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(B \operatorname{Cos}[c+d x]^2 \operatorname{Sec}[c] \left(\frac{1}{3} \operatorname{Cos}[4 c]-\frac{1}{3} i \operatorname{Sin}[4 c]\right) \operatorname{Sin}[d x] (a+i a \operatorname{Tan}[c+d x])^4\right.$$
$$\left.(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(\operatorname{Cos}[c+d x]^4 \operatorname{Sec}[c] \left(\frac{2}{3} \operatorname{Cos}[4 c]-\frac{2}{3} i \operatorname{Sin}[4 c]\right) (-6 i A \operatorname{Sin}[d x]-11 B \operatorname{Sin}[d x])\right.$$
$$\left.(a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/$$
$$\left(d (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\frac{1}{(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])}$$
$$x \operatorname{Cos}[c+d x]^5 \left(-2 i A \operatorname{Cos}[c]^2-4 B \operatorname{Cos}[c]^2+6 i A \operatorname{Cos}[c]^4+4 B \operatorname{Cos}[c]^4-\frac{1}{2} A \operatorname{Cos}[c]^2 \operatorname{Cot}[c]-\right.$$
$$\frac{1}{2} A \operatorname{Cos}[c]^4 \operatorname{Cot}[c]-9 A \operatorname{Cos}[c] \operatorname{Sin}[c]+12 i B \operatorname{Cos}[c] \operatorname{Sin}[c]+\frac{45}{2} A \operatorname{Cos}[c]^3 \operatorname{Sin}[c]-$$
$$20 i B \operatorname{Cos}[c]^3 \operatorname{Sin}[c]+10 i A \operatorname{Sin}[c]^2+12 B \operatorname{Sin}[c]^2-40 i A \operatorname{Cos}[c]^2 \operatorname{Sin}[c]^2-40 B \operatorname{Cos}[c]^2$$
$$\operatorname{Sin}[c]^2-\frac{75}{2} A \operatorname{Cos}[c] \operatorname{Sin}[c]^3+40 i B \operatorname{Cos}[c] \operatorname{Sin}[c]^3+18 i A \operatorname{Sin}[c]^4+20 B \operatorname{Sin}[c]^4+$$
$$(-3 A+4 i B+4 A \operatorname{Cos}[2 c]-4 i B \operatorname{Cos}[2 c]) \operatorname{Csc}[c] \operatorname{Sec}[c] (\operatorname{Cos}[4 c]-i \operatorname{Sin}[4 c])+$$
$$\left.\frac{7}{2} A \operatorname{Sin}[c]^2 \operatorname{Tan}[c]-4 i B \operatorname{Sin}[c]^2 \operatorname{Tan}[c]+\frac{7}{2} A \operatorname{Sin}[c]^4 \operatorname{Tan}[c]-4 i B \operatorname{Sin}[c]^4 \operatorname{Tan}[c]\right)$$
$$(a+i a \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])$$

Problem 30: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 144 leaves, 7 steps):

$$-8 a^4 (A-i B) x+\frac{a^4 (4 i A+7 B) \text{Log}[\text{Cos}[c+d x]]}{d}+\frac{a^4 (4 i A+B) \text{Log}[\text{Sin}[c+d x]]}{d}-\frac{a A \text{Cot}[c+d x] \left(a+i a \text{Tan}[c+d x]\right)^3}{d}+\frac{(2 i A-B) \left(a^2+i a^2 \text{Tan}[c+d x]\right)^2}{2 d}-\frac{3 B \left(a^4+i a^4 \text{Tan}[c+d x]\right)}{d}$$

Result (type 3, 1122 leaves):

$$a^4 \Bigg(\Big(A\,(\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c]\,(\mathrm{Cos}[4\,c]-\mathrm{i}\,\mathrm{Sin}[4\,c])\,\mathrm{Sin}[d\,x]\,\mathrm{Sin}[c+d\,x]^4\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\Big((\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,(4\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c]+B\,\mathrm{Cos}[2\,c]+4\,A\,\mathrm{Sin}[2\,c]-\mathrm{i}\,B\,\mathrm{Sin}[2\,c])\,(-\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Cos}[2\,c]-\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Sin}[2\,c])\,\mathrm{Sin}[c+d\,x]^5\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\Big((\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,(4\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c]+7\,B\,\mathrm{Cos}[2\,c]+4\,A\,\mathrm{Sin}[2\,c]-7\,\mathrm{i}\,B\,\mathrm{Sin}[2\,c])\,\left(\frac{1}{2}\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]-\frac{1}{2}\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]\right)\,\mathrm{Sin}[c+d\,x]^5\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\Big((\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,(4\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c]+B\,\mathrm{Cos}[2\,c]+4\,A\,\mathrm{Sin}[2\,c]-\mathrm{i}\,B\,\mathrm{Sin}[2\,c])\,\left(\frac{1}{2}\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-\frac{1}{2}\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]\right)\,\mathrm{Sin}[c+d\,x]^5\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\Big((A-\mathrm{i}\,B)\,(\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,(-8\,d\,x\,\mathrm{Cos}[4\,c]+8\,\mathrm{i}\,d\,x\,\mathrm{Sin}[4\,c])\,\mathrm{Sin}[c+d\,x]^5\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\frac{1}{(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}\,x\,(\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^5$$

$$\Big(2\,A\,\mathrm{Cos}[c]^2-\frac{7}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[c]^2-22\,A\,\mathrm{Cos}[c]^4+\frac{17}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[c]^4-4\,\mathrm{i}\,A\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]-B\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]-6\,\mathrm{i}\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-\frac{21}{2}\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+50\,\mathrm{i}\,A\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]+$$

$$\frac{55}{2}\,B\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-6\,A\,\mathrm{Sin}[c]^2+\frac{21}{2}\,\mathrm{i}\,B\,\mathrm{Sin}[c]^2+60\,A\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2-45\,\mathrm{i}\,B\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2-40\,\mathrm{i}\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3-40\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3-14\,A\,\mathrm{Sin}[c]^4+\frac{37}{2}\,\mathrm{i}\,B\,\mathrm{Sin}[c]^4+$$

$$(-3\,B+4\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c]+4\,B\,\mathrm{Cos}[2\,c])\,\mathrm{Csc}[c]\,\mathrm{Sec}[c]\,(\mathrm{Cos}[4\,c]-\mathrm{i}\,\mathrm{Sin}[4\,c])+2\,\mathrm{i}\,A\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]+\frac{7}{2}\,B\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]+2\,\mathrm{i}\,A\,\mathrm{Sin}[c]^4\,\mathrm{Tan}[c]+\frac{7}{2}\,B\,\mathrm{Sin}[c]^4\,\mathrm{Tan}[c]\Big)+$$

$$\Big((\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sec}[c]\,(\mathrm{Cos}[4\,c]-\mathrm{i}\,\mathrm{Sin}[4\,c])\,(A\,\mathrm{Sin}[d\,x]-4\,\mathrm{i}\,B\,\mathrm{Sin}[d\,x])\,\mathrm{Sin}[c+d\,x]^4\,\mathrm{Tan}[c+d\,x]\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big) +$$

$$\Big((\mathrm{i}+\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\left(\frac{1}{2}\,B\,\mathrm{Cos}[4\,c]-\frac{1}{2}\,\mathrm{i}\,B\,\mathrm{Sin}[4\,c]\right)\,\mathrm{Sin}[c+d\,x]^3\,\mathrm{Tan}[c+d\,x]^2\Big) \Big/ \Big(d\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)\Bigg)$$

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

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

Optimal (type 3, 156 leaves, 7 steps):

$$-8 a^4 \left(\mathbb{i} A+B\right) x-\frac{a^4 \left(A-4 \mathbb{i} B\right) \text{Log}[\text{Cos}[c+d x]]}{d}-\frac{a^4 \left(7 A-4 \mathbb{i} B\right) \text{Log}[\text{Sin}[c+d x]]}{d}-\frac{a A \,\text{Cot}[c+d x]^2 \left(a+\mathbb{i}\, a \,\text{Tan}[c+d x]\right)^3}{2 d}-\frac{\left(5 \mathbb{i} A+2 B\right) \text{Cot}[c+d x] \left(a^2+\mathbb{i}\, a^2 \,\text{Tan}[c+d x]\right)^2}{2 d}-\frac{3 A \left(a^4+\mathbb{i}\, a^4 \,\text{Tan}[c+d x]\right)}{d}$$

Result (type 3, 1116 leaves):

$$a^4\left(\left((i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\left(-\frac{1}{2}A\,\text{Cos}[4c]+\frac{1}{2}iA\,\text{Sin}[4c]\right)\text{Sin}[c+dx]^3\right)\Big/\right.$$
$$\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+$$
$$\left((i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\,\text{Csc}[c]\,(\text{Cos}[4c]-i\,\text{Sin}[4c])\right.$$
$$\left.(4iA\,\text{Sin}[dx]+B\,\text{Sin}[dx])\,\text{Sin}[c+dx]^4\right)\Big/$$
$$\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+\left((i+\text{Cot}[c+dx])^4\right.$$
$$(B+A\,\text{Cot}[c+dx])\,(7A\,\text{Cos}[2c]-4iB\,\text{Cos}[2c]-7iA\,\text{Sin}[2c]-4B\,\text{Sin}[2c])$$
$$\left.(i\,\text{ArcTan}[\text{Tan}[5c+dx]]\,\text{Cos}[2c]+\text{ArcTan}[\text{Tan}[5c+dx]]\,\text{Sin}[2c])\,\text{Sin}[c+dx]^5\right)\Big/$$
$$\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+$$
$$\left((i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\,(A\,\text{Cos}[2c]-4iB\,\text{Cos}[2c]-iA\,\text{Sin}[2c]-4B\,\text{Sin}[2c])\right.$$
$$\left.\left(-\frac{1}{2}\text{Cos}[2c]\,\text{Log}\left[\text{Cos}[c+dx]^2\right]+\frac{1}{2}i\,\text{Log}\left[\text{Cos}[c+dx]^2\right]\text{Sin}[2c]\right)\text{Sin}[c+dx]^5\right)\Big/$$
$$\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+\left((i+\text{Cot}[c+dx])^4\right.$$
$$(B+A\,\text{Cot}[c+dx])\,(7A\,\text{Cos}[2c]-4iB\,\text{Cos}[2c]-7iA\,\text{Sin}[2c]-4B\,\text{Sin}[2c])$$
$$\left.\left(-\frac{1}{2}\text{Cos}[2c]\,\text{Log}\left[\text{Sin}[c+dx]^2\right]+\frac{1}{2}i\,\text{Log}\left[\text{Sin}[c+dx]^2\right]\text{Sin}[2c]\right)\text{Sin}[c+dx]^5\right)\Big/$$
$$\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+$$
$$\left((A-iB)\,(i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\,(-8idx\,\text{Cos}[4c]-8dx\,\text{Sin}[4c])\right.$$
$$\left.\text{Sin}[c+dx]^5\right)\Big/\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+$$
$$\frac{1}{(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])}$$
$$x\,(i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\,\text{Sin}[c+dx]^5$$
$$\left(\frac{1}{2}iA\,\text{Cos}[c]^2+2B\,\text{Cos}[c]^2-\frac{71}{2}iA\,\text{Cos}[c]^4-22B\,\text{Cos}[c]^4+7A\,\text{Cos}[c]^4\,\text{Cot}[c]-\right.$$
$$4iB\,\text{Cos}[c]^4\,\text{Cot}[c]+\frac{3}{2}A\,\text{Cos}[c]\,\text{Sin}[c]-6iB\,\text{Cos}[c]\,\text{Sin}[c]-\frac{145}{2}A\,\text{Cos}[c]^3\,\text{Sin}[c]+$$
$$50iB\,\text{Cos}[c]^3\,\text{Sin}[c]-\frac{3}{2}iA\,\text{Sin}[c]^2-6B\,\text{Sin}[c]^2+75iA\,\text{Cos}[c]^2\,\text{Sin}[c]^2+$$
$$60B\,\text{Cos}[c]^2\,\text{Sin}[c]^2+40A\,\text{Cos}[c]\,\text{Sin}[c]^3-40iB\,\text{Cos}[c]\,\text{Sin}[c]^3-\frac{19}{2}iA\,\text{Sin}[c]^4-$$
$$14B\,\text{Sin}[c]^4+(3A+4A\,\text{Cos}[2c]-4iB\,\text{Cos}[2c])\,\text{Csc}[c]\,\text{Sec}[c]\,(-\text{Cos}[4c]+i\,\text{Sin}[4c])-$$
$$\left.\frac{1}{2}A\,\text{Sin}[c]^2\,\text{Tan}[c]+2iB\,\text{Sin}[c]^2\,\text{Tan}[c]-\frac{1}{2}A\,\text{Sin}[c]^4\,\text{Tan}[c]+2iB\,\text{Sin}[c]^4\,\text{Tan}[c]\right)+$$
$$\left(B(i+\text{Cot}[c+dx])^4(B+A\,\text{Cot}[c+dx])\,\text{Sec}[c]\,(\text{Cos}[4c]-i\,\text{Sin}[4c])\,\text{Sin}[dx]\right.$$
$$\left.\left.\text{Sin}[c+dx]^4\,\text{Tan}[c+dx]\right)\Big/\left(d(\text{Cos}[dx]+i\,\text{Sin}[dx])^4(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)\right)$$

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

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

Optimal (type 3, 163 leaves, 7 steps):

$$8\,a^4\,\left(A-i\,B\right)\,x-\frac{a^4\,B\,\text{Log}[\text{Cos}[c+d\,x]]}{d}-\frac{a^4\,\left(8\,i\,A+7\,B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}-\frac{a\,A\,\text{Cot}[c+d\,x]^3\,\left(a+i\,a\,\text{Tan}[c+d\,x]\right)^3}{3\,d}-\frac{\left(2\,i\,A+B\right)\,\text{Cot}[c+d\,x]^2\,\left(a^2+i\,a^2\,\text{Tan}[c+d\,x]\right)^2}{2\,d}+\frac{\left(4\,A-3\,i\,B\right)\,\text{Cot}[c+d\,x]\,\left(a^4+i\,a^4\,\text{Tan}[c+d\,x]\right)}{d}$$

Result (type 3, 1138 leaves):

$$a^4 \left(\left(A\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Csc}[c]\left(\frac{1}{3}\mathrm{Cos}[4 c]-\frac{1}{3}\mathrm{i}\,\mathrm{Sin}[4 c]\right)\mathrm{Sin}[d x]\right.\right.$$

$$\left.\mathrm{Sin}[c+d x]^2\right)\Big/\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+$$

$$\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Csc}[c]\left(-2 A\,\mathrm{Cos}[c]-12\,\mathrm{i}\,A\,\mathrm{Sin}[c]-3 B\,\mathrm{Sin}[c]\right)\right.$$

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

$$\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+$$

$$\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Csc}[c]\left(-\frac{2}{3}\mathrm{Cos}[4 c]+\frac{2}{3}\mathrm{i}\,\mathrm{Sin}[4 c]\right)\right.$$

$$\left.\left(11 A\,\mathrm{Sin}[d x]-6\,\mathrm{i}\,B\,\mathrm{Sin}[d x]\right)\mathrm{Sin}[c+d x]^4\right)\Big/$$

$$\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)-$$

$$\left(B\,\mathrm{Cos}[4 c]\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Log}\left[\mathrm{Cos}[c+d x]^2\right]\mathrm{Sin}[c+d x]^5\right)\Big/$$

$$\left(2 d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\right.$$

$$\left(B+A\,\mathrm{Cot}[c+d x]\right)\left(8 A\,\mathrm{Cos}[2 c]-7\,\mathrm{i}\,B\,\mathrm{Cos}[2 c]-8\,\mathrm{i}\,A\,\mathrm{Sin}[2 c]-7 B\,\mathrm{Sin}[2 c]\right)$$

$$\left.\left(-\mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]]\,\mathrm{Cos}[2 c]+\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]]\,\mathrm{Sin}[2 c]\right)\mathrm{Sin}[c+d x]^5\right)\Big/$$

$$\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+\left(\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\right.$$

$$\left(B+A\,\mathrm{Cot}[c+d x]\right)\left(8 A\,\mathrm{Cos}[2 c]-7\,\mathrm{i}\,B\,\mathrm{Cos}[2 c]-8\,\mathrm{i}\,A\,\mathrm{Sin}[2 c]-7 B\,\mathrm{Sin}[2 c]\right)$$

$$\left.\left(-\frac{1}{2}\mathrm{i}\,\mathrm{Cos}[2 c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right]-\frac{1}{2}\mathrm{Log}\left[\mathrm{Sin}[c+d x]^2\right]\mathrm{Sin}[2 c]\right)\mathrm{Sin}[c+d x]^5\right)\Big/$$

$$\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+$$

$$\left(\mathrm{i}\,B\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Log}\left[\mathrm{Cos}[c+d x]^2\right]\mathrm{Sin}[4 c]\,\mathrm{Sin}[c+d x]^5\right)\Big/$$

$$\left(2 d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+$$

$$\left(\left(A-\mathrm{i}\,B\right)\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\left(8 d x\,\mathrm{Cos}[4 c]-8\,\mathrm{i}\,d x\,\mathrm{Sin}[4 c]\right)\right.$$

$$\left.\mathrm{Sin}[c+d x]^5\right)\Big/\left(d\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)\right)+$$

$$\frac{1}{\left(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x]\right)^4\left(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x]\right)}$$

$$x\left(\mathrm{i}+\mathrm{Cot}[c+d x]\right)^4\left(B+A\,\mathrm{Cot}[c+d x]\right)\mathrm{Sin}[c+d x]^5$$

$$\left(\frac{1}{2}\mathrm{i}\,B\,\mathrm{Cos}[c]^2+40 A\,\mathrm{Cos}[c]^4-\frac{71}{2}\mathrm{i}\,B\,\mathrm{Cos}[c]^4+8\,\mathrm{i}\,A\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]+7 B\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]+\right.$$

$$\frac{3}{2}B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-80\,\mathrm{i}\,A\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-\frac{145}{2}B\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-\frac{3}{2}\mathrm{i}\,B\,\mathrm{Sin}[c]^2-$$

$$80 A\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2+75\,\mathrm{i}\,B\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2+40\,\mathrm{i}\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+40 B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+$$

$$8 A\,\mathrm{Sin}[c]^4-\frac{19}{2}\mathrm{i}\,B\,\mathrm{Sin}[c]^4-\mathrm{i}\left(4 A-3\,\mathrm{i}\,B+4 A\,\mathrm{Cos}[2 c]-4\,\mathrm{i}\,B\,\mathrm{Cos}[2 c]\right)\mathrm{Csc}[c]$$

$$\left.\left.\mathrm{Sec}[c]\left(\mathrm{Cos}[4 c]-\mathrm{i}\,\mathrm{Sin}[4 c]\right)-\frac{1}{2}B\,\mathrm{Sin}[c]^2\,\mathrm{Tan}[c]-\frac{1}{2}B\,\mathrm{Sin}[c]^4\,\mathrm{Tan}[c]\right)\right)$$

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

$$\int \text{Cot}[c+d\,x]^5\,\left(a+\text{i}\,a\,\text{Tan}[c+d\,x]\right)^4\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

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

$$8\,a^4\,\left(\text{i}\,A+B\right)\,x+\frac{a^4\,\left(67\,\text{i}\,A+64\,B\right)\,\text{Cot}[c+d\,x]}{12\,d}+\frac{8\,a^4\,\left(A-\text{i}\,B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}-\frac{a\,A\,\text{Cot}[c+d\,x]^4\,\left(a+\text{i}\,a\,\text{Tan}[c+d\,x]\right)^3}{4\,d}-\frac{\left(7\,\text{i}\,A+4\,B\right)\,\text{Cot}[c+d\,x]^3\,\left(a^2+\text{i}\,a^2\,\text{Tan}[c+d\,x]\right)^2}{12\,d}+\frac{\left(19\,A-16\,\text{i}\,B\right)\,\text{Cot}[c+d\,x]^2\,\left(a^4+\text{i}\,a^4\,\text{Tan}[c+d\,x]\right)}{12\,d}$$

Result (type 3, 985 leaves):

$$a^4 \Bigg(\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big) \left(-\frac{1}{4}A\,\mathrm{Cos}[4\,c]+\frac{1}{4}\,\mathrm{i}\,A\,\mathrm{Sin}[4\,c]\right) \mathrm{Sin}[c+d\,x]\bigg) \bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\mathrm{Csc}[c] \left(\frac{1}{3}\mathrm{Cos}[4\,c]-\frac{1}{3}\,\mathrm{i}\,\mathrm{Sin}[4\,c]\right)$$

$$\big(4\,\mathrm{i}\,A\,\mathrm{Sin}[d\,x]+B\,\mathrm{Sin}[d\,x]\big)\,\mathrm{Sin}[c+d\,x]^2\bigg)\bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\mathrm{Csc}[c]\,\big(-4\,\mathrm{i}\,A\,\mathrm{Cos}[c]-B\,\mathrm{Cos}[c]+$$

$$12\,A\,\mathrm{Sin}[c]-6\,\mathrm{i}\,B\,\mathrm{Sin}[c]\big)\left(\frac{1}{3}\mathrm{Cos}[4\,c]-\frac{1}{3}\,\mathrm{i}\,\mathrm{Sin}[4\,c]\right)\mathrm{Sin}[c+d\,x]^3\bigg)\bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\mathrm{Csc}[c] \left(\frac{2}{3}\mathrm{Cos}[4\,c]-\frac{2}{3}\,\mathrm{i}\,\mathrm{Sin}[4\,c]\right)$$

$$\big(-14\,\mathrm{i}\,A\,\mathrm{Sin}[d\,x]-11\,B\,\mathrm{Sin}[d\,x]\big)\,\mathrm{Sin}[c+d\,x]^4\bigg)\bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\big(A\,\mathrm{Cos}[2\,c]-\mathrm{i}\,B\,\mathrm{Cos}[2\,c]-\mathrm{i}\,A\,\mathrm{Sin}[2\,c]-B\,\mathrm{Sin}[2\,c]\big)$$

$$\big(-8\,\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Cos}[2\,c]-8\,\mathrm{ArcTan}[\mathrm{Tan}[5\,c+d\,x]]\,\mathrm{Sin}[2\,c]\big)\,\mathrm{Sin}[c+d\,x]^5\bigg)\bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\bigg(\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\big(A\,\mathrm{Cos}[2\,c]-\mathrm{i}\,B\,\mathrm{Cos}[2\,c]-\mathrm{i}\,A\,\mathrm{Sin}[2\,c]-B\,\mathrm{Sin}[2\,c]\big)$$

$$\big(4\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]-4\,\mathrm{i}\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\,\mathrm{Sin}[2\,c]\big)\,\mathrm{Sin}[c+d\,x]^5\bigg)\bigg/$$

$$\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)+$$

$$\frac{1}{\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)}$$

$$x\,\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\big(40\,\mathrm{i}\,A\,\mathrm{Cos}[c]^4+40\,B\,\mathrm{Cos}[c]^4-8\,A\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]+$$

$$8\,\mathrm{i}\,B\,\mathrm{Cos}[c]^4\,\mathrm{Cot}[c]+80\,A\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-80\,\mathrm{i}\,B\,\mathrm{Cos}[c]^3\,\mathrm{Sin}[c]-80\,\mathrm{i}\,A\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2-$$

$$80\,B\,\mathrm{Cos}[c]^2\,\mathrm{Sin}[c]^2-40\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+40\,\mathrm{i}\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]^3+8\,\mathrm{i}\,A\,\mathrm{Sin}[c]^4+$$

$$8\,B\,\mathrm{Sin}[c]^4+(A-\mathrm{i}\,B)\,\mathrm{Cot}[c]\,\big(8\,\mathrm{Cos}[4\,c]-8\,\mathrm{i}\,\mathrm{Sin}[4\,c]\big)\big)\,\mathrm{Sin}[c+d\,x]^5+$$

$$\bigg((\mathrm{i}\,A+B)\,\big(\mathrm{i}+\mathrm{Cot}[c+d\,x]\big)^4 \big(B+A\,\mathrm{Cot}[c+d\,x]\big)\,\big(8\,d\,x\,\mathrm{Cos}[4\,c]-8\,\mathrm{i}\,d\,x\,\mathrm{Sin}[4\,c]\big)$$

$$\mathrm{Sin}[c+d\,x]^5\bigg)\bigg/\bigg(d\,\big(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\big)^4 \big(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\big)\bigg)\Bigg)$$

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

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

Optimal (type 3, 200 leaves, 7 steps):

$$-8 a^4 (A - i B) x - \frac{8 a^4 (A - i B) \text{Cot}[c + d x]}{d} + \frac{a^4 (148 i A + 145 B) \text{Cot}[c + d x]^2}{60 d} + \frac{8 a^4 (i A + B) \text{Log}[\text{Sin}[c + d x]]}{d} - \frac{a A \text{Cot}[c + d x]^5 (a + i a \text{Tan}[c + d x])^3}{5 d} - \frac{(8 i A + 5 B) \text{Cot}[c + d x]^4 (a^2 + i a^2 \text{Tan}[c + d x])^2}{20 d} + \frac{(28 A - 25 i B) \text{Cot}[c + d x]^3 (a^4 + i a^4 \text{Tan}[c + d x])}{30 d}$$

Result (type 3, 937 leaves):

$$a^4 \Bigg(\Big((i + \text{Cot}[c + d x])^4 (B + A \text{Cot}[c + d x]) (i A \text{Cos}[2 c] + B \text{Cos}[2 c] + A \text{Sin}[2 c] - i B \text{Sin}[2 c]) (-8 i \text{ArcTan}[\text{Tan}[5 c + d x]] \text{Cos}[2 c] - 8 \text{ArcTan}[\text{Tan}[5 c + d x]] \text{Sin}[2 c]) \text{Sin}[c + d x]^5 \Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x]) \Big) + \Big((i + \text{Cot}[c + d x])^4 (B + A \text{Cot}[c + d x]) (i A \text{Cos}[2 c] + B \text{Cos}[2 c] + A \text{Sin}[2 c] - i B \text{Sin}[2 c]) \left(4 \text{Cos}[2 c] \text{Log}\left[\text{Sin}[c + d x]^2\right] - 4 i \text{Log}\left[\text{Sin}[c + d x]^2\right] \text{Sin}[2 c]\right) \text{Sin}[c + d x]^5 \Big) \Big/ \Big(d (\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x]) \Big) + \frac{1}{(\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} x (i + \text{Cot}[c + d x])^4 (B + A \text{Cot}[c + d x]) \big(-40 A \text{Cos}[c]^4 + 40 i B \text{Cos}[c]^4 - 8 i A \text{Cos}[c]^4 \text{Cot}[c] - 8 B \text{Cos}[c]^4 \text{Cot}[c] + 80 i A \text{Cos}[c]^3 \text{Sin}[c] + 80 B \text{Cos}[c]^3 \text{Sin}[c] + 80 A \text{Cos}[c]^2 \text{Sin}[c]^2 - 80 i B \text{Cos}[c]^2 \text{Sin}[c]^2 - 40 i A \text{Cos}[c] \text{Sin}[c]^3 - 40 B \text{Cos}[c] \text{Sin}[c]^3 - 8 A \text{Sin}[c]^4 + 8 i B \text{Sin}[c]^4 + (i A + B) \text{Cot}[c] (8 \text{Cos}[4 c] - 8 i \text{Sin}[4 c]) \big) \text{Sin}[c + d x]^5 + \frac{1}{d (\text{Cos}[d x] + i \text{Sin}[d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])} (i + \text{Cot}[c + d x])^4 (B + A \text{Cot}[c + d x]) \text{Csc}[c] \left(\frac{1}{120} \text{Cos}[4 c] - \frac{1}{120} i \text{Sin}[4 c] \right) \big(210 i A \text{Cos}[d x] + 165 B \text{Cos}[d x] - 300 A d x \text{Cos}[d x] + 300 i B d x \text{Cos}[d x] - 210 i A \text{Cos}[2 c + d x] - 165 B \text{Cos}[2 c + d x] + 300 A d x \text{Cos}[2 c + d x] - 300 i B d x \text{Cos}[2 c + d x] - 90 i A \text{Cos}[2 c + 3 d x] - 60 B \text{Cos}[2 c + 3 d x] + 150 A d x \text{Cos}[2 c + 3 d x] - 150 i B d x \text{Cos}[2 c + 3 d x] + 90 i A \text{Cos}[4 c + 3 d x] + 60 B \text{Cos}[4 c + 3 d x] - 150 A d x \text{Cos}[4 c + 3 d x] + 150 i B d x \text{Cos}[4 c + 3 d x] - 30 A d x \text{Cos}[4 c + 5 d x] + 30 i B d x \text{Cos}[4 c + 5 d x] + 30 A d x \text{Cos}[6 c + 5 d x] - 30 i B d x \text{Cos}[6 c + 5 d x] + 445 A \text{Sin}[d x] - 400 i B \text{Sin}[d x] + 345 A \text{Sin}[2 c + d x] - 300 i B \text{Sin}[2 c + d x] - 275 A \text{Sin}[2 c + 3 d x] + 260 i B \text{Sin}[2 c + 3 d x] - 120 A \text{Sin}[4 c + 3 d x] + 90 i B \text{Sin}[4 c + 3 d x] + 79 A \text{Sin}[4 c + 5 d x] - 70 i B \text{Sin}[4 c + 5 d x] \big) \Bigg)$$

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

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

Optimal (type 3, 223 leaves, 8 steps):

$$-8 a^4 (\mathrm{i} A+B) x-\frac{8 a^4 (\mathrm{i} A+B) \mathrm{Cot}[c+d x]}{d}-\frac{4 a^4 (A-\mathrm{i} B) \mathrm{Cot}[c+d x]^2}{d}+\frac{a^4 (93 \mathrm{i} A+92 B) \mathrm{Cot}[c+d x]^3}{60 d}-\frac{8 a^4 (A-\mathrm{i} B) \mathrm{Log}[\mathrm{Sin}[c+d x]]}{d}-\frac{a A \mathrm{Cot}[c+d x]^6 (a+\mathrm{i} a \mathrm{Tan}[c+d x])^3}{6 d}-\frac{(3 \mathrm{i} A+2 B) \mathrm{Cot}[c+d x]^5 (a^2+\mathrm{i} a^2 \mathrm{Tan}[c+d x])^2}{10 d}+\frac{(13 A-12 \mathrm{i} B) \mathrm{Cot}[c+d x]^4 (a^4+\mathrm{i} a^4 \mathrm{Tan}[c+d x])}{20 d}$$

Result (type 3, 1009 leaves):

$$a^4 \Big(\big((\mathrm{i}+\mathrm{Cot}[c+d x])^4 (B+A \mathrm{Cot}[c+d x]) (A \mathrm{Cos}[2 c]-\mathrm{i} B \mathrm{Cos}[2 c]-\mathrm{i} A \mathrm{Sin}[2 c]-B \mathrm{Sin}[2 c]) (8 \mathrm{i} \mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]] \mathrm{Cos}[2 c]+8 \mathrm{ArcTan}[\mathrm{Tan}[5 c+d x]] \mathrm{Sin}[2 c]) \mathrm{Sin}[c+d x]^5\big) \Big/ \big(d (\mathrm{Cos}[d x]+\mathrm{i} \mathrm{Sin}[d x])^4 (A \mathrm{Cos}[c+d x]+B \mathrm{Sin}[c+d x])\big)+$$
$$\big((\mathrm{i}+\mathrm{Cot}[c+d x])^4 (B+A \mathrm{Cot}[c+d x]) (A \mathrm{Cos}[2 c]-\mathrm{i} B \mathrm{Cos}[2 c]-\mathrm{i} A \mathrm{Sin}[2 c]-B \mathrm{Sin}[2 c]) (-4 \mathrm{Cos}[2 c] \mathrm{Log}[\mathrm{Sin}[c+d x]^2]+4 \mathrm{i} \mathrm{Log}[\mathrm{Sin}[c+d x]^2] \mathrm{Sin}[2 c]) \mathrm{Sin}[c+d x]^5\big) \Big/ \big(d (\mathrm{Cos}[d x]+\mathrm{i} \mathrm{Sin}[d x])^4 (A \mathrm{Cos}[c+d x]+B \mathrm{Sin}[c+d x])\big)+$$
$$\frac{1}{(\mathrm{Cos}[d x]+\mathrm{i} \mathrm{Sin}[d x])^4 (A \mathrm{Cos}[c+d x]+B \mathrm{Sin}[c+d x])} x (\mathrm{i}+\mathrm{Cot}[c+d x])^4 (B+A \mathrm{Cot}[c+d x]) (-40 \mathrm{i} A \mathrm{Cos}[c]^4-40 B \mathrm{Cos}[c]^4+8 A \mathrm{Cos}[c]^4 \mathrm{Cot}[c]-8 \mathrm{i} B \mathrm{Cos}[c]^4 \mathrm{Cot}[c]-80 A \mathrm{Cos}[c]^3 \mathrm{Sin}[c]+80 \mathrm{i} B \mathrm{Cos}[c]^3 \mathrm{Sin}[c]+80 \mathrm{i} A \mathrm{Cos}[c]^2 \mathrm{Sin}[c]^2+80 B \mathrm{Cos}[c]^2 \mathrm{Sin}[c]^2+40 A \mathrm{Cos}[c] \mathrm{Sin}[c]^3-40 \mathrm{i} B \mathrm{Cos}[c] \mathrm{Sin}[c]^3-8 \mathrm{i} A \mathrm{Sin}[c]^4-8 B \mathrm{Sin}[c]^4+(A-\mathrm{i} B) \mathrm{Cot}[c] (-8 \mathrm{Cos}[4 c]+8 \mathrm{i} \mathrm{Sin}[4 c])) \mathrm{Sin}[c+d x]^5+$$
$$\frac{1}{d (\mathrm{Cos}[d x]+\mathrm{i} \mathrm{Sin}[d x])^4 (A \mathrm{Cos}[c+d x]+B \mathrm{Sin}[c+d x])} (\mathrm{i}+\mathrm{Cot}[c+d x])^4 (B+A \mathrm{Cot}[c+d x]) \mathrm{Csc}[c] \mathrm{Csc}[c+d x] \left(\frac{1}{240} \mathrm{Cos}[4 c]-\frac{1}{240} \mathrm{i} \mathrm{Sin}[4 c]\right) (860 \mathrm{i} A \mathrm{Cos}[c]+790 B \mathrm{Cos}[c]-780 \mathrm{i} A \mathrm{Cos}[c+2 d x]-720 B \mathrm{Cos}[c+2 d x]-510 \mathrm{i} A \mathrm{Cos}[3 c+2 d x]-465 B \mathrm{Cos}[3 c+2 d x]+366 \mathrm{i} A \mathrm{Cos}[3 c+4 d x]+354 B \mathrm{Cos}[3 c+4 d x]+150 \mathrm{i} A \mathrm{Cos}[5 c+4 d x]+120 B \mathrm{Cos}[5 c+4 d x]-86 \mathrm{i} A \mathrm{Cos}[5 c+6 d x]-79 B \mathrm{Cos}[5 c+6 d x]-490 A \mathrm{Sin}[c]+420 \mathrm{i} B \mathrm{Sin}[c]-600 \mathrm{i} A d x \mathrm{Sin}[c]-600 B d x \mathrm{Sin}[c]-345 A \mathrm{Sin}[c+2 d x]+300 \mathrm{i} B \mathrm{Sin}[c+2 d x]-450 \mathrm{i} A d x \mathrm{Sin}[c+2 d x]-450 B d x \mathrm{Sin}[c+2 d x]+345 A \mathrm{Sin}[3 c+2 d x]-300 \mathrm{i} B \mathrm{Sin}[3 c+2 d x]+450 \mathrm{i} A d x \mathrm{Sin}[3 c+2 d x]+450 B d x \mathrm{Sin}[3 c+2 d x]+120 A \mathrm{Sin}[3 c+4 d x]-90 \mathrm{i} B \mathrm{Sin}[3 c+4 d x]+180 \mathrm{i} A d x \mathrm{Sin}[3 c+4 d x]+180 B d x \mathrm{Sin}[3 c+4 d x]-120 A \mathrm{Sin}[5 c+4 d x]+90 \mathrm{i} B \mathrm{Sin}[5 c+4 d x]-180 \mathrm{i} A d x \mathrm{Sin}[5 c+4 d x]-180 B d x \mathrm{Sin}[5 c+4 d x]-30 \mathrm{i} A d x \mathrm{Sin}[5 c+6 d x]-30 B d x \mathrm{Sin}[5 c+6 d x]+30 \mathrm{i} A d x \mathrm{Sin}[7 c+6 d x]+30 B d x \mathrm{Sin}[7 c+6 d x]) \Big)$$

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

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

Optimal (type 3, 129 leaves, 4 steps):

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

Result (type 3, 898 leaves):

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

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

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

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

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

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

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

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

Problem 37: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 773 leaves):

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

Problem 38: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 67 leaves, 5 steps):

$$-\frac{(i A-B) x}{2 a}+\frac{i B \operatorname{Log}[\operatorname{Cos}[c+d x]]}{a d}-\frac{A+i B}{2 a d (1+i \operatorname{Tan}[c+d x])}$$

Result (type 3, 148 leaves):

$$\left(\operatorname{Cos}[c+d x] (A+B \operatorname{Tan}[c+d x]) \left(i A-B-2 A d x+2 i B d x+2 B \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right]+\left(A+i B-2 i A d x-2 B d x+2 i B \operatorname{Log}\left[\operatorname{Cos}[c+d x]^2\right]\right) \operatorname{Tan}[c+d x]+4 B \operatorname{ArcTan}[\operatorname{Tan}[d x]] (-i+\operatorname{Tan}[c+d x])\right)\right) / (4 a d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (-i+\operatorname{Tan}[c+d x]))$$

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

$$\int \frac{A+B \operatorname{Tan}[c+d x]}{a+i a \operatorname{Tan}[c+d x]} dx$$

Optimal (type 3, 47 leaves, 2 steps):

$$\frac{(A-i B) x}{2 a}+\frac{i A-B}{2 d (a+i a \operatorname{Tan}[c+d x])}$$

Result (type 3, 102 leaves):

$$(\operatorname{Cos}[c+d x] (A+B \operatorname{Tan}[c+d x]) (A-2 i A d x+B (i-2 d x)+(B-2 i B d x+A (-i+2 d x)) \operatorname{Tan}[c+d x])) / (4 a d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (-i+\operatorname{Tan}[c+d x]))$$

Problem 40: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x] (A+B \operatorname{Tan}[c+d x])}{a+i a \operatorname{Tan}[c+d x]} dx$$

Optimal (type 3, 62 leaves, 3 steps):

$$-\frac{(i A-B) x}{2 a}+\frac{A \operatorname{Log}[\operatorname{Sin}[c+d x]]}{a d}+\frac{A+i B}{2 d (a+i a \operatorname{Tan}[c+d x])}$$

Result (type 3, 150 leaves):

$$\left(\operatorname{Cos}[c+d x] (A+B \operatorname{Tan}[c+d x]) \left(-i A+B+2 A d x-2 i B d x-2 i A \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]+\left(-A-i B+2 i A d x+2 B d x+2 A \operatorname{Log}\left[\operatorname{Sin}[c+d x]^2\right]\right) \operatorname{Tan}[c+d x]-4 i A \operatorname{ArcTan}[\operatorname{Tan}[d x]] (-i+\operatorname{Tan}[c+d x])\right)\right) / (4 a d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (-i+\operatorname{Tan}[c+d x]))$$

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

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

Optimal (type 3, 102 leaves, 4 steps):

$$-\frac{(3A+iB)x}{2a}-\frac{(3A+iB)\,\mathrm{Cot}[c+dx]}{2ad}-\frac{(iA-B)\,\mathrm{Log}[\mathrm{Sin}[c+dx]]}{ad}+\frac{(A+iB)\,\mathrm{Cot}[c+dx]}{2d\,(a+ia\,\mathrm{Tan}[c+dx])}$$

Result (type 3, 225 leaves):

$$\frac{1}{2d\,(A\,\mathrm{Cos}[c+dx]+B\,\mathrm{Sin}[c+dx])\,(a+ia\,\mathrm{Tan}[c+dx])}(\mathrm{Cos}[dx]+i\,\mathrm{Sin}[dx])$$
$$\Bigg(\frac{1}{2}(-iA+B)\,\mathrm{Cos}[2dx]\,(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])+2\,(A+iB)\,dx\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])-$$
$$(3A+iB)\,dx\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])-2\,(A+iB)\,\mathrm{ArcTan}[\mathrm{Tan}[dx]]\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+$$
$$(-iA+B)\,\mathrm{Log}\left[\mathrm{Sin}[c+dx]^2\right]\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+2A\,(i+\mathrm{Cot}[c])\,\mathrm{Csc}[c+dx]\,\mathrm{Sin}[dx]-$$
$$\frac{1}{2}(A+iB)\,(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])\,\mathrm{Sin}[2dx]\Bigg)\,(A+B\,\mathrm{Tan}[c+dx])$$

Problem 42: Result more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+dx]^3\,(A+B\,\mathrm{Tan}[c+dx])}{a+ia\,\mathrm{Tan}[c+dx]}\,dx$$

Optimal (type 3, 131 leaves, 5 steps):

$$\frac{3\,(iA-B)\,x}{2a}+\frac{3\,(iA-B)\,\mathrm{Cot}[c+dx]}{2ad}-\frac{(2A+iB)\,\mathrm{Cot}[c+dx]^2}{2ad}-$$
$$\frac{(2A+iB)\,\mathrm{Log}[\mathrm{Sin}[c+dx]]}{ad}+\frac{(A+iB)\,\mathrm{Cot}[c+dx]^2}{2d\,(a+ia\,\mathrm{Tan}[c+dx])}$$

Result (type 3, 902 leaves):

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

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

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

Optimal (type 3, 155 leaves, 6 steps):

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

Result (type 3, 1062 leaves):

$$\left(\left(A\,\text{Cos}\left[\frac{c}{2}\right]+i\,B\,\text{Cos}\left[\frac{c}{2}\right]+i\,A\,\text{Sin}\left[\frac{c}{2}\right]-B\,\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left(2\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Cos}\left[\frac{c}{2}\right]+2\,i\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sin}\left[\frac{c}{2}\right]\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left(\left(A\,\text{Cos}\left[\frac{c}{2}\right]+i\,B\,\text{Cos}\left[\frac{c}{2}\right]+i\,A\,\text{Sin}\left[\frac{c}{2}\right]-B\,\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left(i\,\text{Cos}\left[\frac{c}{2}\right]\,\text{Log}\left[\text{Sin}[c+d\,x]^2\right]-\text{Log}\left[\text{Sin}[c+d\,x]^2\right]\,\text{Sin}\left[\frac{c}{2}\right]\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left(x\,\left(-2\,i\,A\,\text{Csc}[c]+2\,B\,\text{Csc}[c]+i\,(A+i\,B)\,\text{Cot}[c]\,(2\,\text{Cos}[c]+2\,i\,\text{Sin}[c])\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\right.$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left((A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left((A+i\,B)\,\text{Cos}[2\,d\,x]\,\left(\frac{1}{4}\,i\,\text{Cos}[c]+\frac{\text{Sin}[c]}{4}\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left(\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}[c+d\,x]^2\,\text{Sec}\left[\frac{c}{2}\right]\,\left(-\frac{\text{Cos}[c]}{12}-\frac{1}{12}\,i\,\text{Sin}[c]\right)\right.$$
$$\left.(2\,A\,\text{Cos}[c]-3\,i\,A\,\text{Sin}[c]+3\,B\,\text{Sin}[c])\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left((5\,A+3\,i\,B)\,\left(\frac{1}{2}\,d\,x\,\text{Cos}[c]+\frac{1}{2}\,i\,d\,x\,\text{Sin}[c]\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left((A+i\,B)\,\left(\frac{\text{Cos}[c]}{4}-\frac{1}{4}\,i\,\text{Sin}[c]\right)\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,\text{Sin}[2\,d\,x]\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left(\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}[c+d\,x]^3\,\text{Sec}\left[\frac{c}{2}\right]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\right.$$
$$\left(\frac{1}{2}\,i\,A\,\text{Cos}[c-d\,x]-\frac{1}{2}\,i\,A\,\text{Cos}[c+d\,x]-\frac{1}{2}\,A\,\text{Sin}[c-d\,x]+\frac{1}{2}\,A\,\text{Sin}[c+d\,x]\right)$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(6\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)+$$
$$\left(\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}\left[\frac{c}{2}\right]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\right.$$
$$\left(-\frac{7}{2}\,i\,A\,\text{Cos}[c-d\,x]+\frac{3}{2}\,B\,\text{Cos}[c-d\,x]+\frac{7}{2}\,i\,A\,\text{Cos}[c+d\,x]-\frac{3}{2}\,B\,\text{Cos}[c+d\,x]+\frac{7}{2}\,A\,\text{Sin}[c-d\,x]+\right.$$
$$\left.\left.\frac{3}{2}\,i\,B\,\text{Sin}[c-d\,x]-\frac{7}{2}\,A\,\text{Sin}[c+d\,x]-\frac{3}{2}\,i\,B\,\text{Sin}[c+d\,x]\right)\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(6\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])\right)$$

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

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

Optimal (type 3, 142 leaves, 4 steps):

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

Result (type 3, 956 leaves):

$$-\Big(\Big((2\,A+3\,\mathrm{i}\,B)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)\Big)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(A\,\mathrm{Cos}[c]+2\,\mathrm{i}\,B\,\mathrm{Cos}[c]+\mathrm{i}\,A\,\mathrm{Sin}[c]-2\,B\,\mathrm{Sin}[c])$$
$$(-\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[c]+\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[c])\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(A\,\mathrm{Cos}[c]+2\,\mathrm{i}\,B\,\mathrm{Cos}[c]+\mathrm{i}\,A\,\mathrm{Sin}[c]-2\,B\,\mathrm{Sin}[c])$$
$$\left(\frac{1}{2}\,\mathrm{Cos}[c]\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]+\frac{1}{2}\,\mathrm{i}\,\mathrm{Log}\big[\mathrm{Cos}[c+d\,x]^2\big]\,\mathrm{Sin}[c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((A+\mathrm{i}\,B)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]\,\left(\frac{1}{16}\,\mathrm{Cos}[2\,c]-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((-\mathrm{i}\,A+3\,B)\,\mathrm{Sec}[c+d\,x]\,\left(\frac{3}{4}\,d\,x\,\mathrm{Cos}[2\,c]+\frac{3}{4}\,\mathrm{i}\,d\,x\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{i}\,(2\,A+3\,\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[2\,d\,x]\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((-\mathrm{i}\,A+B)\,\mathrm{Sec}[c+d\,x]\,\left(\frac{1}{16}\,\mathrm{Cos}[2\,c]-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[4\,d\,x]$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{i}\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^2\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(-B\,\mathrm{Cos}[2\,c-d\,x]+B\,\mathrm{Cos}[2\,c+d\,x]-$$
$$\mathrm{i}\,B\,\mathrm{Sin}[2\,c-d\,x]+\mathrm{i}\,B\,\mathrm{Sin}[2\,c+d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(x\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(\mathrm{i}\,A-2\,B-A\,\mathrm{Tan}[c]-2\,\mathrm{i}\,B\,\mathrm{Tan}[c]+(A+2\,\mathrm{i}\,B)\,(-\mathrm{Cos}[2\,c]-\mathrm{i}\,\mathrm{Sin}[2\,c])\,\mathrm{Tan}[c])$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big((A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)$$

Problem 49: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 141 leaves, 5 steps):

$$-\frac{3\,(3\,A+\mathrm{i}\,B)\,x}{4\,a^2}-\frac{3\,(3\,A+\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{4\,a^2\,d}-\frac{(2\,\mathrm{i}\,A-B)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^2\,d}+\frac{(2\,A+\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{2\,a^2\,d\,(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x])}+\frac{(A+\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{4\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2}$$

Result (type 3, 960 leaves):

$$\Big(\big(-3\,\mathrm{i}\,A+2\,B\big)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(-2\,\mathrm{i}\,A\,\mathrm{Cos}[c]+B\,\mathrm{Cos}[c]+2\,A\,\mathrm{Sin}[c]+\mathrm{i}\,B\,\mathrm{Sin}[c])\,(-\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[c]+\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[c])\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(-2\,\mathrm{i}\,A\,\mathrm{Cos}[c]+B\,\mathrm{Cos}[c]+2\,A\,\mathrm{Sin}[c]+\mathrm{i}\,B\,\mathrm{Sin}[c])\,\left(\frac{1}{2}\,\mathrm{Cos}[c]\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]+\frac{1}{2}\,\mathrm{i}\,\mathrm{Log}\big[\mathrm{Sin}[c+d\,x]^2\big]\,\mathrm{Sin}[c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(x\,\mathrm{Sec}[c+d\,x]\,\big(-2\,A-\mathrm{i}\,B+2\,\mathrm{i}\,A\,\mathrm{Cot}[c]-B\,\mathrm{Cot}[c]+(-2\,\mathrm{i}\,A+B)\,\mathrm{Cot}[c]\,(\mathrm{Cos}[2\,c]+\mathrm{i}\,\mathrm{Sin}[2\,c])\big)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big((A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((-\mathrm{i}\,A+B)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]\,\left(\frac{1}{16}\,\mathrm{Cos}[2\,c]-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((3\,A+\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\,\left(-\frac{3}{4}\,d\,x\,\mathrm{Cos}[2\,c]-\frac{3}{4}\,\mathrm{i}\,d\,x\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)-$$
$$\Big((3\,A+2\,\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[2\,d\,x]\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((A+\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\,\left(-\frac{1}{16}\,\mathrm{Cos}[2\,c]+\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[4\,d\,x]\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\left(\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c-d\,x]-\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[2\,c+d\,x]-\frac{1}{2}\,A\,\mathrm{Sin}[2\,c-d\,x]+\frac{1}{2}\,A\,\mathrm{Sin}[2\,c+d\,x]\right)\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\Big)$$

Problem 50: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 170 leaves, 6 steps):

$$\frac{3 (5 i A-3 B) x}{4 a^2}+\frac{3 (5 i A-3 B) \text{Cot}[c+d x]}{4 a^2 d}-\frac{(2 A+i B) \text{Cot}[c+d x]^2}{a^2 d}-\frac{2 (2 A+i B) \text{Log}[\text{Sin}[c+d x]]}{a^2 d}+\frac{(5 A+3 i B) \text{Cot}[c+d x]^2}{4 a^2 d (1+i \text{Tan}[c+d x])}+\frac{(A+i B) \text{Cot}[c+d x]^2}{4 d (a+i a \text{Tan}[c+d x])^2}$$

Result (type 3, 1112 leaves):

$$-\left(\left(\left((4\,A+3\,\mathrm{i}\,B)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\right.\right.$$
$$\left.\left(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)\right)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(2\,A\,\mathrm{Cos}[c]+\mathrm{i}\,B\,\mathrm{Cos}[c]+2\,\mathrm{i}\,A\,\mathrm{Sin}[c]-B\,\mathrm{Sin}[c])$$
$$(2\,\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[c]-2\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[c])\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(2\,A\,\mathrm{Cos}[c]+\mathrm{i}\,B\,\mathrm{Cos}[c]+2\,\mathrm{i}\,A\,\mathrm{Sin}[c]-B\,\mathrm{Sin}[c])$$
$$\left(-\mathrm{Cos}[c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[c]\right)$$
$$(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+\Big(x\,\mathrm{Sec}[c+d\,x]$$
$$(4\,\mathrm{i}\,A-2\,B+4\,A\,\mathrm{Cot}[c]+2\,\mathrm{i}\,B\,\mathrm{Cot}[c]+(2\,A+\mathrm{i}\,B)\,\mathrm{Cot}[c]\,(-2\,\mathrm{Cos}[2\,c]-2\,\mathrm{i}\,\mathrm{Sin}[2\,c]))$$
$$(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\left((A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\left((A+\mathrm{i}\,B)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]\left(-\frac{1}{16}\mathrm{Cos}[2\,c]+\frac{1}{16}\mathrm{i}\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\left(\mathrm{Csc}[c+d\,x]^2\,\mathrm{Sec}[c+d\,x]\left(-\frac{1}{2}A\,\mathrm{Cos}[2\,c]-\frac{1}{2}\mathrm{i}\,A\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\left((5\,A+3\,\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\left(\frac{3}{4}\mathrm{i}\,d\,x\,\mathrm{Cos}[2\,c]-\frac{3}{4}d\,x\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\left(\mathrm{i}\,(4\,A+3\,\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[2\,d\,x]\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\left(4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\left((A+\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]\left(\frac{1}{16}\mathrm{i}\,\mathrm{Cos}[2\,c]+\frac{1}{16}\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2\,\mathrm{Sin}[4\,d\,x]\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)+$$
$$\Big(\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}[c+d\,x]\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^2$$
$$\left(A\,\mathrm{Cos}[2\,c-d\,x]+\frac{1}{2}\mathrm{i}\,B\,\mathrm{Cos}[2\,c-d\,x]-A\,\mathrm{Cos}[2\,c+d\,x]-\frac{1}{2}\mathrm{i}\,B\,\mathrm{Cos}[2\,c+d\,x]+\right.$$
$$\left.\mathrm{i}\,A\,\mathrm{Sin}[2\,c-d\,x]-\frac{1}{2}B\,\mathrm{Sin}[2\,c-d\,x]-\mathrm{i}\,A\,\mathrm{Sin}[2\,c+d\,x]+\frac{1}{2}B\,\mathrm{Sin}[2\,c+d\,x]\right)$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^2\right)$$

Problem 51: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 191 leaves, 5 steps):

$$-\frac{(7 A+25 i B) x}{8 a^3}-\frac{(i A-3 B) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{a^3 d}+\frac{(7 A+25 i B) \operatorname{Tan}[c+d x]}{8 a^3 d}+\frac{(i A-B) \operatorname{Tan}[c+d x]^4}{6 d (a+i a \operatorname{Tan}[c+d x])^3}+\frac{(5 A+11 i B) \operatorname{Tan}[c+d x]^3}{24 a d (a+i a \operatorname{Tan}[c+d x])^2}-\frac{(i A-3 B) \operatorname{Tan}[c+d x]^2}{2 d\left(a^3+i a^3 \operatorname{Tan}[c+d x]\right)}$$

Result (type 3, 1251 leaves):

$$\left((11 A+23 i B) \operatorname{Cos}[2 d x] \operatorname{Sec}[c+d x]^2\left(\frac{1}{16} i \operatorname{Cos}[c]-\frac{\operatorname{Sin}[c]}{16}\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((-5 i A+7 B) \operatorname{Cos}[4 d x] \operatorname{Sec}[c+d x]^2\left(\frac{\operatorname{Cos}[c]}{32}-\frac{1}{32} i \operatorname{Sin}[c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left(\operatorname{Sec}[c+d x]^2\left(-i A \operatorname{Cos}\left[\frac{3 c}{2}\right]+3 B \operatorname{Cos}\left[\frac{3 c}{2}\right]+A \operatorname{Sin}\left[\frac{3 c}{2}\right]+3 i B \operatorname{Sin}\left[\frac{3 c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{3 c}{2}\right] \operatorname{Log}[\operatorname{Cos}[c+d x]]+i \operatorname{Log}[\operatorname{Cos}[c+d x]] \operatorname{Sin}\left[\frac{3 c}{2}\right]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((A+i B) \operatorname{Cos}[6 d x] \operatorname{Sec}[c+d x]^2\left(\frac{1}{48} i \operatorname{Cos}[3 c]+\frac{1}{48} \operatorname{Sin}[3 c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((7 A+25 i B) \operatorname{Sec}[c+d x]^2\left(-\frac{1}{8} d x \operatorname{Cos}[3 c]-\frac{1}{8} i d x \operatorname{Sin}[3 c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((11 A+23 i B) \operatorname{Sec}[c+d x]^2\left(\frac{\operatorname{Cos}[c]}{16}+\frac{1}{16} i \operatorname{Sin}[c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 \operatorname{Sin}[2 d x] (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((5 A+7 i B) \operatorname{Sec}[c+d x]^2\left(-\frac{\operatorname{Cos}[c]}{32}+\frac{1}{32} i \operatorname{Sin}[c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 \operatorname{Sin}[4 d x] (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left((A+i B) \operatorname{Sec}[c+d x]^2\left(\frac{1}{48} \operatorname{Cos}[3 c]-\frac{1}{48} i \operatorname{Sin}[3 c]\right)(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 \operatorname{Sin}[6 d x] (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\left(\operatorname{Sec}[c+d x]^3 (\operatorname{Cos}[d x]+i \operatorname{Sin}[d x])^3 (-B \operatorname{Cos}[3 c-d x]+B \operatorname{Cos}[3 c+d x]-i B \operatorname{Sin}[3 c-d x]+i B \operatorname{Sin}[3 c+d x])(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(2 d\left(\operatorname{Cos}\left[\frac{c}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+i a \operatorname{Tan}[c+d x])^3\right)+$$

$$\frac{1}{\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}}\,x\,\text{Sec}[c+d\,x]^{2}\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}$$
$$\left(\frac{1}{2}\,A\,\text{Cos}[c]+\frac{3}{2}\,\dot{\imath}\,B\,\text{Cos}[c]-\frac{1}{2}\,A\,\text{Cos}[c]^{3}-\frac{3}{2}\,\dot{\imath}\,B\,\text{Cos}[c]^{3}+\dot{\imath}\,A\,\text{Sin}[c]-3\,B\,\text{Sin}[c]-\right.$$
$$2\,\dot{\imath}\,A\,\text{Cos}[c]^{2}\,\text{Sin}[c]+6\,B\,\text{Cos}[c]^{2}\,\text{Sin}[c]+3\,A\,\text{Cos}[c]\,\text{Sin}[c]^{2}+9\,\dot{\imath}\,B\,\text{Cos}[c]\,\text{Sin}[c]^{2}+$$
$$2\,\dot{\imath}\,A\,\text{Sin}[c]^{3}-6\,B\,\text{Sin}[c]^{3}-\frac{1}{2}\,A\,\text{Sin}[c]\,\text{Tan}[c]-\frac{3}{2}\,\dot{\imath}\,B\,\text{Sin}[c]\,\text{Tan}[c]-\frac{1}{2}\,A\,\text{Sin}[c]^{3}\,\text{Tan}[c]-$$
$$\left.\frac{3}{2}\,\dot{\imath}\,B\,\text{Sin}[c]^{3}\,\text{Tan}[c]+\dot{\imath}\,\left(A+3\,\dot{\imath}\,B\right)\,\left(\text{Cos}[3\,c]+\dot{\imath}\,\text{Sin}[3\,c]\right)\,\text{Tan}[c]\right)\,\left(A+B\,\text{Tan}[c+d\,x]\right)$$

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

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

Optimal (type 3, 183 leaves, 6 steps):

$$-\frac{\left(25\,A+7\,\dot{\imath}\,B\right)\,x}{8\,a^{3}}-\frac{\left(25\,A+7\,\dot{\imath}\,B\right)\,\text{Cot}[c+d\,x]}{8\,a^{3}\,d}-\frac{\left(3\,\dot{\imath}\,A-B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{a^{3}\,d}+$$
$$\frac{\left(A+\dot{\imath}\,B\right)\,\text{Cot}[c+d\,x]}{6\,d\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}}+\frac{\left(11\,A+5\,\dot{\imath}\,B\right)\,\text{Cot}[c+d\,x]}{24\,a\,d\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{2}}+\frac{\left(3\,A+\dot{\imath}\,B\right)\,\text{Cot}[c+d\,x]}{2\,d\,\left(a^{3}+\dot{\imath}\,a^{3}\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 1282 leaves):

$$\left(\left(-7\,\dot{\imath}\,A+5\,B\right)\,\text{Cos}[4\,d\,x]\,\text{Sec}[c+d\,x]^{2}\,\left(\frac{\text{Cos}[c]}{32}-\frac{1}{32}\,\dot{\imath}\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}\right.$$
$$\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}\right)+$$
$$\left(\left(-23\,\dot{\imath}\,A+11\,B\right)\,\text{Cos}[2\,d\,x]\,\text{Sec}[c+d\,x]^{2}\,\left(\frac{\text{Cos}[c]}{16}+\frac{1}{16}\,\dot{\imath}\,\text{Sin}[c]\right)\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}\right.$$
$$\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}\right)+$$
$$\left(\text{Sec}[c+d\,x]^{2}\,\left(-3\,\dot{\imath}\,A\,\text{Cos}\left[\frac{3\,c}{2}\right]+B\,\text{Cos}\left[\frac{3\,c}{2}\right]+3\,A\,\text{Sin}\left[\frac{3\,c}{2}\right]+\dot{\imath}\,B\,\text{Sin}\left[\frac{3\,c}{2}\right]\right)\right.$$
$$\left(-\dot{\imath}\,\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Cos}\left[\frac{3\,c}{2}\right]+\text{ArcTan}[\text{Tan}[d\,x]]\,\text{Sin}\left[\frac{3\,c}{2}\right]\right)\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}$$
$$\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}\right)+$$
$$\left(\text{Sec}[c+d\,x]^{2}\,\left(-3\,\dot{\imath}\,A\,\text{Cos}\left[\frac{3\,c}{2}\right]+B\,\text{Cos}\left[\frac{3\,c}{2}\right]+3\,A\,\text{Sin}\left[\frac{3\,c}{2}\right]+\dot{\imath}\,B\,\text{Sin}\left[\frac{3\,c}{2}\right]\right)\right.$$
$$\left(\frac{1}{2}\,\text{Cos}\left[\frac{3\,c}{2}\right]\,\text{Log}\left[\text{Sin}[c+d\,x]^{2}\right]+\frac{1}{2}\,\dot{\imath}\,\text{Log}\left[\text{Sin}[c+d\,x]^{2}\right]\,\text{Sin}\left[\frac{3\,c}{2}\right]\right)\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}$$
$$\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}\right)+$$
$$\left(x\,\text{Sec}[c+d\,x]^{2}\,\left(-6\,A\,\text{Cos}[c]-2\,\dot{\imath}\,B\,\text{Cos}[c]+3\,\dot{\imath}\,A\,\text{Cos}[c]\,\text{Cot}[c]-B\,\text{Cos}[c]\,\text{Cot}[c]-3\,\dot{\imath}\,A\,\text{Sin}[c]+\right.\right.$$
$$\left.B\,\text{Sin}[c]+\left(-3\,\dot{\imath}\,A+B\right)\,\text{Cot}[c]\,\left(\text{Cos}[3\,c]+\dot{\imath}\,\text{Sin}[3\,c]\right)\right)\,\left(\text{Cos}[d\,x]+\dot{\imath}\,\text{Sin}[d\,x]\right)^{3}$$
$$\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+\dot{\imath}\,a\,\text{Tan}[c+d\,x]\right)^{3}\right)+$$

$$\left(\left(-\mathrm{i}\,A+B\right)\,\mathrm{Cos}[6\,d\,x]\,\mathrm{Sec}[c+d\,x]^2\left(\frac{1}{48}\,\mathrm{Cos}[3\,c]-\frac{1}{48}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(25\,A+7\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\left(-\frac{1}{8}\,d\,x\,\mathrm{Cos}[3\,c]-\frac{1}{8}\,\mathrm{i}\,d\,x\,\mathrm{Sin}[3\,c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(23\,A+11\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\left(-\frac{\mathrm{Cos}[c]}{16}-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\mathrm{Sin}[2\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(7\,A+5\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\left(-\frac{\mathrm{Cos}[c]}{32}+\frac{1}{32}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\mathrm{Sin}[4\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(A+\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\left(-\frac{1}{48}\,\mathrm{Cos}[3\,c]+\frac{1}{48}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\mathrm{Sin}[6\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+d\,x]^2\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left(\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[3\,c-d\,x]-\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[3\,c+d\,x]-\frac{1}{2}\,A\,\mathrm{Sin}[3\,c-d\,x]+\frac{1}{2}\,A\,\mathrm{Sin}[3\,c+d\,x]\right)$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(2\,d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)$$

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

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

Optimal (type 3, 216 leaves, 7 steps):

$$\frac{5\left(11\,\mathrm{i}\,A-5\,B\right)x}{8\,a^3}+\frac{5\left(11\,\mathrm{i}\,A-5\,B\right)\mathrm{Cot}[c+d\,x]}{8\,a^3\,d}-\frac{\left(7\,A+3\,\mathrm{i}\,B\right)\mathrm{Cot}[c+d\,x]^2}{2\,a^3\,d}-$$
$$\frac{\left(7\,A+3\,\mathrm{i}\,B\right)\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^3\,d}+\frac{\left(A+\mathrm{i}\,B\right)\mathrm{Cot}[c+d\,x]^2}{6\,d\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3}+$$
$$\frac{\left(13\,A+7\,\mathrm{i}\,B\right)\mathrm{Cot}[c+d\,x]^2}{24\,a\,d\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^2}+\frac{5\left(11\,A+5\,\mathrm{i}\,B\right)\mathrm{Cot}[c+d\,x]^2}{24\,d\left(a^3+\mathrm{i}\,a^3\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 1448 leaves):

$$\left(\left(9\,A+7\,\mathrm{i}\,B\right)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]^2\left(-\frac{\mathrm{Cos}[c]}{32}+\frac{1}{32}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\left(39\,A+23\,\mathrm{i}\,B\right)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]^2\,\left(-\frac{\mathrm{Cos}[c]}{16}-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[c+d\,x]^2\,\left(7\,A\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]+3\,\mathrm{i}\,B\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]+7\,\mathrm{i}\,A\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]-3\,B\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]\right)\right.$$
$$\left(\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]-\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[c+d\,x]^2\,\left(7\,A\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]+3\,\mathrm{i}\,B\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]+7\,\mathrm{i}\,A\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]-3\,B\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]\right)\right.$$
$$\left(-\frac{1}{2}\,\mathrm{Cos}\left[\frac{3\,c}{2}\right]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-\frac{1}{2}\,\mathrm{i}\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}\left[\frac{3\,c}{2}\right]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(x\,\mathrm{Sec}[c+d\,x]^2\,\left(14\,\mathrm{i}\,A\,\mathrm{Cos}[c]-6\,B\,\mathrm{Cos}[c]+7\,A\,\mathrm{Cos}[c]\,\mathrm{Cot}[c]+3\,\mathrm{i}\,B\,\mathrm{Cos}[c]\,\mathrm{Cot}[c]-7\,A\,\mathrm{Sin}[c]-\right.\right.$$
$$\left.3\,\mathrm{i}\,B\,\mathrm{Sin}[c]+\left(7\,A+3\,\mathrm{i}\,B\right)\,\mathrm{Cot}[c]\,\left(-\mathrm{Cos}[3\,c]-\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(A+\mathrm{i}\,B\right)\,\mathrm{Cos}[6\,d\,x]\,\mathrm{Sec}[c+d\,x]^2\,\left(-\frac{1}{48}\,\mathrm{Cos}[3\,c]+\frac{1}{48}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\mathrm{Csc}[c+d\,x]^2\,\mathrm{Sec}[c+d\,x]^2\,\left(-\frac{1}{2}\,A\,\mathrm{Cos}[3\,c]-\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Sin}[3\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(11\,A+5\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\,\left(\frac{5}{8}\,\mathrm{i}\,d\,x\,\mathrm{Cos}[3\,c]-\frac{5}{8}\,d\,x\,\mathrm{Sin}[3\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(39\,A+23\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\,\left(\frac{1}{16}\,\mathrm{i}\,\mathrm{Cos}[c]-\frac{\mathrm{Sin}[c]}{16}\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\,\mathrm{Sin}[2\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(9\,A+7\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\,\left(\frac{1}{32}\,\mathrm{i}\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{32}\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\,\mathrm{Sin}[4\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\left(A+\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^2\,\left(\frac{1}{48}\,\mathrm{i}\,\mathrm{Cos}[3\,c]+\frac{1}{48}\,\mathrm{Sin}[3\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\,\mathrm{Sin}[6\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3\right)+$$
$$\left(\mathrm{Csc}\left[\frac{c}{2}\right]\,\mathrm{Csc}[c+d\,x]\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}[c+d\,x]^2\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^3\right.$$
$$\left(\frac{3}{2}\,A\,\mathrm{Cos}[3\,c-d\,x]+\frac{1}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[3\,c-d\,x]-\frac{3}{2}\,A\,\mathrm{Cos}[3\,c+d\,x]-\frac{1}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[3\,c+d\,x]+\right.$$

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

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

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

Optimal (type 3, 220 leaves, 7 steps):

$$-\frac{5\,(13\,A+3\,i\,B)\,x}{16\,a^4}-\frac{5\,(13\,A+3\,i\,B)\,\mathrm{Cot}[c+d\,x]}{16\,a^4\,d}-\frac{(4\,i\,A-B)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^4\,d}+\frac{(31\,A+9\,i\,B)\,\mathrm{Cot}[c+d\,x]}{48\,a^4\,d\,(1+i\,\mathrm{Tan}[c+d\,x])^2}+\frac{(4\,A+i\,B)\,\mathrm{Cot}[c+d\,x]}{2\,a^4\,d\,(1+i\,\mathrm{Tan}[c+d\,x])}+\frac{(A+i\,B)\,\mathrm{Cot}[c+d\,x]}{8\,d\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4}+\frac{(7\,A+3\,i\,B)\,\mathrm{Cot}[c+d\,x]}{24\,a\,d\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^3}$$

Result (type 3, 1466 leaves):

$$\Big((-15\,i\,A+8\,B)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\left(32\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\left((-4\,i\,A+3\,B)\,\mathrm{Cos}[6\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\left(\frac{1}{48}\,\mathrm{Cos}[2\,c]-\frac{1}{48}\,i\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\left((-36\,i\,A+13\,B)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\left(\frac{1}{16}\,\mathrm{Cos}[2\,c]+\frac{1}{16}\,i\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\Big(\mathrm{Sec}[c+d\,x]^3\,(-4\,i\,A\,\mathrm{Cos}[2\,c]+B\,\mathrm{Cos}[2\,c]+4\,A\,\mathrm{Sin}[2\,c]+i\,B\,\mathrm{Sin}[2\,c])$$
$$(-i\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[2\,c]+\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[2\,c])\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\Big(\mathrm{Sec}[c+d\,x]^3\,(-4\,i\,A\,\mathrm{Cos}[2\,c]+B\,\mathrm{Cos}[2\,c]+4\,A\,\mathrm{Sin}[2\,c]+i\,B\,\mathrm{Sin}[2\,c])$$
$$\left(\frac{1}{2}\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]+\frac{1}{2}\,i\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]\right)(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\Big(x\,\mathrm{Sec}[c+d\,x]^3\,\big(-12\,A\,\mathrm{Cos}[c]^2-3\,i\,B\,\mathrm{Cos}[c]^2+4\,i\,A\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]-B\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]-$$
$$12\,i\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+3\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]+4\,A\,\mathrm{Sin}[c]^2+i\,B\,\mathrm{Sin}[c]^2+$$
$$(-4\,i\,A+B)\,\mathrm{Cot}[c]\,(\mathrm{Cos}[4\,c]+i\,\mathrm{Sin}[4\,c])\big)\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\left((A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^4\right)+$$
$$\Big((-i\,A+B)\,\mathrm{Cos}[8\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\left(\frac{1}{128}\,\mathrm{Cos}[4\,c]-\frac{1}{128}\,i\,\mathrm{Sin}[4\,c]\right)(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^4$$

$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(\left(13\,A+3\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{5}{16}\,d\,x\,\mathrm{Cos}[4\,c]-\frac{5}{16}\,\mathrm{i}\,d\,x\,\mathrm{Sin}[4\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(\left(36\,A+13\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{1}{16}\,\mathrm{Cos}[2\,c]-\frac{1}{16}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\right.$$
$$\left.\mathrm{Sin}[2\,d\,x]\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)-$$

$$\left(\left(15\,A+8\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[4\,d\,x]\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(32\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(\left(4\,A+3\,\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,\mathrm{Cos}[2\,c]+\frac{1}{48}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[6\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(\left(A+\mathrm{i}\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{1}{128}\,\mathrm{Cos}[4\,c]+\frac{1}{128}\,\mathrm{i}\,\mathrm{Sin}[4\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[8\,d\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

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

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

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

Optimal (type 3, 255 leaves, 8 steps):

$$\frac{5\,\left(35\,\mathrm{i}\,A-13\,B\right)\,x}{16\,a^4}+\frac{5\,\left(35\,\mathrm{i}\,A-13\,B\right)\,\mathrm{Cot}[c+d\,x]}{16\,a^4\,d}-\frac{\left(11\,A+4\,\mathrm{i}\,B\right)\,\mathrm{Cot}[c+d\,x]^2}{2\,a^4\,d}-$$
$$\frac{\left(11\,A+4\,\mathrm{i}\,B\right)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^4\,d}+\frac{\left(43\,A+17\,\mathrm{i}\,B\right)\,\mathrm{Cot}[c+d\,x]^2}{48\,a^4\,d\,\left(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right)^2}+$$
$$\frac{5\,\left(35\,A+13\,\mathrm{i}\,B\right)\,\mathrm{Cot}[c+d\,x]^2}{48\,a^4\,d\,\left(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right)}+\frac{\left(A+\mathrm{i}\,B\right)\,\mathrm{Cot}[c+d\,x]^2}{8\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4}+\frac{\left(2\,A+\mathrm{i}\,B\right)\,\mathrm{Cot}[c+d\,x]^2}{6\,a\,d\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^3}$$

Result (type 3, 1625 leaves):

$$-\left(\left(3\,\left(8\,A+5\,\mathrm{i}\,B\right)\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\right.$$
$$\left.\left(32\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)\right)+$$

$$\left(\left(5\,A+4\,\mathrm{i}\,B\right)\,\mathrm{Cos}[6\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{1}{48}\,\mathrm{Cos}[2\,c]+\frac{1}{48}\,\mathrm{i}\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x]\right)^4\right.$$

$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\left(25\,A+12\,i\,B\right)\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{3}{16}\,\mathrm{Cos}[2\,c]-\frac{3}{16}\,i\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\mathrm{Sec}[c+d\,x]^3\,\left(11\,A\,\mathrm{Cos}[2\,c]+4\,i\,B\,\mathrm{Cos}[2\,c]+11\,i\,A\,\mathrm{Sin}[2\,c]-4\,B\,\mathrm{Sin}[2\,c]\right)$$
$$\left(i\,\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Cos}[2\,c]-\mathrm{ArcTan}[\mathrm{Tan}[d\,x]]\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\mathrm{Sec}[c+d\,x]^3\,\left(11\,A\,\mathrm{Cos}[2\,c]+4\,i\,B\,\mathrm{Cos}[2\,c]+11\,i\,A\,\mathrm{Sin}[2\,c]-4\,B\,\mathrm{Sin}[2\,c]\right)$$
$$\left(-\frac{1}{2}\,\mathrm{Cos}[2\,c]\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]-\frac{1}{2}\,i\,\mathrm{Log}\left[\mathrm{Sin}[c+d\,x]^2\right]\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(x\,\mathrm{Sec}[c+d\,x]^3\,\Big(33\,i\,A\,\mathrm{Cos}[c]^2-12\,B\,\mathrm{Cos}[c]^2+11\,A\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]+4\,i\,B\,\mathrm{Cos}[c]^2\,\mathrm{Cot}[c]-$$
$$33\,A\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-12\,i\,B\,\mathrm{Cos}[c]\,\mathrm{Sin}[c]-11\,i\,A\,\mathrm{Sin}[c]^2+4\,B\,\mathrm{Sin}[c]^2+$$
$$\left(11\,A+4\,i\,B\right)\,\mathrm{Cot}[c]\,\left(-\mathrm{Cos}[4\,c]-i\,\mathrm{Sin}[4\,c]\right)\Big)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\left(A+i\,B\right)\,\mathrm{Cos}[8\,d\,x]\,\mathrm{Sec}[c+d\,x]^3\,\left(-\frac{1}{128}\,\mathrm{Cos}[4\,c]+\frac{1}{128}\,i\,\mathrm{Sin}[4\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

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

$$\Big(\left(35\,A+13\,i\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\frac{5}{16}\,i\,d\,x\,\mathrm{Cos}[4\,c]-\frac{5}{16}\,d\,x\,\mathrm{Sin}[4\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\left(25\,A+12\,i\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\frac{3}{16}\,i\,\mathrm{Cos}[2\,c]-\frac{3}{16}\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4$$
$$\mathrm{Sin}[2\,d\,x]\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(3\,i\,\left(8\,A+5\,i\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[4\,d\,x]\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(32\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\left(5\,A+4\,i\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\frac{1}{48}\,i\,\mathrm{Cos}[2\,c]+\frac{1}{48}\,\mathrm{Sin}[2\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[6\,d\,x]$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\Big(\left(A+i\,B\right)\,\mathrm{Sec}[c+d\,x]^3\,\left(\frac{1}{128}\,i\,\mathrm{Cos}[4\,c]+\frac{1}{128}\,\mathrm{Sin}[4\,c]\right)\,\left(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x]\right)^4\,\mathrm{Sin}[8\,d\,x]$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Big)\Big/\left(d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+i\,a\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

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

Problem 71: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 192 leaves):

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

Problem 72: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 123 leaves, 7 steps):

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

Result (type 3, 293 leaves):

$$\frac{1}{8 d}\left(-8 A \operatorname{Cot}[c+d x]+e^{-i(c+d x)} \sqrt{1+e^{2 i(c+d x)}}\left(8(i A+B) \operatorname{ArcSinh}\left[e^{i(c+d x)}\right]+\sqrt{2}(i A+2 B)\left(\operatorname{Log}\left[\left(-1+e^{i(c+d x)}\right)^2\right]-\operatorname{Log}\left[\left(1+e^{i(c+d x)}\right)^2\right]+\operatorname{Log}\left[3+3 e^{2 i(c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i(c+d x)}}-2 e^{i(c+d x)}\left(1+\sqrt{2} \sqrt{1+e^{2 i(c+d x)}}\right)\right]-\operatorname{Log}\left[3+3 e^{2 i(c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i(c+d x)}}+2 e^{i(c+d x)}\left(1+\sqrt{2} \sqrt{1+e^{2 i(c+d x)}}\right)\right]\right)\right)\right) \sqrt{a+i a \operatorname{Tan}[c+d x]}$$

Problem 73: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 169 leaves, 8 steps):

$$\frac{\sqrt{a}(7 A-4 i B) \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 d}-\frac{\sqrt{2} \sqrt{a}(A-i B) \operatorname{ArcTanh}\left[\frac{\sqrt{a+i a \operatorname{Tan}[c+d x]}}{\sqrt{2} \sqrt{a}}\right]}{d}-\frac{(i A+4 B) \operatorname{Cot}[c+d x] \sqrt{a+i a \operatorname{Tan}[c+d x]}}{4 d}-\frac{A \operatorname{Cot}[c+d x]^2 \sqrt{a+i a \operatorname{Tan}[c+d x]}}{2 d}$$

Result (type 3, 388 leaves):

$$\left(\left(-\left(\left(2\left(16 \sqrt{2}(A-i B) \operatorname{ArcSinh}\left[e^{i(c+d x)}\right]+(7 A-4 i B)\left(\operatorname{Log}\left[\left(-1+e^{i(c+d x)}\right)^2\right]-\operatorname{Log}\left[\left(1+e^{i(c+d x)}\right)^2\right]+\operatorname{Log}\left[3+3 e^{2 i(c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i(c+d x)}}-2 e^{i(c+d x)}\left(1+\sqrt{2} \sqrt{1+e^{2 i(c+d x)}}\right)\right]-\operatorname{Log}\left[3+3 e^{2 i(c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i(c+d x)}}+2 e^{i(c+d x)}\left(1+\sqrt{2} \sqrt{1+e^{2 i(c+d x)}}\right)\right]\right)\right)\right) \Big/ \left(\sqrt{\frac{e^{i(c+d x)}}{1+e^{2 i(c+d x)}}} \sqrt{1+e^{2 i(c+d x)}}\right)\right)-\frac{8 \operatorname{Csc}[c+d x](2 A \operatorname{Csc}[c+d x]+(i A+4 B) \operatorname{Sec}[c+d x])}{\operatorname{Sec}[c+d x]^{3/2}}\right) \sqrt{a+i a \operatorname{Tan}[c+d x]}\,(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(32 d \operatorname{Sec}[c+d x]^{3/2}(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)$$

Problem 78: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 113 leaves, 7 steps):

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

Result (type 3, 287 leaves):

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

Problem 79: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 125 leaves, 7 steps):

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

Result (type 3, 496 leaves):

$$\Bigg(e^{-i c}\sqrt{e^{i d x}}\ \Bigg(16\ (i A+B)\ \text{ArcSinh}\left[e^{i (c+d x)}\right]+\sqrt{2}\ (3 i A+2 B)\ \Bigg(\text{Log}\left[\left(-1+e^{i (c+d x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i (c+d x)}\right)^2\right]+\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]-\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]\Bigg)\Bigg)\ (a+i a \text{Tan}[c+d x])^{3/2}\ (A+B \text{Tan}[c+d x])\Bigg)\Bigg/\left(4\sqrt{2}\ d\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\ \sqrt{1+e^{2 i (c+d x)}}\ \text{Sec}[c+d x]^{5/2}\ (\text{Cos}[d x]+i \text{Sin}[d x])^{3/2}\ (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+\Big(\text{Cos}[c+d x]^2\ \big(\text{Cot}[c]\ (-A \text{Cos}[c]+i A \text{Sin}[c])+A \text{Csc}[c]\ \text{Csc}[c+d x]\ (\text{Cos}[c]-i \text{Sin}[c])\ \text{Sin}[d x]\big)\ (a+i a \text{Tan}[c+d x])^{3/2}\ (A+B \text{Tan}[c+d x])\Big)\Big/\Big(d\ (\text{Cos}[d x]+i \text{Sin}[d x])\ (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)$$

Problem 80: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 171 leaves, 8 steps):

$$\frac{a^{3/2}\ (11 A-12 i B)\ \text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 d}-\frac{2\sqrt{2}\ a^{3/2}\ (A-i B)\ \text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{2}\sqrt{a}}\right]}{d}-\frac{a\ (5 i A+4 B)\ \text{Cot}[c+d x]\ \sqrt{a+i a \text{Tan}[c+d x]}}{4 d}-\frac{a A \text{Cot}[c+d x]^2\sqrt{a+i a \text{Tan}[c+d x]}}{2 d}$$

Result (type 3, 565 leaves):

$$-\Bigg(\Bigg(e^{-i c}\sqrt{e^{i d x}}\Big(64\,(A-i B)\,\text{ArcSinh}\big[e^{i (c+d x)}\big]+\sqrt{2}\,(11 A-12 i B)\Big(\text{Log}\big[(-1+e^{i (c+d x)})^2\big]-\text{Log}\big[(1+e^{i (c+d x)})^2\big]+\text{Log}\Big[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)}\Big(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\Big)\Big]-\text{Log}\Big[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)}\Big(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\Big)\Big]\Big)\Big)(a+i a \text{Tan}[c+d x])^{3/2}(A+B \text{Tan}[c+d x])\Bigg)\Bigg/\Bigg(16\sqrt{2}\,d\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\sqrt{1+e^{2 i (c+d x)}}\,\text{Sec}[c+d x]^{5/2}(\text{Cos}[d x]+i \text{Sin}[d x])^{3/2}(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Bigg)\Bigg)+$$

$$\Bigg(\text{Cos}[c+d x]^2\Big(\text{Csc}[c+d x]^2\Big(-\frac{1}{2} A \text{Cos}[c]+\frac{1}{2} i A \text{Sin}[c]\Big)-i \text{Csc}[c]\Big(\frac{\text{Cos}[c]}{4}-\frac{1}{4} i \text{Sin}[c]\Big)(5 A \text{Cos}[c]-4 i B \text{Cos}[c]+2 i A \text{Sin}[c])+\text{Csc}[c]\,\text{Csc}[c+d x]\Big(\frac{\text{Cos}[c]}{4}-\frac{1}{4} i \text{Sin}[c]\Big)(5 i A \text{Sin}[d x]+4 B \text{Sin}[d x])\Big)(a+i a \text{Tan}[c+d x])^{3/2}(A+B \text{Tan}[c+d x])\Bigg)\Bigg/\Big(d\,(\text{Cos}[d x]+i \text{Sin}[d x])(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)$$

Problem 81: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 213 leaves, 9 steps):

$$\frac{a^{3/2}(23 i A+22 B)\,\text{ArcTanh}\Big[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{a}}\Big]}{8 d}-\frac{2\sqrt{2}\,a^{3/2}(i A+B)\,\text{ArcTanh}\Big[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{2}\sqrt{a}}\Big]}{d}+\frac{a(9 A-10 i B)\,\text{Cot}[c+d x]\sqrt{a+i a \text{Tan}[c+d x]}}{8 d}-\frac{a(7 i A+6 B)\,\text{Cot}[c+d x]^2\sqrt{a+i a \text{Tan}[c+d x]}}{12 d}-\frac{a A\,\text{Cot}[c+d x]^3\sqrt{a+i a \text{Tan}[c+d x]}}{3 d}$$

Result (type 3, 613 leaves):

$$-\left(\left(i\, e^{-i c}\sqrt{e^{i d x}}\left(128\,(A-i B)\,\text{ArcSinh}\left[e^{i (c+d x)}\right]+\sqrt{2}\,(23 A-22 i B)\left(\text{Log}\left[\left(-1+e^{i (c+d x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i (c+d x)}\right)^2\right]+\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]-\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]\right)\right)(a+i a\,\text{Tan}[c+d x])^{3/2}(A+B\,\text{Tan}[c+d x])\right)\bigg/\left(32\sqrt{2}\, d\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\sqrt{1+e^{2 i (c+d x)}}\,\text{Sec}[c+d x]^{5/2}(\text{Cos}[d x]+i\,\text{Sin}[d x])^{3/2}(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)\right)+$$

$$\frac{1}{d\,(\text{Cos}[d x]+i\,\text{Sin}[d x])\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])}\text{Cos}[c+d x]^2\left((7 A-6 i B)\,\text{Csc}[c]\left(\frac{\text{Cos}[c]}{24}-\frac{1}{24} i\,\text{Sin}[c]\right)(5\,\text{Cos}[c]+2 i\,\text{Sin}[c])+\text{Csc}[c]\,\text{Csc}[c+d x]^2\left(\frac{\text{Cos}[c]}{12}-\frac{1}{12} i\,\text{Sin}[c]\right)(-4 A\,\text{Cos}[c]-7 i A\,\text{Sin}[c]-6 B\,\text{Sin}[c])+A\,\text{Csc}[c]\,\text{Csc}[c+d x]^3\left(\frac{\text{Cos}[c]}{3}-\frac{1}{3} i\,\text{Sin}[c]\right)\text{Sin}[d x]+\text{Csc}[c]\,\text{Csc}[c+d x]\left(-\frac{5\,\text{Cos}[c]}{24}+\frac{5}{24} i\,\text{Sin}[c]\right)(7 A\,\text{Sin}[d x]-6 i B\,\text{Sin}[d x])\right)(a+i a\,\text{Tan}[c+d x])^{3/2}(A+B\,\text{Tan}[c+d x])$$

Problem 85: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 147 leaves, 8 steps):

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

Result (type 3, 429 leaves):

$$\left(e^{-2ic}\sqrt{e^{idx}}\left(8(A-iB)\text{ArcSinh}\left[e^{i(c+dx)}\right]+\sqrt{2}A\left(\text{Log}\left[1-e^{i(c+dx)}\right]-\text{Log}\left[1+e^{i(c+dx)}\right]+\text{Log}\left[1-e^{i(c+dx)}+\sqrt{2}\sqrt{1+e^{2i(c+dx)}}\right]-\text{Log}\left[1+e^{i(c+dx)}+\sqrt{2}\sqrt{1+e^{2i(c+dx)}}\right]\right)\right)(a+ia\text{Tan}[c+dx])^{5/2}(A+B\text{Tan}[c+dx])\right)\Big/\left(\sqrt{2}d\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\sqrt{1+e^{2i(c+dx)}}\text{Sec}[c+dx]^{7/2}(\text{Cos}[dx]+i\text{Sin}[dx])^{5/2}(A\text{Cos}[c+dx]+B\text{Sin}[c+dx])\right)+$$

$$\left(\text{Cos}[c+dx]^3\left((3A-8iB)\left(-\frac{2}{3}\text{Cos}[2c]+\frac{2}{3}i\text{Sin}[2c]\right)+\text{Sec}[c+dx]\left(-\frac{2}{3}iB\text{Cos}[3c+dx]-\frac{2}{3}B\text{Sin}[3c+dx]\right)\right)(a+ia\text{Tan}[c+dx])^{5/2}(A+B\text{Tan}[c+dx])\right)\Big/\left(d(\text{Cos}[dx]+i\text{Sin}[dx])^2(A\text{Cos}[c+dx]+B\text{Sin}[c+dx])\right)$$

Problem 86: Result more than twice size of optimal antiderivative.

$$\int\text{Cot}[c+dx]^2(a+ia\text{Tan}[c+dx])^{5/2}(A+B\text{Tan}[c+dx])\,dx$$

Optimal (type 3, 158 leaves, 8 steps):

$$-\frac{a^{5/2}(5iA+2B)\text{ArcTanh}\left[\frac{\sqrt{a+ia\text{Tan}[c+dx]}}{\sqrt{a}}\right]}{d}+\frac{4\sqrt{2}a^{5/2}(iA+B)\text{ArcTanh}\left[\frac{\sqrt{a+ia\text{Tan}[c+dx]}}{\sqrt{2}\sqrt{a}}\right]}{d}+\frac{a^2(iA-2B)\sqrt{a+ia\text{Tan}[c+dx]}}{d}-\frac{aA\text{Cot}[c+dx](a+ia\text{Tan}[c+dx])^{3/2}}{d}$$

Result (type 3, 512 leaves):

$$\left(e^{-2\,i\,c}\sqrt{e^{i\,d\,x}}\left(32\,(i\,A+B)\,\text{ArcSinh}\left[e^{i\,(c+d\,x)}\right]+\sqrt{2}\,(5\,i\,A+2\,B)\left(\text{Log}\left[\left(-1+e^{i\,(c+d\,x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i\,(c+d\,x)}\right)^2\right]+\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}-2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]-\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}+2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]\right)\right)(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Bigg/\left(4\sqrt{2}\,d\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Sec}[c+d\,x]^{7/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{5/2}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$

$$\Big(\text{Cos}[c+d\,x]^3\,\big(\text{Csc}[c]\,(A\,\text{Cos}[c]+2\,B\,\text{Sin}[c])\,(-\text{Cos}[2\,c]+i\,\text{Sin}[2\,c])+A\,\text{Csc}[c]\,\text{Csc}[c+d\,x]\,(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])\,\text{Sin}[d\,x]\big)\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 87: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 173 leaves, 8 steps):

$$\frac{a^{5/2}\,(23\,A-20\,i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,d}-\frac{4\sqrt{2}\,a^{5/2}\,(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{2}\sqrt{a}}\right]}{d}-\frac{a^2\,(7\,i\,A+4\,B)\,\text{Cot}[c+d\,x]\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{4\,d}-\frac{a\,A\,\text{Cot}[c+d\,x]^2\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}{2\,d}$$

Result (type 3, 577 leaves):

$$-\left(\left(e^{-2 i c}\sqrt{e^{i d x}}\left(128\,(A-i B)\,\text{ArcSinh}\left[e^{i (c+d x)}\right]+\sqrt{2}\,(23 A-20 i B)\left(\text{Log}\left[\left(-1+e^{i (c+d x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i (c+d x)}\right)^2\right]+\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]-\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]\right)\right)(a+i a\,\text{Tan}[c+d x])^{5/2}\,(A+B\,\text{Tan}[c+d x])\right)\Big/\left(16\sqrt{2}\,d\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\sqrt{1+e^{2 i (c+d x)}}\,\text{Sec}[c+d x]^{7/2}\,(\text{Cos}[d x]+i\,\text{Sin}[d x])^{5/2}\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)\right)+$$

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

Problem 88: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^4\,(a+i a\,\text{Tan}[c+d x])^{5/2}\,(A+B\,\text{Tan}[c+d x])\,dx$$

Optimal (type 3, 217 leaves, 9 steps):

$$\frac{a^{5/2}\,(45 i A+46 B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i a\,\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{8 d}-\frac{4\sqrt{2}\,a^{5/2}\,(i A+B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i a\,\text{Tan}[c+d x]}}{\sqrt{2}\sqrt{a}}\right]}{d}+\frac{a^2\,(19 A-18 i B)\,\text{Cot}[c+d x]\sqrt{a+i a\,\text{Tan}[c+d x]}}{8 d}-\frac{a^2\,(3 i A+2 B)\,\text{Cot}[c+d x]^2\sqrt{a+i a\,\text{Tan}[c+d x]}}{4 d}-\frac{a A\,\text{Cot}[c+d x]^3\,(a+i a\,\text{Tan}[c+d x])^{3/2}}{3 d}$$

Result (type 3, 634 leaves):

$$-\left(\left(i\, e^{-2 i c}\sqrt{e^{i d x}}\left(256\,(A-i B)\,\text{ArcSinh}\left[e^{i (c+d x)}\right]+\sqrt{2}\,(45 A-46 i B)\left(\text{Log}\left[\left(-1+e^{i (c+d x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i (c+d x)}\right)^2\right]+\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]-\text{Log}\left[3+3 e^{2 i (c+d x)}+2\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)}\left(1+\sqrt{2}\sqrt{1+e^{2 i (c+d x)}}\right)\right]\right)\right)(a+i a\,\text{Tan}[c+d x])^{5/2}(A+B\,\text{Tan}[c+d x])\right)\Bigg/\left(32\sqrt{2}\,d\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\sqrt{1+e^{2 i (c+d x)}}\,\text{Sec}[c+d x]^{7/2}(\text{Cos}[d x]+i\,\text{Sin}[d x])^{5/2}(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)\right)+$$

$$\frac{1}{d\,(\text{Cos}[d x]+i\,\text{Sin}[d x])^2\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])}\text{Cos}[c+d x]^3\left(\text{Csc}[c]\,(65 A\,\text{Cos}[c]-54 i B\,\text{Cos}[c]+26 i A\,\text{Sin}[c]+12 B\,\text{Sin}[c])\left(\frac{1}{24}\text{Cos}[2 c]-\frac{1}{24} i\,\text{Sin}[2 c]\right)+\text{Csc}[c]\,\text{Csc}[c+d x]^2\,(-4 A\,\text{Cos}[c]-13 i A\,\text{Sin}[c]-6 B\,\text{Sin}[c])\left(\frac{1}{12}\text{Cos}[2 c]-\frac{1}{12} i\,\text{Sin}[2 c]\right)+A\,\text{Csc}[c]\,\text{Csc}[c+d x]^3\left(\frac{1}{3}\text{Cos}[2 c]-\frac{1}{3} i\,\text{Sin}[2 c]\right)\text{Sin}[d x]+\text{Csc}[c]\,\text{Csc}[c+d x]\left(\frac{1}{24}\text{Cos}[2 c]-\frac{1}{24} i\,\text{Sin}[2 c]\right)(-65 A\,\text{Sin}[d x]+54 i B\,\text{Sin}[d x])\right)(a+i a\,\text{Tan}[c+d x])^{5/2}(A+B\,\text{Tan}[c+d x])$$

Problem 89: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 261 leaves, 10 steps):

$$-\frac{3 a^{5/2} (121 A-120 i B) \text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{64 d}+\frac{4 \sqrt{2} a^{5/2} (A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+i a \text{Tan}[c+d x]}}{\sqrt{2} \sqrt{a}}\right]}{d}+$$
$$\frac{a^2 (149 i A+152 B) \text{Cot}[c+d x] \sqrt{a+i a \text{Tan}[c+d x]}}{64 d}+$$
$$\frac{a^2 (107 A-104 i B) \text{Cot}[c+d x]^2 \sqrt{a+i a \text{Tan}[c+d x]}}{96 d}-$$
$$\frac{a^2 (11 i A+8 B) \text{Cot}[c+d x]^3 \sqrt{a+i a \text{Tan}[c+d x]}}{24 d}-\frac{a A \text{Cot}[c+d x]^4 (a+i a \text{Tan}[c+d x])^{3/2}}{4 d}$$

Result (type 3, 698 leaves):

$$\Bigg(e^{-2 i c} \sqrt{e^{i d x}} \Big(2048 (A-i B) \text{ArcSinh}\left[e^{i (c+d x)}\right]+$$
$$3 \sqrt{2} (121 A-120 i B) \Big(\text{Log}\left[\left(-1+e^{i (c+d x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i (c+d x)}\right)^2\right]+$$
$$\text{Log}\left[3+3 e^{2 i (c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i (c+d x)}}-2 e^{i (c+d x)} \left(1+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right)\right]-$$
$$\text{Log}\left[3+3 e^{2 i (c+d x)}+2 \sqrt{2} \sqrt{1+e^{2 i (c+d x)}}+2 e^{i (c+d x)} \left(1+\sqrt{2} \sqrt{1+e^{2 i (c+d x)}}\right)\right]\Big)\Big)$$
$$(a+i a \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x])\Bigg) \Bigg/ \Bigg(256 \sqrt{2} d \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}$$
$$\sqrt{1+e^{2 i (c+d x)}} \text{Sec}[c+d x]^{7/2} (\text{Cos}[d x]+i \text{Sin}[d x])^{5/2}$$
$$(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Bigg)+$$
$$\frac{1}{d (\text{Cos}[d x]+i \text{Sin}[d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])}$$
$$\text{Cos}[c+d x]^3$$
$$\Big(\text{Csc}[c] (583 i A \text{Cos}[c]+520 B \text{Cos}[c]-262 A \text{Sin}[c]+208 i B \text{Sin}[c])$$
$$\left(\frac{1}{192} \text{Cos}[2 c]-\frac{1}{192} i \text{Sin}[2 c]\right)+\text{Csc}[c+d x]^4 \left(-\frac{1}{4} A \text{Cos}[2 c]+\frac{1}{4} i A \text{Sin}[2 c]\right)+$$
$$\text{Csc}[c] \text{Csc}[c+d x]^2 (87 i A+72 B-223 i A \text{Cos}[2 c]-136 B \text{Cos}[2 c]+$$
$$223 A \text{Sin}[2 c]-136 i B \text{Sin}[2 c]) \left(\frac{1}{192} \text{Cos}[3 c]-\frac{1}{192} i \text{Sin}[3 c]\right)+$$
$$\text{Csc}[c] \text{Csc}[c+d x] \left(\frac{1}{192} \text{Cos}[2 c]-\frac{1}{192} i \text{Sin}[2 c]\right) (-583 i A \text{Sin}[d x]-520 B \text{Sin}[d x])+$$
$$\text{Csc}[c] \text{Csc}[c+d x]^3 \left(\frac{1}{24} \text{Cos}[2 c]-\frac{1}{24} i \text{Sin}[2 c]\right) (17 i A \text{Sin}[d x]+8 B \text{Sin}[d x])\Big)$$
$$(a+i a \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x])$$

Problem 94: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 350 leaves):

$$\Bigg(\Bigg(A\sqrt{1+e^{2\,i\,(c+d x)}}+i\,B\sqrt{1+e^{2\,i\,(c+d x)}}+(A-i\,B)\,e^{i\,(c+d x)}\,\text{ArcSinh}\left[e^{i\,(c+d x)}\right]+\sqrt{2}\,A\,e^{i\,(c+d x)}\,\text{Log}\left[1-e^{i\,(c+d x)}\right]-\sqrt{2}\,A\,e^{i\,(c+d x)}\,\text{Log}\left[1+e^{i\,(c+d x)}\right]+\sqrt{2}\,A\,e^{i\,(c+d x)}\,\text{Log}\left[1-e^{i\,(c+d x)}+\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d x)}}\right]-\sqrt{2}\,A\,e^{i\,(c+d x)}\,\text{Log}\left[1+e^{i\,(c+d x)}+\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d x)}}\right]\Bigg)\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/\left(2\,d\,\sqrt{\frac{e^{i\,(c+d x)}}{1+e^{2\,i\,(c+d x)}}}\,\sqrt{\frac{a\,e^{2\,i\,(c+d x)}}{1+e^{2\,i\,(c+d x)}}}\,\sqrt{1+e^{2\,i\,(c+d x)}}\right)$$

Problem 95: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 167 leaves, 8 steps):

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

Result (type 3, 387 leaves):

$$\left((B + A\,\mathrm{Cot}[c + d\,x])\left(\left(\left(-1 + e^{2\,i\,(c+d\,x)}\right)\left(4\,(A - i\,B)\,\mathrm{ArcSinh}\left[e^{i\,(c+d\,x)}\right] - \sqrt{2}\,(A + 2\,i\,B)\left(\mathrm{Log}\left[\left(-1 + e^{i\,(c+d\,x)}\right)^2\right] - \mathrm{Log}\left[\left(1 + e^{i\,(c+d\,x)}\right)^2\right] + \mathrm{Log}\left[3 + 3\,e^{2\,i\,(c+d\,x)} + 2\,\sqrt{2}\,\sqrt{1 + e^{2\,i\,(c+d\,x)}} - 2\,e^{i\,(c+d\,x)}\left(1 + \sqrt{2}\,\sqrt{1 + e^{2\,i\,(c+d\,x)}}\right)\right] - \mathrm{Log}\left[3 + 3\,e^{2\,i\,(c+d\,x)} + 2\,\sqrt{2}\,\sqrt{1 + e^{2\,i\,(c+d\,x)}} + 2\,e^{i\,(c+d\,x)}\left(1 + \sqrt{2}\,\sqrt{1 + e^{2\,i\,(c+d\,x)}}\right)\right]\right)\right)\sqrt{\mathrm{Sec}[c + d\,x]}\right) \Big/ \left(\sqrt{2}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1 + e^{2\,i\,(c+d\,x)}}}\,\sqrt{1 + e^{2\,i\,(c+d\,x)}}\right) - 8\,(A\,\mathrm{Cos}[c + d\,x] + (2\,i\,A - B)\,\mathrm{Sin}[c + d\,x])\right)\right) \Big/ \left(8\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,\sqrt{a + i\,a\,\mathrm{Tan}[c + d\,x]}\right)$$

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

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

Optimal (type 3, 268 leaves, 10 steps):

$$\frac{(23\,A + 12\,i\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,a^{3/2}\,d} - \frac{(A - i\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\mathrm{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d} + \frac{(A + i\,B)\,\mathrm{Cot}[c + d\,x]^2}{3\,d\,(a + i\,a\,\mathrm{Tan}[c + d\,x])^{3/2}} + \frac{(17\,A + 11\,i\,B)\,\mathrm{Cot}[c + d\,x]^2}{6\,a\,d\,\sqrt{a + i\,a\,\mathrm{Tan}[c + d\,x]}} + \frac{7\,(3\,i\,A - 2\,B)\,\mathrm{Cot}[c + d\,x]\,\sqrt{a + i\,a\,\mathrm{Tan}[c + d\,x]}}{4\,a^2\,d} - \frac{(22\,A + 13\,i\,B)\,\mathrm{Cot}[c + d\,x]^2\,\sqrt{a + i\,a\,\mathrm{Tan}[c + d\,x]}}{6\,a^2\,d}$$

Result (type 3, 755 leaves):

$$-\left(\left(e^{2\,i\,c}\sqrt{e^{i\,d\,x}}\left(8\,(A-i\,B)\,\text{ArcSinh}\left[e^{i\,(c+d\,x)}\right]+\sqrt{2}\,(23\,A+12\,i\,B)\left(\text{Log}\left[\left(-1+e^{i\,(c+d\,x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i\,(c+d\,x)}\right)^2\right]+\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\,\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d\,x)}}-2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]-\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\,\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d\,x)}}+2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(16\,\sqrt{2}\,d\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}\right)\right)+$$

$$\frac{1}{d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}\text{Sec}[c+d\,x]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\left(-\frac{1}{12}\,(23\,A+17\,i\,B)\,\text{Cos}[2\,d\,x]+(A+i\,B)\,\text{Cos}[4\,d\,x]\left(-\frac{1}{12}\,\text{Cos}[2\,c]+\frac{1}{12}\,i\,\text{Sin}[2\,c]\right)+\text{Csc}[c]\,(21\,i\,A\,\text{Cos}[c]-12\,B\,\text{Cos}[c]-16\,A\,\text{Sin}[c]-16\,i\,B\,\text{Sin}[c])\left(\frac{1}{12}\,\text{Cos}[2\,c]+\frac{1}{12}\,i\,\text{Sin}[2\,c]\right)+\text{Csc}[c+d\,x]^2\left(-\frac{1}{2}\,A\,\text{Cos}[2\,c]-\frac{1}{2}\,i\,A\,\text{Sin}[2\,c]\right)+\frac{1}{12}\,i\,(23\,A+17\,i\,B)\,\text{Sin}[2\,d\,x]+(A+i\,B)\left(\frac{1}{12}\,i\,\text{Cos}[2\,c]+\frac{1}{12}\,\text{Sin}[2\,c]\right)\text{Sin}[4\,d\,x]+\frac{1}{4}\,\text{Csc}[c]\,\text{Csc}[c+d\,x]\left(\frac{7}{2}\,A\,\text{Cos}[2\,c-d\,x]+2\,i\,B\,\text{Cos}[2\,c-d\,x]-\frac{7}{2}\,A\,\text{Cos}[2\,c+d\,x]-2\,i\,B\,\text{Cos}[2\,c+d\,x]+\frac{7}{2}\,i\,A\,\text{Sin}[2\,c-d\,x]-2\,B\,\text{Sin}[2\,c-d\,x]-\frac{7}{2}\,i\,A\,\text{Sin}[2\,c+d\,x]+2\,B\,\text{Sin}[2\,c+d\,x]\right)\right)(A+B\,\text{Tan}[c+d\,x])$$

Problem 109: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 192 leaves, 9 steps):

$$-\frac{2\,A\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{5/2}\,d}+\frac{(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{4\,\sqrt{2}\,a^{5/2}\,d}+\frac{A+i\,B}{5\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}+\frac{3\,A+i\,B}{6\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}+\frac{7\,A+i\,B}{4\,a^2\,d\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}$$

Result (type 3, 580 leaves) :

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

$$\frac{1}{d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}\,\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,\left((12\,A+7\,i\,B)\,\text{Cos}[4\,d\,x]\,\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}\,i\,\text{Sin}[c]\right)+(72\,A+17\,i\,B)\,\text{Cos}[2\,d\,x]\,\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}\,i\,\text{Sin}[c]\right)+(123\,A+23\,i\,B)\,\left(\frac{1}{120}\,\text{Cos}[3\,c]+\frac{1}{120}\,i\,\text{Sin}[3\,c]\right)+(A+i\,B)\,\text{Cos}[6\,d\,x]\,\left(\frac{1}{40}\,\text{Cos}[3\,c]-\frac{1}{40}\,i\,\text{Sin}[3\,c]\right)+(-72\,i\,A+17\,B)\,\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}\,i\,\text{Sin}[c]\right)\,\text{Sin}[2\,d\,x]+(-12\,i\,A+7\,B)\,\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}\,i\,\text{Sin}[c]\right)\,\text{Sin}[4\,d\,x]+(-i\,A+B)\,\left(\frac{1}{40}\,\text{Cos}[3\,c]-\frac{1}{40}\,i\,\text{Sin}[3\,c]\right)\,\text{Sin}[6\,d\,x]\right)\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 110: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 259 leaves, 10 steps) :

$$\frac{(5\,\mathrm{i}\,A-2\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{5/2}\,d}+\frac{(\mathrm{i}\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{4\,\sqrt{2}\,a^{5/2}\,d}+$$
$$\frac{(A+\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{5\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}+\frac{(19\,A+9\,\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{30\,a\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{3/2}}+$$
$$\frac{(41\,A+15\,\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]}{12\,a^2\,d\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}-\frac{7\,(3\,A+\mathrm{i}\,B)\,\mathrm{Cot}[c+d\,x]\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}{4\,a^3\,d}$$

Result (type 3, 748 leaves):

$$\Bigg(e^{3\,\mathrm{i}\,c}\,\sqrt{e^{\mathrm{i}\,d\,x}}\,\Bigg((\mathrm{i}\,A+B)\,\mathrm{ArcSinh}\left[e^{\mathrm{i}\,(c+d\,x)}\right]+\sqrt{2}\,(-5\,\mathrm{i}\,A+2\,B)\,\Bigg(\mathrm{Log}\left[\left(-1+e^{\mathrm{i}\,(c+d\,x)}\right)^2\right]-\mathrm{Log}\left[\left(1+e^{\mathrm{i}\,(c+d\,x)}\right)^2\right]+$$
$$\mathrm{Log}\left[3+3\,e^{2\,\mathrm{i}\,(c+d\,x)}+2\,\sqrt{2}\,\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}-2\,e^{\mathrm{i}\,(c+d\,x)}\left(1+\sqrt{2}\,\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right)\right]-$$
$$\mathrm{Log}\left[3+3\,e^{2\,\mathrm{i}\,(c+d\,x)}+2\,\sqrt{2}\,\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}+2\,e^{\mathrm{i}\,(c+d\,x)}\left(1+\sqrt{2}\,\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right)\right]\Bigg)\Bigg)$$
$$\mathrm{Sec}[c+d\,x]^{3/2}\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])\Bigg)\Bigg/$$
$$\Bigg(4\,\sqrt{2}\,d\,\sqrt{\frac{e^{\mathrm{i}\,(c+d\,x)}}{1+e^{2\,\mathrm{i}\,(c+d\,x)}}}\,\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])$$
$$(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}\Bigg)+$$
$$\frac{1}{d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}$$
$$\mathrm{Sec}[c+d\,x]^2\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^3$$
$$\Bigg((-17\,\mathrm{i}\,A+12\,B)\,\mathrm{Cos}[4\,d\,x]\left(\frac{\mathrm{Cos}[c]}{60}-\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)+$$
$$(-157\,\mathrm{i}\,A+72\,B)\,\mathrm{Cos}[2\,d\,x]\left(\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)+$$
$$\mathrm{Csc}[c]\,(120\,A\,\mathrm{Cos}[c]+283\,\mathrm{i}\,A\,\mathrm{Sin}[c]-123\,B\,\mathrm{Sin}[c])\left(-\frac{1}{120}\,\mathrm{Cos}[3\,c]-\frac{1}{120}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)+$$
$$(-\mathrm{i}\,A+B)\,\mathrm{Cos}[6\,d\,x]\left(\frac{1}{40}\,\mathrm{Cos}[3\,c]-\frac{1}{40}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)+$$
$$(157\,A+72\,\mathrm{i}\,B)\left(-\frac{\mathrm{Cos}[c]}{60}-\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\mathrm{Sin}[2\,d\,x]+$$
$$(17\,A+12\,\mathrm{i}\,B)\left(-\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\mathrm{Sin}[4\,d\,x]+(A+\mathrm{i}\,B)$$
$$\left(-\frac{1}{40}\,\mathrm{Cos}[3\,c]+\frac{1}{40}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\mathrm{Sin}[6\,d\,x]+\mathrm{Csc}[c]\,\mathrm{Csc}[c+d\,x]\left(\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[3\,c-d\,x]-\right.$$
$$\left.\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[3\,c+d\,x]-\frac{1}{2}\,A\,\mathrm{Sin}[3\,c-d\,x]+\frac{1}{2}\,A\,\mathrm{Sin}[3\,c+d\,x]\right)\Bigg)\,(A+B\,\mathrm{Tan}[c+d\,x])$$

Problem 111: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]^3\,(A+B\,\text{Tan}[c+d\,x])}{(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 312 leaves, 11 steps):

$$\frac{(43\,A+20\,i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{4\,a^{5/2}\,d}-\frac{(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{\sqrt{2}\,\sqrt{a}}\right]}{4\,\sqrt{2}\,a^{5/2}\,d}+\frac{(A+i\,B)\,\text{Cot}[c+d\,x]^2}{5\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}+\frac{(23\,A+13\,i\,B)\,\text{Cot}[c+d\,x]^2}{30\,a\,d\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}+\frac{(337\,A+167\,i\,B)\,\text{Cot}[c+d\,x]^2}{60\,a^2\,d\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}+\frac{21\,(2\,i\,A-B)\,\text{Cot}[c+d\,x]\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{4\,a^3\,d}-\frac{(85\,A+41\,i\,B)\,\text{Cot}[c+d\,x]^2\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{12\,a^3\,d}$$

Result (type 3, 839 leaves):

$$-\left(\left(e^{3\,i\,c}\sqrt{e^{i\,d\,x}}\left(4\,(A-i\,B)\,\text{ArcSinh}\left[e^{i\,(c+d\,x)}\right]+\sqrt{2}\,(43\,A+20\,i\,B)\left(\text{Log}\left[\left(-1+e^{i\,(c+d\,x)}\right)^2\right]-\text{Log}\left[\left(1+e^{i\,(c+d\,x)}\right)^2\right]+\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}-2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]-\text{Log}\left[3+3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}+2\,e^{i\,(c+d\,x)}\left(1+\sqrt{2}\sqrt{1+e^{2\,i\,(c+d\,x)}}\right)\right]\right)\right)\text{Sec}[c+d\,x]^{3/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(16\sqrt{2}\,d\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\sqrt{1+e^{2\,i\,(c+d\,x)}}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\right)\right)+$$

$$\frac{1}{d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\left((272\,A+157\,i\,B)\,\text{Cos}[2\,d\,x]\left(-\frac{\text{Cos}[c]}{60}-\frac{1}{60}\,i\,\text{Sin}[c]\right)+(22\,A+17\,i\,B)\,\text{Cos}[4\,d\,x]\left(-\frac{\text{Cos}[c]}{60}+\frac{1}{60}\,i\,\text{Sin}[c]\right)+\text{Csc}[c]\,(330\,i\,A\,\text{Cos}[c]-120\,B\,\text{Cos}[c]-443\,A\,\text{Sin}[c]-283\,i\,B\,\text{Sin}[c])\left(\frac{1}{120}\,\text{Cos}[3\,c]+\frac{1}{120}\,i\,\text{Sin}[3\,c]\right)+(A+i\,B)\,\text{Cos}[6\,d\,x]\left(-\frac{1}{40}\,\text{Cos}[3\,c]+\frac{1}{40}\,i\,\text{Sin}[3\,c]\right)+\text{Csc}[c+d\,x]^2\left(-\frac{1}{2}\,A\,\text{Cos}[3\,c]-\frac{1}{2}\,i\,A\,\text{Sin}[3\,c]\right)+(272\,A+157\,i\,B)\left(\frac{1}{60}\,i\,\text{Cos}[c]-\frac{\text{Sin}[c]}{60}\right)\text{Sin}[2\,d\,x]+(22\,A+17\,i\,B)\left(\frac{1}{60}\,i\,\text{Cos}[c]+\frac{\text{Sin}[c]}{60}\right)\text{Sin}[4\,d\,x]+(A+i\,B)\left(\frac{1}{40}\,i\,\text{Cos}[3\,c]+\frac{1}{40}\,\text{Sin}[3\,c]\right)\text{Sin}[6\,d\,x]+\frac{1}{4}\,\text{Csc}[c]\,\text{Csc}[c+d\,x]\left(\frac{11}{2}\,A\,\text{Cos}[3\,c-d\,x]+2\,i\,B\,\text{Cos}[3\,c-d\,x]-\frac{11}{2}\,A\,\text{Cos}[3\,c+d\,x]-2\,i\,B\,\text{Cos}[3\,c+d\,x]+\frac{11}{2}\,i\,A\,\text{Sin}[3\,c-d\,x]-2\,B\,\text{Sin}[3\,c-d\,x]-\frac{11}{2}\,i\,A\,\text{Sin}[3\,c+d\,x]+2\,B\,\text{Sin}[3\,c+d\,x]\right)\right)(A+B\,\text{Tan}[c+d\,x])$$

Problem 112: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 366 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^2\left(\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\left(\frac{2\,\text{Cos}[c]}{35}-\frac{2}{35}\,\text{i}\,\text{Sin}[c]\right)\right.$$
$$(7\,\text{i}\,A\,\text{Cos}[c]+7\,B\,\text{Cos}[c]+5\,\text{i}\,B\,\text{Sin}[c])+\text{Sec}[c]\left(-\frac{2}{105}\,\text{i}\,\text{Cos}[c]-\frac{2\,\text{Sin}[c]}{105}\right)$$
$$(126\,A\,\text{Cos}[c]-126\,\text{i}\,B\,\text{Cos}[c]+35\,\text{i}\,A\,\text{Sin}[c]+50\,B\,\text{Sin}[c])+$$
$$\text{i}\,B\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{2\,\text{Cos}[c]}{7}-\frac{2}{7}\,\text{i}\,\text{Sin}[c]\right)\text{Sin}[d\,x]+$$
$$\left.\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2\,\text{Cos}[c]}{21}-\frac{2}{21}\,\text{i}\,\text{Sin}[c]\right)(7\,A\,\text{Sin}[d\,x]-10\,\text{i}\,B\,\text{Sin}[d\,x])\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x])+$$
$$\left((A-\text{i}\,B)\,\text{ArcCosh}\left[e^{2\,\text{i}\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^2\,(\text{i}\,\text{Cos}[c]+\text{Sin}[c])\right.$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{\text{i}\,\text{Tan}[c+d\,x]}\right)$$

Problem 118: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 363 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^2$$
$$\left(\text{Csc}[c]\,\text{Csc}[c+d\,x]^2\left(-\frac{2\,\text{Cos}[c]}{15}+\frac{2}{15}\,i\,\text{Sin}[c]\right)(3\,A\,\text{Cos}[c]+5\,i\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c])+\right.$$
$$\text{Csc}[c]\left(\frac{2\,\text{Cos}[c]}{15}-\frac{2}{15}\,i\,\text{Sin}[c]\right)(18\,A\,\text{Cos}[c]-15\,i\,B\,\text{Cos}[c]+5\,i\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c])+$$
$$A\,\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\left(\frac{2\,\text{Cos}[c]}{5}-\frac{2}{5}\,i\,\text{Sin}[c]\right)\text{Sin}[d\,x]+$$
$$\left.\text{Csc}[c]\,\text{Csc}[c+d\,x]\left(-\frac{2\,\text{Cos}[c]}{5}+\frac{2}{5}\,i\,\text{Sin}[c]\right)(6\,A\,\text{Sin}[d\,x]-5\,i\,B\,\text{Sin}[d\,x])\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x])+$$
$$\left((A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^2\,(-i\,\text{Cos}[c]-\text{Sin}[c])\right.$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{i\,\text{Tan}[c+d\,x]}\right)$$

Problem 119: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 183 leaves, 7 steps):

$$-\frac{4\,(-1)^{1/4}\,a^2\,(i\,A+B)\,\text{ArcTan}\left[(-1)^{3/4}\sqrt{\text{Tan}[c+d\,x]}\right]}{d}-$$
$$\frac{4\,a^2\,(i\,A+B)\,\sqrt{\text{Tan}[c+d\,x]}}{d}+\frac{4\,a^2\,(A-i\,B)\,\text{Tan}[c+d\,x]^{3/2}}{3\,d}+\frac{4\,a^2\,(i\,A+B)\,\text{Tan}[c+d\,x]^{5/2}}{5\,d}-$$
$$\frac{2\,a^2\,(9\,A-11\,i\,B)\,\text{Tan}[c+d\,x]^{7/2}}{63\,d}+\frac{2\,i\,B\,\text{Tan}[c+d\,x]^{7/2}\,(a^2+i\,a^2\,\text{Tan}[c+d\,x])}{9\,d}$$

Result (type 3, 434 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$
$$\text{Cos}[c+d\,x]^3\,\Bigg(\text{Sec}[c]\,(756\,A\,\text{Cos}[c]-791\,i\,B\,\text{Cos}[c]+255\,i\,A\,\text{Sin}[c]+300\,B\,\text{Sin}[c])$$
$$\left(-\frac{2}{315}\,i\,\text{Cos}[2\,c]-\frac{2}{315}\,\text{Sin}[2\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(126\,i\,A\,\text{Cos}[c]+196\,B\,\text{Cos}[c]-45\,A\,\text{Sin}[c]+90\,i\,B\,\text{Sin}[c])$$
$$\left(\frac{2}{315}\,\text{Cos}[2\,c]-\frac{2}{315}\,i\,\text{Sin}[2\,c]\right)+\text{Sec}[c+d\,x]^4\left(-\frac{2}{9}\,B\,\text{Cos}[2\,c]+\frac{2}{9}\,i\,B\,\text{Sin}[2\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(-\frac{2}{7}\,\text{Cos}[2\,c]+\frac{2}{7}\,i\,\text{Sin}[2\,c]\right)(A\,\text{Sin}[d\,x]-2\,i\,B\,\text{Sin}[d\,x])+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2}{21}\,\text{Cos}[2\,c]-\frac{2}{21}\,i\,\text{Sin}[2\,c]\right)(17\,A\,\text{Sin}[d\,x]-20\,i\,B\,\text{Sin}[d\,x])\Bigg)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])+$$
$$\Big(2\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^3\,(i\,\text{Cos}[2\,c]+\text{Sin}[2\,c])$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{i\,\text{Tan}[c+d\,x]}\right)$$

Problem 120: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 156 leaves, 6 steps):

$$\frac{4\,(-1)^{1/4}\,a^2\,(A-i\,B)\,\text{ArcTan}\left[(-1)^{3/4}\sqrt{\text{Tan}[c+d\,x]}\right]}{d}+$$
$$\frac{4\,a^2\,(A-i\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{d}+\frac{4\,a^2\,(i\,A+B)\,\text{Tan}[c+d\,x]^{3/2}}{3\,d}-$$
$$\frac{2\,a^2\,(7\,A-9\,i\,B)\,\text{Tan}[c+d\,x]^{5/2}}{35\,d}+\frac{2\,i\,B\,\text{Tan}[c+d\,x]^{5/2}\,(a^2+i\,a^2\,\text{Tan}[c+d\,x])}{7\,d}$$

Result (type 3, 386 leaves):

$$\left(2\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\,\text{Cos}[c+d\,x]^3\,(i\,\text{Cos}[2\,c]+\text{Sin}[2\,c])\,\sqrt{i\,\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\,\text{Cos}[c+d\,x]^3\left(\text{Sec}[c]\,(231\,A\,\text{Cos}[c]-252\,i\,B\,\text{Cos}[c]+70\,i\,A\,\text{Sin}[c]+85\,B\,\text{Sin}[c])\left(\frac{2}{105}\,\text{Cos}[2\,c]-\frac{2}{105}\,i\,\text{Sin}[2\,c]\right)+\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(7\,A\,\text{Cos}[c]-14\,i\,B\,\text{Cos}[c]+5\,B\,\text{Sin}[c])\left(-\frac{2}{35}\,\text{Cos}[2\,c]+\frac{2}{35}\,i\,\text{Sin}[2\,c]\right)+B\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(-\frac{2}{7}\,\text{Cos}[2\,c]+\frac{2}{7}\,i\,\text{Sin}[2\,c]\right)\text{Sin}[d\,x]+\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2}{21}\,\text{Cos}[2\,c]-\frac{2}{21}\,i\,\text{Sin}[2\,c]\right)(14\,i\,A\,\text{Sin}[d\,x]+17\,B\,\text{Sin}[d\,x])\right)\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 125: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 127 leaves, 5 steps):

$$\frac{4\,(-1)^{1/4}\,a^2\,(i\,A+B)\,\text{ArcTan}\left[(-1)^{3/4}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{d}-\frac{2\,a^2\,(7\,i\,A+5\,B)}{15\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{4\,a^2\,(A-i\,B)}{d\,\sqrt{\text{Tan}[c+d\,x]}}-\frac{2\,A\,(a^2+i\,a^2\,\text{Tan}[c+d\,x])}{5\,d\,\text{Tan}[c+d\,x]^{5/2}}$$

Result (type 3, 386 leaves):

$$\frac{1}{d\left(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x]\right)^2\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)}$$
$$\text{Cos}[c+d\,x]^3\left(\text{Csc}[c]\left(33\,A\,\text{Cos}[c]-30\,\text{i}\,B\,\text{Cos}[c]+10\,\text{i}\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c]\right)\right.$$
$$\left(\frac{2}{15}\text{Cos}[2\,c]-\frac{2}{15}\text{i}\,\text{Sin}[2\,c]\right)+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]^2\left(3\,A\,\text{Cos}[c]+10\,\text{i}\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c]\right)\left(-\frac{2}{15}\text{Cos}[2\,c]+\frac{2}{15}\text{i}\,\text{Sin}[2\,c]\right)+$$
$$A\,\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\left(\frac{2}{5}\text{Cos}[2\,c]-\frac{2}{5}\text{i}\,\text{Sin}[2\,c]\right)\text{Sin}[d\,x]+$$
$$\left.\text{Csc}[c]\,\text{Csc}[c+d\,x]\left(-\frac{2}{5}\text{Cos}[2\,c]+\frac{2}{5}\text{i}\,\text{Sin}[2\,c]\right)\left(11\,A\,\text{Sin}[d\,x]-10\,\text{i}\,B\,\text{Sin}[d\,x]\right)\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\left(a+\text{i}\,a\,\text{Tan}[c+d\,x]\right)^2\left(A+B\,\text{Tan}[c+d\,x]\right)+$$
$$\left(2\left(A-\text{i}\,B\right)\text{ArcCosh}\left[e^{2\,\text{i}\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^3\left(\text{Cos}[2\,c]-\text{i}\,\text{Sin}[2\,c]\right)\right.$$
$$\left.\text{Tan}[c+d\,x]^{3/2}\left(a+\text{i}\,a\,\text{Tan}[c+d\,x]\right)^2\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(d\left(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x]\right)^2\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(\text{i}\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 126: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+\text{i}\,a\,\text{Tan}[c+d\,x]\right)^2\left(A+B\,\text{Tan}[c+d\,x]\right)}{\text{Tan}[c+d\,x]^{9/2}}\,dx$$

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

$$-\frac{4\left(-1\right)^{1/4}a^2\left(A-\text{i}\,B\right)\text{ArcTan}\left[\left(-1\right)^{3/4}\sqrt{\text{Tan}[c+d\,x]}\right]}{d}-\frac{2\,a^2\left(9\,\text{i}\,A+7\,B\right)}{35\,d\,\text{Tan}[c+d\,x]^{5/2}}+$$
$$\frac{4\,a^2\left(A-\text{i}\,B\right)}{3\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{4\,a^2\left(\text{i}\,A+B\right)}{d\sqrt{\text{Tan}[c+d\,x]}}-\frac{2\,A\left(a^2+\text{i}\,a^2\,\text{Tan}[c+d\,x]\right)}{7\,d\,\text{Tan}[c+d\,x]^{7/2}}$$

Result (type 3, 434 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$
$$\text{Cos}[c+d\,x]^3\,\Big(\text{Csc}[c]\,\text{Csc}[c+d\,x]^2\,(-42\,i\,A\,\text{Cos}[c]-21\,B\,\text{Cos}[c]+100\,A\,\text{Sin}[c]-70\,i\,B\,\text{Sin}[c])$$
$$\left(\frac{2}{105}\,\text{Cos}[2\,c]-\frac{2}{105}\,i\,\text{Sin}[2\,c]\right)+$$
$$\text{Csc}[c]\,(252\,i\,A\,\text{Cos}[c]+231\,B\,\text{Cos}[c]-85\,A\,\text{Sin}[c]+70\,i\,B\,\text{Sin}[c])$$
$$\left(\frac{2}{105}\,\text{Cos}[2\,c]-\frac{2}{105}\,i\,\text{Sin}[2\,c]\right)+\text{Csc}[c+d\,x]^4\,\left(-\frac{2}{7}\,A\,\text{Cos}[2\,c]+\frac{2}{7}\,i\,A\,\text{Sin}[2\,c]\right)+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]\,\left(\frac{2}{5}\,\text{Cos}[2\,c]-\frac{2}{5}\,i\,\text{Sin}[2\,c]\right)\,(-12\,i\,A\,\text{Sin}[d\,x]-11\,B\,\text{Sin}[d\,x])+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\,\left(\frac{2}{5}\,\text{Cos}[2\,c]-\frac{2}{5}\,i\,\text{Sin}[2\,c]\right)\,(2\,i\,A\,\text{Sin}[d\,x]+B\,\text{Sin}[d\,x])\Big)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])+$$
$$\Big(2\,(A-i\,B)\,\text{ArcCosh}\big[e^{2\,i\,(c+d\,x)}\big]\,\text{Cos}[c+d\,x]^3\,(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{i\,\text{Tan}[c+d\,x]}\Big)$$

Problem 127: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 198 leaves, 7 steps):

$$\frac{8\,(-1)^{1/4}\,a^3\,(A-i\,B)\,\text{ArcTan}\big[(-1)^{3/4}\,\sqrt{\text{Tan}[c+d\,x]}\big]}{d}+\frac{8\,a^3\,(A-i\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{d}+$$
$$\frac{8\,a^3\,(i\,A+B)\,\text{Tan}[c+d\,x]^{3/2}}{3\,d}-\frac{16\,a^3\,(18\,A-19\,i\,B)\,\text{Tan}[c+d\,x]^{5/2}}{315\,d}+$$
$$\frac{2\,i\,a\,B\,\text{Tan}[c+d\,x]^{5/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^2}{9\,d}-\frac{2\,(9\,A-13\,i\,B)\,\text{Tan}[c+d\,x]^{5/2}\,(a^3+i\,a^3\,\text{Tan}[c+d\,x])}{63\,d}$$

Result (type 3, 435 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$
$$\text{Cos}[c+d\,x]^4\,\Big(\text{Sec}[c]\,(1449\,A\,\text{Cos}[c]-1547\,i\,B\,\text{Cos}[c]+465\,i\,A\,\text{Sin}[c]+555\,B\,\text{Sin}[c])$$
$$\left(\frac{2}{315}\text{Cos}[3\,c]-\frac{2}{315}\,i\,\text{Sin}[3\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(189\,A\,\text{Cos}[c]-322\,i\,B\,\text{Cos}[c]+45\,i\,A\,\text{Sin}[c]+135\,B\,\text{Sin}[c])$$
$$\left(-\frac{2}{315}\text{Cos}[3\,c]+\frac{2}{315}\,i\,\text{Sin}[3\,c]\right)+\text{Sec}[c+d\,x]^4\left(-\frac{2}{9}\,i\,B\,\text{Cos}[3\,c]-\frac{2}{9}\,B\,\text{Sin}[3\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{2}{7}\text{Cos}[3\,c]-\frac{2}{7}\,i\,\text{Sin}[3\,c]\right)(-i\,A\,\text{Sin}[d\,x]-3\,B\,\text{Sin}[d\,x])+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2}{21}\text{Cos}[3\,c]-\frac{2}{21}\,i\,\text{Sin}[3\,c]\right)(31\,i\,A\,\text{Sin}[d\,x]+37\,B\,\text{Sin}[d\,x])\Big)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])-$$
$$\Big(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^4\,(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{i\,\text{Tan}[c+d\,x]}\right)$$

Problem 128: Result more than twice size of optimal antiderivative.

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

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

$$\frac{8\,(-1)^{1/4}\,a^3\,(i\,A+B)\,\text{ArcTan}\left[(-1)^{3/4}\sqrt{\text{Tan}[c+d\,x]}\right]}{d}+$$
$$\frac{8\,a^3\,(i\,A+B)\,\sqrt{\text{Tan}[c+d\,x]}}{d}-\frac{8\,a^3\,(21\,A-23\,i\,B)\,\text{Tan}[c+d\,x]^{3/2}}{105\,d}+$$
$$\frac{2\,i\,a\,B\,\text{Tan}[c+d\,x]^{3/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^2}{7\,d}-\frac{2\,(7\,A-11\,i\,B)\,\text{Tan}[c+d\,x]^{3/2}\,(a^3+i\,a^3\,\text{Tan}[c+d\,x])}{35\,d}$$

Result (type 3, 389 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^4\Big(\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(7\,A\,\text{Cos}[c]-21\,i\,B\,\text{Cos}[c]+5\,B\,\text{Sin}[c])\left(-\frac{2}{35}\,i\,\text{Cos}[3\,c]-\frac{2}{35}\,\text{Sin}[3\,c]\right)+\text{Sec}[c]\,(441\,i\,A\,\text{Cos}[c]+483\,B\,\text{Cos}[c]-105\,A\,\text{Sin}[c]+155\,i\,B\,\text{Sin}[c])\left(\frac{2}{105}\,\text{Cos}[3\,c]-\frac{2}{105}\,i\,\text{Sin}[3\,c]\right)-i\,B\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{2}{7}\,\text{Cos}[3\,c]-\frac{2}{7}\,i\,\text{Sin}[3\,c]\right)\text{Sin}[d\,x]+\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(-\frac{2}{21}\,\text{Cos}[3\,c]+\frac{2}{21}\,i\,\text{Sin}[3\,c]\right)(21\,A\,\text{Sin}[d\,x]-31\,i\,B\,\text{Sin}[d\,x])\Big)\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])+\Big(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^4\,(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])\,\text{Tan}[c+d\,x]^{3/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(i\,\text{Tan}[c+d\,x])^{3/2}\Big)$$

Problem 129: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 146 leaves, 5 steps):

$$-\frac{8\,(-1)^{1/4}\,a^3\,(A-i\,B)\,\text{ArcTan}\left[(-1)^{3/4}\sqrt{\text{Tan}[c+d\,x]}\right]}{d}-\frac{16\,a^3\,(5\,A-6\,i\,B)\sqrt{\text{Tan}[c+d\,x]}}{15\,d}+\frac{2\,i\,a\,B\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^2}{5\,d}-\frac{2\,(5\,A-9\,i\,B)\sqrt{\text{Tan}[c+d\,x]}\,(a^3+i\,a^3\,\text{Tan}[c+d\,x])}{15\,d}$$

Result (type 3, 333 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^4\Big(\text{Sec}[c]\,(45\,A\,\text{Cos}[c]-63\,i\,B\,\text{Cos}[c]+5\,i\,A\,\text{Sin}[c]+15\,B\,\text{Sin}[c])\left(-\frac{2}{15}\,\text{Cos}[3\,c]+\frac{2}{15}\,i\,\text{Sin}[3\,c]\right)+\text{Sec}[c+d\,x]^2\left(-\frac{2}{5}\,i\,B\,\text{Cos}[3\,c]-\frac{2}{5}\,B\,\text{Sin}[3\,c]\right)+\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2}{3}\,\text{Cos}[3\,c]-\frac{2}{3}\,i\,\text{Sin}[3\,c]\right)(-i\,A\,\text{Sin}[d\,x]-3\,B\,\text{Sin}[d\,x])\Big)\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])+\Big(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\text{Cos}[c+d\,x]^4\,(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\sqrt{i\,\text{Tan}[c+d\,x]}\Big)$$

Problem 130: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 134 leaves, 5 steps):

$$-\frac{8 \, (-1)^{1/4} a^3 \, (i A + B) \operatorname{ArcTan}\left[(-1)^{3/4} \sqrt{\operatorname{Tan}[c + d x]}\right]}{d} - \frac{16 a^3 B \sqrt{\operatorname{Tan}[c + d x]}}{3 d} - \frac{2 a A \, (a + i a \operatorname{Tan}[c + d x])^2}{d \sqrt{\operatorname{Tan}[c + d x]}} + \frac{2 \, (3 i A - B) \sqrt{\operatorname{Tan}[c + d x]} \, (a^3 + i a^3 \operatorname{Tan}[c + d x])}{3 d}$$

Result (type 3, 341 leaves):

$$\frac{1}{d \, (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 \, (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])} \operatorname{Cos}[c + d x]^4 \Big(\operatorname{Csc}[c] \operatorname{Sec}[c] \, (3 A + i B + 3 A \operatorname{Cos}[2 c] - i B \operatorname{Cos}[2 c] + 3 i A \operatorname{Sin}[2 c] + 9 B \operatorname{Sin}[2 c]) \left(-\frac{1}{3} \operatorname{Cos}[3 c] + \frac{1}{3} i \operatorname{Sin}[3 c]\right) - i B \operatorname{Sec}[c] \operatorname{Sec}[c + d x] \left(\frac{2}{3} \operatorname{Cos}[3 c] - \frac{2}{3} i \operatorname{Sin}[3 c]\right) \operatorname{Sin}[d x] + A \operatorname{Csc}[c] \operatorname{Csc}[c + d x] \, (2 \operatorname{Cos}[3 c] - 2 i \operatorname{Sin}[3 c]) \operatorname{Sin}[d x]\Big) \sqrt{\operatorname{Tan}[c + d x]} \, (a + i a \operatorname{Tan}[c + d x])^3 \, (A + B \operatorname{Tan}[c + d x]) + \Big(4 \, (A - i B) \operatorname{ArcCosh}\left[e^{2 i (c+d x)}\right] \operatorname{Cos}[c + d x]^4 \, (i \operatorname{Cos}[3 c] + \operatorname{Sin}[3 c]) \sqrt{\operatorname{Tan}[c + d x]} \, (a + i a \operatorname{Tan}[c + d x])^3 \, (A + B \operatorname{Tan}[c + d x])\Big) \Big/ \Big(d \, (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 \, (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x]) \sqrt{i \operatorname{Tan}[c + d x]}\Big)$$

Problem 131: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 136 leaves, 5 steps):

$$\frac{8 \, (-1)^{1/4} a^3 \, (A - i B) \operatorname{ArcTan}\left[(-1)^{3/4} \sqrt{\operatorname{Tan}[c + d x]}\right]}{d} - \frac{16 a^3 A \sqrt{\operatorname{Tan}[c + d x]}}{3 d} - \frac{2 a A \, (a + i a \operatorname{Tan}[c + d x])^2}{3 d \operatorname{Tan}[c + d x]^{3/2}} - \frac{2 \, (7 i A + 3 B) \, (a^3 + i a^3 \operatorname{Tan}[c + d x])}{3 d \sqrt{\operatorname{Tan}[c + d x]}}$$

Result (type 3, 331 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$
$$\text{Cos}[c+d\,x]^4\left(-i\,\text{Csc}[c]\,(9\,A\,\text{Cos}[c]-3\,i\,B\,\text{Cos}[c]+i\,A\,\text{Sin}[c]+3\,B\,\text{Sin}[c])\right.$$
$$\left(\frac{2}{3}\,\text{Cos}[3\,c]-\frac{2}{3}\,i\,\text{Sin}[3\,c]\right)+\text{Csc}[c+d\,x]^2\left(-\frac{2}{3}\,A\,\text{Cos}[3\,c]+\frac{2}{3}\,i\,A\,\text{Sin}[3\,c]\right)+$$
$$\left.\text{Csc}[c]\,\text{Csc}[c+d\,x]\,(2\,\text{Cos}[3\,c]-2\,i\,\text{Sin}[3\,c])\,(3\,i\,A\,\text{Sin}[d\,x]+B\,\text{Sin}[d\,x])\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])-$$
$$\left(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\,\text{Cos}[c+d\,x]^4\,(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])\right.$$
$$\left.\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,\sqrt{i\,\text{Tan}[c+d\,x]}\right)$$

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

$$\int\frac{(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{7/2}}\,dx$$

Optimal (type 3, 144 leaves, 5 steps):

$$\frac{8\,(-1)^{1/4}\,a^3\,(i\,A+B)\,\text{ArcTan}\left[(-1)^{3/4}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{d}+\frac{16\,a^3\,(6\,A-5\,i\,B)}{15\,d\,\sqrt{\text{Tan}[c+d\,x]}}-$$
$$\frac{2\,a\,A\,(a+i\,a\,\text{Tan}[c+d\,x])^2}{5\,d\,\text{Tan}[c+d\,x]^{5/2}}-\frac{2\,(9\,i\,A+5\,B)\,(a^3+i\,a^3\,\text{Tan}[c+d\,x])}{15\,d\,\text{Tan}[c+d\,x]^{3/2}}$$

Result (type 3, 386 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$
$$\text{Cos}[c+d\,x]^4\left(\text{Csc}[c]\,(63\,A\,\text{Cos}[c]-45\,i\,B\,\text{Cos}[c]+15\,i\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c])\right.$$
$$\left(\frac{2}{15}\,\text{Cos}[3\,c]-\frac{2}{15}\,i\,\text{Sin}[3\,c]\right)+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]^2\,(3\,A\,\text{Cos}[c]+15\,i\,A\,\text{Sin}[c]+5\,B\,\text{Sin}[c])\left(-\frac{2}{15}\,\text{Cos}[3\,c]+\frac{2}{15}\,i\,\text{Sin}[3\,c]\right)+$$
$$A\,\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\left(\frac{2}{5}\,\text{Cos}[3\,c]-\frac{2}{5}\,i\,\text{Sin}[3\,c]\right)\text{Sin}[d\,x]+$$
$$\left.\text{Csc}[c]\,\text{Csc}[c+d\,x]\left(-\frac{6}{5}\,\text{Cos}[3\,c]+\frac{6}{5}\,i\,\text{Sin}[3\,c]\right)(7\,A\,\text{Sin}[d\,x]-5\,i\,B\,\text{Sin}[d\,x])\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])+$$
$$\left(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\,\text{Cos}[c+d\,x]^4\,(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])\right.$$
$$\left.\text{Tan}[c+d\,x]^{3/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(i\,\text{Tan}[c+d\,x])^{3/2}\right)$$

Problem 133: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a \operatorname{Tan}[c + d x])^3 \, (A + B \operatorname{Tan}[c + d x])}{\operatorname{Tan}[c + d x]^{9/2}} \, dx$$

Optimal (type 3, 169 leaves, 6 steps):

$$-\frac{8 (-1)^{1/4} a^3 (A - i B) \operatorname{ArcTan}\left[(-1)^{3/4} \sqrt{\operatorname{Tan}[c + d x]}\right]}{d} + \frac{8 a^3 (23 A - 21 i B)}{105 d \operatorname{Tan}[c + d x]^{3/2}} + \frac{8 a^3 (i A + B)}{d \sqrt{\operatorname{Tan}[c + d x]}} - \frac{2 a A (a + i a \operatorname{Tan}[c + d x])^2}{7 d \operatorname{Tan}[c + d x]^{7/2}} - \frac{2 (11 i A + 7 B) (a^3 + i a^3 \operatorname{Tan}[c + d x])}{35 d \operatorname{Tan}[c + d x]^{5/2}}$$

Result (type 3, 434 leaves):

$$\frac{1}{d (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])} \operatorname{Cos}[c + d x]^4 \left(\operatorname{Csc}[c] \operatorname{Csc}[c + d x]^2 (-63 i A \operatorname{Cos}[c] - 21 B \operatorname{Cos}[c] + 170 A \operatorname{Sin}[c] - 105 i B \operatorname{Sin}[c]) \left(\frac{2}{105} \operatorname{Cos}[3 c] - \frac{2}{105} i \operatorname{Sin}[3 c]\right) + \operatorname{Csc}[c] (483 i A \operatorname{Cos}[c] + 441 B \operatorname{Cos}[c] - 155 A \operatorname{Sin}[c] + 105 i B \operatorname{Sin}[c]) \left(\frac{2}{105} \operatorname{Cos}[3 c] - \frac{2}{105} i \operatorname{Sin}[3 c]\right) + \operatorname{Csc}[c + d x]^4 \left(-\frac{2}{7} A \operatorname{Cos}[3 c] + \frac{2}{7} i A \operatorname{Sin}[3 c]\right) + \operatorname{Csc}[c] \operatorname{Csc}[c + d x] \left(\frac{2}{5} \operatorname{Cos}[3 c] - \frac{2}{5} i \operatorname{Sin}[3 c]\right) (-23 i A \operatorname{Sin}[d x] - 21 B \operatorname{Sin}[d x]) + \operatorname{Csc}[c] \operatorname{Csc}[c + d x]^3 \left(\frac{2}{5} \operatorname{Cos}[3 c] - \frac{2}{5} i \operatorname{Sin}[3 c]\right) (3 i A \operatorname{Sin}[d x] + B \operatorname{Sin}[d x])\right) \sqrt{\operatorname{Tan}[c + d x]} (a + i a \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x]) + \left(4 (A - i B) \operatorname{ArcCosh}\left[e^{2 i (c + d x)}\right] \operatorname{Cos}[c + d x]^4 (\operatorname{Cos}[3 c] - i \operatorname{Sin}[3 c]) \sqrt{\operatorname{Tan}[c + d x]} (a + i a \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x]) \sqrt{i \operatorname{Tan}[c + d x]}\right)$$

Problem 154: Unable to integrate problem.

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

Optimal (type 3, 200 leaves, 9 steps):

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

Result (type 8, 40 leaves):

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

Problem 155: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 152 leaves, 8 steps):

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

Result (type 3, 560 leaves):

$$-\frac{1}{4\sqrt{2}\,d\sqrt{-1+e^{2\,i\,(c+d\,x)}}\,\sqrt{\text{Sec}[c+d\,x]}}\,e^{-i\,(c+d\,x)}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\sqrt{-\frac{i\left(-1+e^{2\,i\,(c+d\,x)}\right)}{1+e^{2\,i\,(c+d\,x)}}}$$
$$\Bigg(-8\,B\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}+8\,(i\,A+B)\left(1+e^{2\,i\,(c+d\,x)}\right)\text{Log}\left[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]-$$
$$i\sqrt{2}\,(2\,A-i\,B)\left(1+e^{2\,i\,(c+d\,x)}\right)\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}-2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]+$$
$$2\,i\sqrt{2}\,A\,\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]+$$
$$\sqrt{2}\,B\,\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]+$$
$$2\,i\sqrt{2}\,A\,e^{2\,i\,(c+d\,x)}\,\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]+$$
$$\sqrt{2}\,B\,e^{2\,i\,(c+d\,x)}\,\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]\Bigg)\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}$$

Problem 156: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 112 leaves, 7 steps):

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

Result (type 3, 241 leaves):

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

Problem 161: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 248 leaves, 10 steps):

$$\frac{(-1)^{3/4}\,a^{3/2}\,(22\,i\,A+23\,B)\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]}{8\,d}+$$
$$\frac{(2+2\,i)\,a^{3/2}\,(i\,A+B)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]}{d}+$$
$$\frac{a\,(10\,A-9\,i\,B)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{8\,d}+$$
$$\frac{a\,(6\,i\,A+7\,B)\,\text{Tan}[c+d\,x]^{3/2}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{12\,d}+\frac{i\,a\,B\,\text{Tan}[c+d\,x]^{5/2}\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{3\,d}$$

Result (type 3, 527 leaves):

$$\left(e^{-i c}\sqrt{e^{i d x}}\sqrt{-\frac{i\left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}}\left(-128 (A-i B) \text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2} (22 A-23 i B)\left(\text{Log}\left[1-3 e^{2 i (c+d x)}-2\sqrt{2} e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]-\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2} e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right)(a+i a \text{Tan}[c+d x])^{3/2}(A+B \text{Tan}[c+d x])\right)\Bigg/\left(32\sqrt{2} d\sqrt{-1+e^{2 i (c+d x)}}\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\text{Sec}[c+d x]^{5/2}(\text{Cos}[d x]+i \text{Sin}[d x])^{3/2}(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$

$$\left(\text{Cos}[c+d x]^2\left((6 A-7 i B)\left(\frac{7 \text{Cos}[c]}{24}-\frac{7}{24} i \text{Sin}[c]\right)+\text{Sec}[c+d x]^2\left(\frac{1}{3} i B \text{Cos}[c]+\frac{1}{3} B \text{Sin}[c]\right)+(6 A-7 i B) \text{Sec}[c+d x]\left(-\frac{1}{12}\text{Cos}[2 c+d x]+\frac{1}{12} i \text{Sin}[2 c+d x]\right)\right)\sqrt{\text{Tan}[c+d x]}(a+i a \text{Tan}[c+d x])^{3/2}(A+B \text{Tan}[c+d x])\right)\Big/\left(d(\text{Cos}[d x]+i \text{Sin}[d x])(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$$

Problem 162: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 204 leaves, 9 steps):

$$-\frac{(-1)^{3/4} a^{3/2}(12 A-11 i B) \text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{4 d}-\frac{(2+2 i) a^{3/2}(A-i B) \text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right]}{d}+\frac{a(4 i A+5 B)\sqrt{\text{Tan}[c+d x]}\sqrt{a+i a \text{Tan}[c+d x]}}{4 d}+\frac{i a B \text{Tan}[c+d x]^{3/2}\sqrt{a+i a \text{Tan}[c+d x]}}{2 d}$$

Result (type 3, 496 leaves):

$$\left(e^{-i c}\sqrt{e^{i d x}}\sqrt{-\frac{i\left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}}\left(-64 i\,(A-i B)\,\text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2}\,(12 i A+11 B)\left(\text{Log}\left[1-3 e^{2 i (c+d x)}-2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]-\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right)(a+i a\,\text{Tan}[c+d x])^{3/2}(A+B\,\text{Tan}[c+d x])\right)\Big/\left(16\sqrt{2}\,d\sqrt{-1+e^{2 i (c+d x)}}\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\,\text{Sec}[c+d x]^{5/2}(\text{Cos}[d x]+i\,\text{Sin}[d x])^{3/2}(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)+$$

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

Problem 163: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 156 leaves, 8 steps):

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

Result (type 3, 481 leaves):

$$\frac{1}{4\sqrt{2}\,d\sqrt{-1+e^{2 i (c+d x)}}}\,a\,e^{-i (c+d x)}\Big(4 i \sqrt{2}\,B\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}+8\sqrt{2}\,(A-i B)\,\left(1+e^{2 i (c+d x)}\right)\text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]-(2 A-3 i B)\,\left(1+e^{2 i (c+d x)}\right)\text{Log}\left[1-3 e^{2 i (c+d x)}-2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]+2 A\,\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]-3 i B\,\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]+2 A\,e^{2 i (c+d x)}\,\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]-3 i B\,e^{2 i (c+d x)}\,\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]\Big)\sqrt{\text{Tan}[c+d x]}\,\sqrt{a+i a\,\text{Tan}[c+d x]}$$

Problem 164: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 146 leaves, 8 steps):

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

Result (type 3, 307 leaves):

$$-\frac{1}{4\sqrt{2}\,d\sqrt{-1+e^{2 i (c+d x)}}}\,a\,e^{-\frac{1}{2} i (4 c+5 d x)}\sqrt{\frac{a\,e^{2 i (c+d x)}}{1+e^{2 i (c+d x)}}}\left(1+e^{2 i (c+d x)}\right)^2\Big(4 A\sqrt{-1+e^{2 i (c+d x)}}\,\text{Csc}[c+d x]+(-8 i A-8 B)\,\text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2}\,B\,\Big(\text{Log}\left[1-3 e^{2 i (c+d x)}-2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]-\text{Log}\left[1-3 e^{2 i (c+d x)}+2\sqrt{2}\,e^{i (c+d x)}\sqrt{-1+e^{2 i (c+d x)}}\right]\Big)\Big)\,\text{Sec}[c+d x]\left(\text{Cos}\left[\frac{d x}{2}\right]+i\,\text{Sin}\left[\frac{d x}{2}\right]\right)\sqrt{\text{Tan}[c+d x]}$$

Problem 170: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 252 leaves, 10 steps):

$$-\frac{(-1)^{3/4} a^{5/2} (46 A - 45 i B) \operatorname{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+i a \operatorname{Tan}[c+d x]}}\right]}{8 d} - \frac{(4+4 i) a^{5/2} (A - i B) \operatorname{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+i a \operatorname{Tan}[c+d x]}}\right]}{d} + \frac{a^2 (18 i A + 19 B) \sqrt{\operatorname{Tan}[c+d x]} \sqrt{a + i a \operatorname{Tan}[c+d x]}}{8 d} - \frac{a^2 (2 A - 3 i B) \operatorname{Tan}[c+d x]^{3/2} \sqrt{a + i a \operatorname{Tan}[c+d x]}}{4 d} + \frac{i a B \operatorname{Tan}[c+d x]^{3/2} (a + i a \operatorname{Tan}[c+d x])^{3/2}}{3 d}$$

Result (type 3, 537 leaves):

$$\left(e^{-2 i c} \sqrt{e^{i d x}} \sqrt{-\frac{i \left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}} \left(-256 i (A - i B) \operatorname{Log}\left[e^{i (c+d x)} + \sqrt{-1+e^{2 i (c+d x)}}\right] + \sqrt{2} (46 i A + 45 B) \left(\operatorname{Log}\left[1 - 3 e^{2 i (c+d x)} - 2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right] - \operatorname{Log}\left[1 - 3 e^{2 i (c+d x)} + 2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right) (a + i a \operatorname{Tan}[c+d x])^{5/2} (A + B \operatorname{Tan}[c+d x])\right) \Bigg/ \left(32 \sqrt{2} d \sqrt{-1+e^{2 i (c+d x)}} \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}} \operatorname{Sec}[c+d x]^{7/2} (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^{5/2} (A \operatorname{Cos}[c+d x] + B \operatorname{Sin}[c+d x])\right) + \left(\operatorname{Cos}[c+d x]^3 \left((66 i A + 91 B) \left(\frac{1}{24} \operatorname{Cos}[2 c] - \frac{1}{24} i \operatorname{Sin}[2 c]\right) + \operatorname{Sec}[c+d x]^2 \left(-\frac{1}{3} B \operatorname{Cos}[2 c] + \frac{1}{3} i B \operatorname{Sin}[2 c]\right) + (6 A - 13 i B) \operatorname{Sec}[c+d x] \left(-\frac{1}{12} i \operatorname{Cos}[3 c + d x] - \frac{1}{12} \operatorname{Sin}[3 c + d x]\right)\right) \sqrt{\operatorname{Tan}[c+d x]} (a + i a \operatorname{Tan}[c+d x])^{5/2} (A + B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^2 (A \operatorname{Cos}[c+d x] + B \operatorname{Sin}[c+d x])\right)$$

Problem 171: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 206 leaves, 9 steps):

$$-\frac{(-1)^{3/4}\, a^{5/2}\, (20\,i\, A+23\, B)\, \text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\, a\,\text{Tan}[c+d\,x]}}\right]}{4\, d}+\frac{(4-4\,i)\, a^{5/2}\, (A-i\, B)\, \text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\, a\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{a^2\, (4\, A-7\, i\, B)\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+i\, a\,\text{Tan}[c+d\,x]}}{4\, d}+\frac{i\, a\, B\sqrt{\text{Tan}[c+d\,x]}\, (a+i\, a\,\text{Tan}[c+d\,x])^{3/2}}{2\, d}$$

Result (type 3, 499 leaves) :

$$\left(e^{-2\,i\,c}\sqrt{e^{i\,d\,x}}\sqrt{-\frac{i\left(-1+e^{2\,i\,(c+d\,x)}\right)}{1+e^{2\,i\,(c+d\,x)}}}\left(128\,(A-i\,B)\,\text{Log}\left[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]-\sqrt{2}\,(20\,A-23\,i\,B)\left(\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}-2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]-\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\sqrt{2}\,e^{i\,(c+d\,x)}\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]\right)\right)(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(16\sqrt{2}\,d\sqrt{-1+e^{2\,i\,(c+d\,x)}}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Sec}[c+d\,x]^{7/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{5/2}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+\left(\text{Cos}[c+d\,x]^3\left((4\,A-11\,i\,B)\left(-\frac{1}{4}\text{Cos}[2\,c]+\frac{1}{4}i\,\text{Sin}[2\,c]\right)+\text{Sec}[c+d\,x]\left(-\frac{1}{2}i\,B\,\text{Cos}[3\,c+d\,x]-\frac{1}{2}B\,\text{Sin}[3\,c+d\,x]\right)\right)\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 172: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 196 leaves, 9 steps) :

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

Result (type 3, 493 leaves):

$$\left(e^{-2 i c} \sqrt{e^{i d x}} \sqrt{-\frac{i \left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}} \left(32 (i A + B) \operatorname{Log}\left[e^{i (c+d x)} + \sqrt{-1+e^{2 i (c+d x)}}\right] - i \sqrt{2} (2 A - 5 i B) \left(\operatorname{Log}\left[1 - 3 e^{2 i (c+d x)} - 2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right] - \operatorname{Log}\left[1 - 3 e^{2 i (c+d x)} + 2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right) (a + i a \operatorname{Tan}[c+d x])^{5/2} (A + B \operatorname{Tan}[c+d x])\right) \Big/ \left(4 \sqrt{2} d \sqrt{-1+e^{2 i (c+d x)}} \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}} \operatorname{Sec}[c+d x]^{7/2} (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^{5/2} (A \operatorname{Cos}[c+d x] + B \operatorname{Sin}[c+d x])\right) + \left(\operatorname{Cos}[c+d x]^3 (\operatorname{Csc}[c] (2 A \operatorname{Cos}[c] + B \operatorname{Sin}[c]) (-\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]) + A \operatorname{Csc}[c] \operatorname{Csc}[c+d x] (2 \operatorname{Cos}[2 c] - 2 i \operatorname{Sin}[2 c]) \operatorname{Sin}[d x]) \sqrt{\operatorname{Tan}[c+d x]} (a + i a \operatorname{Tan}[c+d x])^{5/2} (A + B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (\operatorname{Cos}[d x] + i \operatorname{Sin}[d x])^2 (A \operatorname{Cos}[c+d x] + B \operatorname{Sin}[c+d x])\right)$$

Problem 173: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 190 leaves, 9 steps):

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

Result (type 3, 618 leaves):

$$\left(e^{-i (3 c+d x)} \sqrt{e^{i d x}} \sqrt{-1+e^{2 i (c+d x)}} \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\right.$$

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

$$8 (i A+B) \,\text{Log}\left[e^{-i c} \left(e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right)\right]-$$

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

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

$$\left.\text{Sec}[c+d x]^{7/2} (\text{Cos}[d x]+i \,\text{Sin}[d x])^{5/2} (A \,\text{Cos}[c+d x]+B \,\text{Sin}[c+d x])\right)+$$

$$\frac{1}{d (\text{Cos}[d x]+i \,\text{Sin}[d x])^2 (A \,\text{Cos}[c+d x]+B \,\text{Sin}[c+d x])}$$

$$\text{Cos}[c+d x]^3 \left(-i \,\text{Csc}[c] (7 A \,\text{Cos}[c]-3 i B \,\text{Cos}[c]+i A \,\text{Sin}[c]) \left(\frac{2}{3} \text{Cos}[2 c]-\frac{2}{3} i \,\text{Sin}[2 c]\right)+\right.$$

$$\text{Csc}[c+d x]^2 \left(-\frac{2}{3} A \,\text{Cos}[2 c]+\frac{2}{3} i A \,\text{Sin}[2 c]\right)+$$

$$\left.\text{Csc}[c] \,\text{Csc}[c+d x] \left(\frac{2}{3} \text{Cos}[2 c]-\frac{2}{3} i \,\text{Sin}[2 c]\right) (7 i A \,\text{Sin}[d x]+3 B \,\text{Sin}[d x])\right)$$

$$\sqrt{\text{Tan}[c+d x]}\, (a+i a \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])$$

Problem 177: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])}{\text{Tan}[c+d x]^{13/2}} \, dx$$

Optimal (type 3, 323 leaves, 9 steps):

$$\frac{(4+4\,i)\,a^{5/2}\,(i\,A+B)\,\text{ArcTanh}\left[\frac{(1+i)\,\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]}{d}-$$
$$\frac{2\,a^2\,(14\,i\,A+11\,B)\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{99\,d\,\text{Tan}[c+d\,x]^{9/2}}+\frac{2\,a^2\,(212\,A-209\,i\,B)\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{693\,d\,\text{Tan}[c+d\,x]^{7/2}}+$$
$$\frac{4\,a^2\,(250\,i\,A+253\,B)\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{1155\,d\,\text{Tan}[c+d\,x]^{5/2}}-\frac{8\,a^2\,(655\,A-649\,i\,B)\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{3465\,d\,\text{Tan}[c+d\,x]^{3/2}}-$$
$$\frac{8\,a^2\,(2155\,i\,A+2167\,B)\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{3465\,d\,\sqrt{\text{Tan}[c+d\,x]}}-\frac{2\,a\,A\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}{11\,d\,\text{Tan}[c+d\,x]^{11/2}}$$

Result (type 3, 656 leaves):

$$\left(4\sqrt{2}\,(i\,A+B)\,e^{-i\,(3\,c+d\,x)}\,\sqrt{e^{i\,d\,x}}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right.$$
$$\left.\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Log}\left[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\right)\Big/$$
$$\left(d\,\sqrt{-\frac{i\,\left(-1+e^{2\,i\,(c+d\,x)}\right)}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Sec}[c+d\,x]^{5/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{5/2}\right)+$$
$$\frac{1}{(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2}\,\text{Cos}[c+d\,x]^2$$
$$\left(-i\,\text{Csc}[c]\,(10925\,A\,\text{Cos}[c]-10571\,i\,B\,\text{Cos}[c]+3995\,i\,A\,\text{Sin}[c]+3641\,B\,\text{Sin}[c])\,\left(\frac{2\,\text{Cos}[2\,c]}{3465\,d}-\right.\right.$$
$$\left.\frac{2\,i\,\text{Sin}[2\,c]}{3465\,d}\right)+\text{Csc}[c+d\,x]^6\,\left(-\frac{2\,A\,\text{Cos}[2\,c]}{11\,d}+\frac{2\,i\,A\,\text{Sin}[2\,c]}{11\,d}\right)+\text{Csc}[c]\,\text{Csc}[c+d\,x]^2$$
$$(-2575\,i\,A-2398\,B+8795\,i\,A\,\text{Cos}[2\,c]+6974\,B\,\text{Cos}[2\,c]-8795\,A\,\text{Sin}[2\,c]+6974\,i\,B\,\text{Sin}[2\,c])$$
$$\left(\frac{\text{Cos}[3\,c]}{3465\,d}-\frac{i\,\text{Sin}[3\,c]}{3465\,d}\right)+\text{Csc}[c]\,\text{Csc}[c+d\,x]^4\,(120\,i\,A+66\,B-281\,i\,A\,\text{Cos}[2\,c]-$$
$$143\,B\,\text{Cos}[2\,c]+281\,A\,\text{Sin}[2\,c]-143\,i\,B\,\text{Sin}[2\,c])\,\left(\frac{2\,\text{Cos}[3\,c]}{693\,d}-\frac{2\,i\,\text{Sin}[3\,c]}{693\,d}\right)+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]^3\,\left(\frac{4\,\text{Cos}[2\,c]}{3465\,d}-\frac{4\,i\,\text{Sin}[2\,c]}{3465\,d}\right)\,(-1555\,i\,A\,\text{Sin}[d\,x]-1144\,B\,\text{Sin}[d\,x])+$$
$$\text{Csc}[c]\,\text{Csc}[c+d\,x]^5\,\left(\frac{2\,\text{Cos}[2\,c]}{99\,d}-\frac{2\,i\,\text{Sin}[2\,c]}{99\,d}\right)\,(23\,i\,A\,\text{Sin}[d\,x]+11\,B\,\text{Sin}[d\,x])+$$
$$\left.\text{Csc}[c]\,\text{Csc}[c+d\,x]\,\left(\frac{2\,\text{Cos}[2\,c]}{3465\,d}-\frac{2\,i\,\text{Sin}[2\,c]}{3465\,d}\right)\,(10925\,i\,A\,\text{Sin}[d\,x]+10571\,B\,\text{Sin}[d\,x])\right)$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}$$

Problem 178: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\, a\, \mathrm{Tan}[c+d\, x])^{5/2} \left(\frac{3\, b\, B}{2\, a}+B\, \mathrm{Tan}[c+d\, x]\right)}{\mathrm{Tan}[c+d\, x]^{5/2}}\, dx$$

Optimal (type 3, 190 leaves, 9 steps):

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

Result (type 3, 555 leaves):

$$\left(i\, e^{-2\, i\, c}\sqrt{e^{i\, d\, x}}\, \sqrt{-\frac{i\left(-1+e^{2\, i\, (c+d\, x)}\right)}{1+e^{2\, i\, (c+d\, x)}}}\, \left(8\, (2\, a+3\, i\, b)\, \mathrm{Log}\left[e^{i\, (c+d\, x)}+\sqrt{-1+e^{2\, i\, (c+d\, x)}}\right]+\right.\right.$$
$$\sqrt{2}\, a\, \left(-\mathrm{Log}\left[1-3\, e^{2\, i\, (c+d\, x)}-2\sqrt{2}\, e^{i\, (c+d\, x)}\sqrt{-1+e^{2\, i\, (c+d\, x)}}\right]+\right.$$
$$\left.\left.\mathrm{Log}\left[1-3\, e^{2\, i\, (c+d\, x)}+2\sqrt{2}\, e^{i\, (c+d\, x)}\sqrt{-1+e^{2\, i\, (c+d\, x)}}\right]\right)\right)\, (a+i\, a\, \mathrm{Tan}[c+d\, x])^{5/2}$$
$$\left.\left(\frac{3\, b\, B}{2\, a}+B\, \mathrm{Tan}[c+d\, x]\right)\right) \Bigg/ \left(\sqrt{2}\, d\, \sqrt{-1+e^{2\, i\, (c+d\, x)}}\, \sqrt{\frac{e^{i\, (c+d\, x)}}{1+e^{2\, i\, (c+d\, x)}}}\, \mathrm{Sec}[c+d\, x]^{7/2}\right.$$
$$\left.(\mathrm{Cos}[d\, x]+i\, \mathrm{Sin}[d\, x])^{5/2}\, (3\, b\, \mathrm{Cos}[c+d\, x]+2\, a\, \mathrm{Sin}[c+d\, x])\right)+$$
$$\left(\mathrm{Cos}[c+d\, x]^3\, (-i\, \mathrm{Csc}[c]\, (-2\, i\, a\, \mathrm{Cos}[c]+7\, b\, \mathrm{Cos}[c]+i\, b\, \mathrm{Sin}[c])\, (2\, \mathrm{Cos}[2\, c]-2\, i\, \mathrm{Sin}[2\, c])+\right.$$
$$\mathrm{Csc}[c+d\, x]^2\, (-2\, b\, \mathrm{Cos}[2\, c]+2\, i\, b\, \mathrm{Sin}[2\, c])+$$
$$\mathrm{Csc}[c]\, \mathrm{Csc}[c+d\, x]\, (2\, \mathrm{Cos}[2\, c]-2\, i\, \mathrm{Sin}[2\, c])\, (2\, a\, \mathrm{Sin}[d\, x]+7\, i\, b\, \mathrm{Sin}[d\, x]))$$
$$\left.\sqrt{\mathrm{Tan}[c+d\, x]}\, (a+i\, a\, \mathrm{Tan}[c+d\, x])^{5/2}\left(\frac{3\, b\, B}{2\, a}+B\, \mathrm{Tan}[c+d\, x]\right)\right) \Bigg/$$
$$\left(d\, (\mathrm{Cos}[d\, x]+i\, \mathrm{Sin}[d\, x])^2\, (3\, b\, \mathrm{Cos}[c+d\, x]+2\, a\, \mathrm{Sin}[c+d\, x])\right)$$

Problem 185: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 203 leaves, 9 steps):

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

Result (type 3, 552 leaves):

$$-\left(\left(e^{2\,i\,c}\,\sqrt{e^{i\,d\,x}}\,\sqrt{-\frac{i\,\left(-1+e^{2\,i\,(c+d\,x)}\right)}{1+e^{2\,i\,(c+d\,x)}}}\,\left((A-i\,B)\,\text{Log}\left[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]+i\,\sqrt{2}\,B\,\left(\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}-2\,\sqrt{2}\,e^{i\,(c+d\,x)}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]-\text{Log}\left[1-3\,e^{2\,i\,(c+d\,x)}+2\,\sqrt{2}\,e^{i\,(c+d\,x)}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(2\,\sqrt{2}\,d\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}\right)\right)+\left(\text{Sec}[c+d\,x]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,\left(\frac{1}{4}\,(A+3\,i\,B)\,\text{Cos}[2\,d\,x]+(A+i\,B)\,\text{Cos}[4\,d\,x]\,\left(-\frac{1}{12}\,\text{Cos}[2\,c]+\frac{1}{12}\,i\,\text{Sin}[2\,c]\right)+(2\,A+5\,i\,B)\,\left(\frac{1}{6}\,\text{Cos}[2\,c]+\frac{1}{6}\,i\,\text{Sin}[2\,c]\right)+\frac{1}{4}\,(-i\,A+3\,B)\,\text{Sin}[2\,d\,x]+(A+i\,B)\,\left(\frac{1}{12}\,i\,\text{Cos}[2\,c]+\frac{1}{12}\,\text{Sin}[2\,c]\right)\,\text{Sin}[4\,d\,x]\right)\,\sqrt{\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}\right)$$

Problem 189: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 240 leaves, 7 steps):

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

$$\frac{A+i B}{3 d\,\text{Tan}[c+d x]^{3/2}\,(a+i a\,\text{Tan}[c+d x])^{3/2}}+\frac{5 A+3 i B}{2 a d\,\text{Tan}[c+d x]^{3/2}\sqrt{a+i a\,\text{Tan}[c+d x]}}-$$

$$\frac{(21 A+11 i B)\sqrt{a+i a\,\text{Tan}[c+d x]}}{6 a^2 d\,\text{Tan}[c+d x]^{3/2}}+\frac{(39 i A-25 B)\sqrt{a+i a\,\text{Tan}[c+d x]}}{6 a^2 d\sqrt{\text{Tan}[c+d x]}}$$

Result (type 3, 624 leaves) :

$$\left((i A+B)\,e^{i(c-d x)}\sqrt{e^{i d x}}\sqrt{-1+e^{2 i (c+d x)}}\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\,\text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]\right.$$

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

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

$$\frac{1}{d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+i a\,\text{Tan}[c+d x])^{3/2}}\,\text{Sec}[c+d x]\,(\text{Cos}[d x]+i\,\text{Sin}[d x])^2$$

$$\left(-\frac{1}{4}(7 A+5 i B)\,\text{Cos}[2 d x]+(A+i B)\,\text{Cos}[4 d x]\left(-\frac{1}{12}\text{Cos}[2 c]+\frac{1}{12} i\,\text{Sin}[2 c]\right)+\right.$$

$$i\,\text{Csc}[c]\,(20 A\,\text{Cos}[c]+12 i B\,\text{Cos}[c]+6 i A\,\text{Sin}[c]-7 B\,\text{Sin}[c])\left(\frac{1}{6}\text{Cos}[2 c]+\frac{1}{6} i\,\text{Sin}[2 c]\right)+$$

$$\text{Csc}[c+d x]^2\left(-\frac{2}{3} A\,\text{Cos}[2 c]-\frac{2}{3} i A\,\text{Sin}[2 c]\right)+\frac{1}{4} i\,(7 A+5 i B)\,\text{Sin}[2 d x]+$$

$$(A+i B)\left(\frac{1}{12} i\,\text{Cos}[2 c]+\frac{1}{12}\text{Sin}[2 c]\right)\text{Sin}[4 d x]+$$

$$\frac{2}{3}\text{Csc}[c]\,\text{Csc}[c+d x]\left(\frac{5}{2} A\,\text{Cos}[2 c-d x]+\frac{3}{2} i B\,\text{Cos}[2 c-d x]-\right.$$

$$\frac{5}{2} A\,\text{Cos}[2 c+d x]-\frac{3}{2} i B\,\text{Cos}[2 c+d x]+\frac{5}{2} i A\,\text{Sin}[2 c-d x]-\frac{3}{2} B\,\text{Sin}[2 c-d x]-$$

$$\left.\left.\frac{5}{2} i A\,\text{Sin}[2 c+d x]+\frac{3}{2} B\,\text{Sin}[2 c+d x]\right)\right)\sqrt{\text{Tan}[c+d x]}\,(A+B\,\text{Tan}[c+d x])$$

Problem 190: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 249 leaves, 10 steps) :

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

$$\frac{(\text{i}\,A-B)\,\text{Tan}[c+d\,x]^{5/2}}{5\,d\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}}+\frac{(A+3\,\text{i}\,B)\,\text{Tan}[c+d\,x]^{3/2}}{6\,a\,d\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{3/2}}-\frac{(\text{i}\,A-7\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{4\,a^2\,d\,\sqrt{a+\text{i}\,a\,\text{Tan}[c+d\,x]}}$$

Result (type 3, 638 leaves):

$$\left(e^{3\,\text{i}\,c}\,\sqrt{e^{\text{i}\,d\,x}}\,\sqrt{-\frac{\text{i}\,\left(-1+e^{2\,\text{i}\,(c+d\,x)}\right)}{1+e^{2\,\text{i}\,(c+d\,x)}}}\,\left((\text{i}\,A+B)\,\text{Log}\left[e^{\text{i}\,(c+d\,x)}+\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\right]+\right.\right.$$
$$2\,\sqrt{2}\,B\,\left(-\text{Log}\left[1-3\,e^{2\,\text{i}\,(c+d\,x)}-2\,\sqrt{2}\,e^{\text{i}\,(c+d\,x)}\,\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\right]+\right.$$
$$\left.\left.\text{Log}\left[1-3\,e^{2\,\text{i}\,(c+d\,x)}+2\,\sqrt{2}\,e^{\text{i}\,(c+d\,x)}\,\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\right]\right)\right)$$
$$\left.\text{Sec}[c+d\,x]^{3/2}\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(4\,\sqrt{2}\,d\,\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\,\sqrt{\frac{e^{\text{i}\,(c+d\,x)}}{1+e^{2\,\text{i}\,(c+d\,x)}}}\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$
$$\left.(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}\right)+$$
$$\frac{1}{d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}}$$
$$\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])^3$$
$$\left((-2\,\text{i}\,A+17\,B)\,\text{Cos}[2\,d\,x]\left(\frac{\text{Cos}[c]}{20}+\frac{1}{20}\,\text{i}\,\text{Sin}[c]\right)+(4\,A+9\,\text{i}\,B)\,\text{Cos}[4\,d\,x]\right.$$
$$\left(\frac{1}{60}\,\text{i}\,\text{Cos}[c]+\frac{\text{Sin}[c]}{60}\right)+(-23\,\text{i}\,A+123\,B)\left(\frac{1}{120}\,\text{Cos}[3\,c]+\frac{1}{120}\,\text{i}\,\text{Sin}[3\,c]\right)+$$
$$(-\text{i}\,A+B)\,\text{Cos}[6\,d\,x]\left(\frac{1}{40}\,\text{Cos}[3\,c]-\frac{1}{40}\,\text{i}\,\text{Sin}[3\,c]\right)+(2\,A+17\,\text{i}\,B)$$
$$\left(-\frac{\text{Cos}[c]}{20}-\frac{1}{20}\,\text{i}\,\text{Sin}[c]\right)\text{Sin}[2\,d\,x]+(4\,A+9\,\text{i}\,B)\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}\,\text{i}\,\text{Sin}[c]\right)\text{Sin}[4\,d\,x]+$$
$$\left.(A+\text{i}\,B)\left(-\frac{1}{40}\,\text{Cos}[3\,c]+\frac{1}{40}\,\text{i}\,\text{Sin}[3\,c]\right)\text{Sin}[6\,d\,x]\right)\sqrt{\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 191: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 194 leaves, 6 steps):

$$-\frac{\left(\frac{1}{8}-\frac{i}{8}\right)(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+ia\,\text{Tan}[c+dx]}}\right]}{a^{5/2}d}+\frac{(iA-B)\,\text{Tan}[c+dx]^{3/2}}{5d\,(a+ia\,\text{Tan}[c+dx])^{5/2}}+\frac{(A+11iB)\sqrt{\text{Tan}[c+dx]}}{30ad\,(a+ia\,\text{Tan}[c+dx])^{3/2}}+\frac{(13A-37iB)\sqrt{\text{Tan}[c+dx]}}{60a^2d\sqrt{a+ia\,\text{Tan}[c+dx]}}$$

Result (type 3, 527 leaves):

$$\left((iA+B)\,e^{-i(-2c+dx)}\sqrt{e^{idx}}\sqrt{-1+e^{2i(c+dx)}}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right]\right.$$
$$\left.\text{Sec}[c+dx]^{3/2}(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}(A+B\,\text{Tan}[c+dx])\right)\Big/$$
$$\left(4\sqrt{2}\,d\sqrt{-\frac{i\left(-1+e^{2i(c+dx)}\right)}{1+e^{2i(c+dx)}}}\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+ia\,\text{Tan}[c+dx])^{5/2}\right)+$$
$$\frac{1}{d\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+ia\,\text{Tan}[c+dx])^{5/2}}\text{Sec}[c+dx]^2(\text{Cos}[dx]+i\,\text{Sin}[dx])^3$$
$$\left((A-4iB)\,\text{Cos}[4dx]\left(-\frac{\text{Cos}[c]}{60}+\frac{1}{60}i\,\text{Sin}[c]\right)+(3A-2iB)\,\text{Cos}[2dx]\right.$$
$$\left(\frac{\text{Cos}[c]}{20}+\frac{1}{20}i\,\text{Sin}[c]\right)+(17A-23iB)\left(\frac{1}{120}\text{Cos}[3c]+\frac{1}{120}i\,\text{Sin}[3c]\right)+$$
$$(A+iB)\,\text{Cos}[6dx]\left(-\frac{1}{40}\text{Cos}[3c]+\frac{1}{40}i\,\text{Sin}[3c]\right)+(3A-2iB)$$
$$\left(-\frac{1}{20}i\,\text{Cos}[c]+\frac{\text{Sin}[c]}{20}\right)\text{Sin}[2dx]+(iA+4B)\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}i\,\text{Sin}[c]\right)\text{Sin}[4dx]+$$
$$\left.(A+iB)\left(\frac{1}{40}i\,\text{Cos}[3c]+\frac{1}{40}\text{Sin}[3c]\right)\text{Sin}[6dx]\right)\sqrt{\text{Tan}[c+dx]}\,(A+B\,\text{Tan}[c+dx])$$

Problem 192: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Tan}[c+dx]}\,(A+B\,\text{Tan}[c+dx])}{(a+ia\,\text{Tan}[c+dx])^{5/2}}\,dx$$

Optimal (type 3, 196 leaves, 6 steps):

$$-\frac{\left(\frac{1}{8}+\frac{i}{8}\right)(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+ia\,\text{Tan}[c+dx]}}\right]}{a^{5/2}d}+\frac{(iA-B)\sqrt{\text{Tan}[c+dx]}}{5d\,(a+ia\,\text{Tan}[c+dx])^{5/2}}+\frac{(3iA+7B)\sqrt{\text{Tan}[c+dx]}}{30ad\,(a+ia\,\text{Tan}[c+dx])^{3/2}}-\frac{(3iA-13B)\sqrt{\text{Tan}[c+dx]}}{60a^2d\sqrt{a+ia\,\text{Tan}[c+dx]}}$$

Result (type 3, 525 leaves):

$$-\left(\left(\mathrm{i}\,(A-\mathrm{i}\,B)\,e^{3\,\mathrm{i}\,c}\sqrt{e^{\mathrm{i}\,d\,x}}\sqrt{-\frac{\mathrm{i}\left(-1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)}{1+e^{2\,\mathrm{i}\,(c+d\,x)}}}\,\mathrm{Log}\left[e^{\mathrm{i}\,(c+d\,x)}+\sqrt{-1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right]\mathrm{Sec}[c+d\,x]^{3/2}\right.\right.$$
$$\left.(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(4\sqrt{2}\,d\sqrt{-1+e^{2\,\mathrm{i}\,(c+d\,x)}}\right.$$
$$\left.\left.\sqrt{\frac{e^{\mathrm{i}\,(c+d\,x)}}{1+e^{2\,\mathrm{i}\,(c+d\,x)}}}\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\right)+$$
$$\frac{1}{d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}$$
$$\mathrm{Sec}[c+d\,x]^2\,(\mathrm{Cos}[d\,x]+\mathrm{i}\,\mathrm{Sin}[d\,x])^3$$
$$\left((2\,\mathrm{i}\,A+3\,B)\,\mathrm{Cos}[2\,d\,x]\left(\frac{\mathrm{Cos}[c]}{20}+\frac{1}{20}\,\mathrm{i}\,\mathrm{Sin}[c]\right)+(6\,A+\mathrm{i}\,B)\,\mathrm{Cos}[4\,d\,x]\right.$$
$$\left(\frac{1}{60}\,\mathrm{i}\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{60}\right)+(3\,\mathrm{i}\,A+17\,B)\left(\frac{1}{120}\,\mathrm{Cos}[3\,c]+\frac{1}{120}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)+$$
$$(A+\mathrm{i}\,B)\,\mathrm{Cos}[6\,d\,x]\left(\frac{1}{40}\,\mathrm{i}\,\mathrm{Cos}[3\,c]+\frac{1}{40}\,\mathrm{Sin}[3\,c]\right)+(2\,A-3\,\mathrm{i}\,B)$$
$$\left(\frac{\mathrm{Cos}[c]}{20}+\frac{1}{20}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\mathrm{Sin}[2\,d\,x]+(6\,A+\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[c]}{60}-\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)\mathrm{Sin}[4\,d\,x]+$$
$$\left.(A+\mathrm{i}\,B)\left(\frac{1}{40}\,\mathrm{Cos}[3\,c]-\frac{1}{40}\,\mathrm{i}\,\mathrm{Sin}[3\,c]\right)\mathrm{Sin}[6\,d\,x]\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,(A+B\,\mathrm{Tan}[c+d\,x])$$

Problem 193: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 194 leaves, 6 steps):

$$\frac{\left(\frac{1}{8}-\frac{\mathrm{i}}{8}\right)(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{(1+\mathrm{i})\sqrt{a}\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}\right]}{a^{5/2}\,d}+\frac{(A+\mathrm{i}\,B)\sqrt{\mathrm{Tan}[c+d\,x]}}{5\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}+$$
$$\frac{(13\,A+3\,\mathrm{i}\,B)\sqrt{\mathrm{Tan}[c+d\,x]}}{30\,a\,d\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^{3/2}}+\frac{(67\,A-3\,\mathrm{i}\,B)\sqrt{\mathrm{Tan}[c+d\,x]}}{60\,a^2\,d\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 3, 523 leaves):

$$\left((A-iB)\, e^{3ic}\sqrt{e^{idx}}\sqrt{-\frac{i\left(-1+e^{2i(c+dx)}\right)}{1+e^{2i(c+dx)}}}\,\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right]\text{Sec}[c+dx]^{3/2}\right.$$
$$\left.(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}\,(A+B\,\text{Tan}[c+dx])\right)\Big/\left(4\sqrt{2}\,d\sqrt{-1+e^{2i(c+dx)}}\right.$$
$$\left.\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}\right)+$$
$$\frac{1}{d\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}}\text{Sec}[c+dx]^2\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^3$$
$$\left((11A+6iB)\,\text{Cos}[4dx]\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}i\,\text{Sin}[c]\right)+(17A+2iB)\,\text{Cos}[2dx]\right.$$
$$\left(\frac{\text{Cos}[c]}{20}+\frac{1}{20}i\,\text{Sin}[c]\right)+(83A+3iB)\left(\frac{1}{120}\text{Cos}[3c]+\frac{1}{120}i\,\text{Sin}[3c]\right)+$$
$$(A+iB)\,\text{Cos}[6dx]\left(\frac{1}{40}\text{Cos}[3c]-\frac{1}{40}i\,\text{Sin}[3c]\right)+(-17iA+2B)$$
$$\left(\frac{\text{Cos}[c]}{20}+\frac{1}{20}i\,\text{Sin}[c]\right)\text{Sin}[2dx]+(-11iA+6B)\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}i\,\text{Sin}[c]\right)\text{Sin}[4dx]+$$
$$\left.(-iA+B)\left(\frac{1}{40}\text{Cos}[3c]-\frac{1}{40}i\,\text{Sin}[3c]\right)\text{Sin}[6dx]\right)\sqrt{\text{Tan}[c+dx]}\,(A+B\,\text{Tan}[c+dx])$$

Problem 194: Result more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+dx]}{\text{Tan}[c+dx]^{3/2}\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}}\,dx$$

Optimal (type 3, 240 leaves, 7 steps):

$$\frac{\left(\frac{1}{8}+\frac{i}{8}\right)(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]}{a^{5/2}\,d}+$$
$$\frac{A+iB}{5d\sqrt{\text{Tan}[c+dx]}\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}}+\frac{17A+7iB}{30\,a\,d\sqrt{\text{Tan}[c+dx]}\,(a+i\,a\,\text{Tan}[c+dx])^{3/2}}+$$
$$\frac{151A+41iB}{60\,a^2\,d\sqrt{\text{Tan}[c+dx]}\,\sqrt{a+i\,a\,\text{Tan}[c+dx]}}-\frac{(317A+67iB)\sqrt{a+i\,a\,\text{Tan}[c+dx]}}{60\,a^3\,d\sqrt{\text{Tan}[c+dx]}}$$

Result (type 3, 603 leaves):

$$\left((i A+B)\, e^{3 i c} \sqrt{e^{i d x}} \sqrt{-\frac{i\left(-1+e^{2 i (c+d x)}\right)}{1+e^{2 i (c+d x)}}}\ \mathrm{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right] \mathrm{Sec}[c+d x]^{3/2} \right.$$
$$\left.(\mathrm{Cos}[d x]+i\, \mathrm{Sin}[d x])^{5/2} (A+B\, \mathrm{Tan}[c+d x])\right) \Big/ \left(4 \sqrt{2}\, d \sqrt{-1+e^{2 i (c+d x)}}\right.$$
$$\left.\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\ (A\, \mathrm{Cos}[c+d x]+B\, \mathrm{Sin}[c+d x])\ (a+i a\, \mathrm{Tan}[c+d x])^{5/2}\right)+$$
$$\frac{1}{d\, (A\, \mathrm{Cos}[c+d x]+B\, \mathrm{Sin}[c+d x])\ (a+i a\, \mathrm{Tan}[c+d x])^{5/2}}$$
$$\mathrm{Sec}[c+d x]^2\ (\mathrm{Cos}[d x]+i\, \mathrm{Sin}[d x])^3 \left((-16 i A+11 B)\, \mathrm{Cos}[4 d x] \left(\frac{\mathrm{Cos}[c]}{60}-\frac{1}{60} i\, \mathrm{Sin}[c]\right)+\right.$$
$$(-42 i A+17 B)\, \mathrm{Cos}[2 d x] \left(\frac{\mathrm{Cos}[c]}{20}+\frac{1}{20} i\, \mathrm{Sin}[c]\right)+$$
$$\mathrm{Csc}[c]\ (240 A\, \mathrm{Cos}[c]+223 i A\, \mathrm{Sin}[c]-83 B\, \mathrm{Sin}[c]) \left(-\frac{1}{120} \mathrm{Cos}[3 c]-\frac{1}{120} i\, \mathrm{Sin}[3 c]\right)+$$
$$(-i A+B)\, \mathrm{Cos}[6 d x] \left(\frac{1}{40} \mathrm{Cos}[3 c]-\frac{1}{40} i\, \mathrm{Sin}[3 c]\right)+(42 A+17 i B)$$
$$\left(-\frac{\mathrm{Cos}[c]}{20}-\frac{1}{20} i\, \mathrm{Sin}[c]\right) \mathrm{Sin}[2 d x]+(16 A+11 i B) \left(-\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60} i\, \mathrm{Sin}[c]\right) \mathrm{Sin}[4 d x]+$$
$$(A+i B) \left(-\frac{1}{40} \mathrm{Cos}[3 c]+\frac{1}{40} i\, \mathrm{Sin}[3 c]\right) \mathrm{Sin}[6 d x]+2\, \mathrm{Csc}[c]\, \mathrm{Csc}[c+d x]$$
$$\left.\left(\frac{1}{2} i A\, \mathrm{Cos}[3 c-d x]-\frac{1}{2} i A\, \mathrm{Cos}[3 c+d x]-\frac{1}{2} A\, \mathrm{Sin}[3 c-d x]+\frac{1}{2} A\, \mathrm{Sin}[3 c+d x]\right)\right)$$
$$\sqrt{\mathrm{Tan}[c+d x]}\ (A+B\, \mathrm{Tan}[c+d x])$$

Problem 195: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 286 leaves, 8 steps):

$$\frac{\left(\frac{1}{8}+\frac{i}{8}\right) (i A+B)\, \mathrm{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+i a\, \mathrm{Tan}[c+d x]}}\right]}{a^{5/2} d}+\frac{A+i B}{5 d\, \mathrm{Tan}[c+d x]^{3/2} (a+i a\, \mathrm{Tan}[c+d x])^{5/2}}+$$
$$\frac{21 A+11 i B}{30 a d\, \mathrm{Tan}[c+d x]^{3/2} (a+i a\, \mathrm{Tan}[c+d x])^{3/2}}+\frac{89 A+39 i B}{20 a^2 d\, \mathrm{Tan}[c+d x]^{3/2} \sqrt{a+i a\, \mathrm{Tan}[c+d x]}}-$$
$$\frac{(361 A+151 i B) \sqrt{a+i a\, \mathrm{Tan}[c+d x]}}{60 a^3 d\, \mathrm{Tan}[c+d x]^{3/2}}+\frac{(707 i A-317 B) \sqrt{a+i a\, \mathrm{Tan}[c+d x]}}{60 a^3 d \sqrt{\mathrm{Tan}[c+d x]}}$$

Result (type 3, 701 leaves):

$$\left((\mathrm{i}\,A+B)\,e^{-\mathrm{i}\,(-2c+d x)}\sqrt{e^{\mathrm{i}\,d x}}\sqrt{-1+e^{2\,\mathrm{i}\,(c+d x)}}\sqrt{\frac{e^{\mathrm{i}\,(c+d x)}}{1+e^{2\,\mathrm{i}\,(c+d x)}}}\,\mathrm{Log}\left[e^{\mathrm{i}\,(c+d x)}+\sqrt{-1+e^{2\,\mathrm{i}\,(c+d x)}}\right]\right.$$
$$\left.\mathrm{Sec}[c+d x]^{3/2}\,(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d x])\right)\Big/$$
$$\left(4\sqrt{2}\,d\sqrt{-\frac{\mathrm{i}\,\left(-1+e^{2\,\mathrm{i}\,(c+d x)}\right)}{1+e^{2\,\mathrm{i}\,(c+d x)}}}\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}\right)+$$
$$\frac{1}{d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}}$$
$$\mathrm{Sec}[c+d x]^2\,(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x])^3\left((21A+16\,\mathrm{i}\,B)\,\mathrm{Cos}[4 d x]\left(-\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,\mathrm{i}\,\mathrm{Sin}[c]\right)+\right.$$
$$(11A+6\,\mathrm{i}\,B)\,\mathrm{Cos}[2 d x]\left(-\frac{7\,\mathrm{Cos}[c]}{20}-\frac{7}{20}\,\mathrm{i}\,\mathrm{Sin}[c]\right)+$$
$$\mathrm{i}\,\mathrm{Csc}[c]\,(640\,A\,\mathrm{Cos}[c]+240\,\mathrm{i}\,B\,\mathrm{Cos}[c]+343\,\mathrm{i}\,A\,\mathrm{Sin}[c]-223\,B\,\mathrm{Sin}[c])$$
$$\left(\frac{1}{120}\,\mathrm{Cos}[3c]+\frac{1}{120}\,\mathrm{i}\,\mathrm{Sin}[3c]\right)+(A+\mathrm{i}\,B)\,\mathrm{Cos}[6 d x]\left(-\frac{1}{40}\,\mathrm{Cos}[3c]+\frac{1}{40}\,\mathrm{i}\,\mathrm{Sin}[3c]\right)+$$
$$\mathrm{Csc}[c+d x]^2\left(-\frac{2}{3}\,A\,\mathrm{Cos}[3c]-\frac{2}{3}\,\mathrm{i}\,A\,\mathrm{Sin}[3c]\right)+(11A+6\,\mathrm{i}\,B)\left(\frac{7}{20}\,\mathrm{i}\,\mathrm{Cos}[c]-\frac{7\,\mathrm{Sin}[c]}{20}\right)$$
$$\mathrm{Sin}[2 d x]+(21A+16\,\mathrm{i}\,B)\left(\frac{1}{60}\,\mathrm{i}\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{60}\right)\mathrm{Sin}[4 d x]+$$
$$(A+\mathrm{i}\,B)\left(\frac{1}{40}\,\mathrm{i}\,\mathrm{Cos}[3c]+\frac{1}{40}\,\mathrm{Sin}[3c]\right)\mathrm{Sin}[6 d x]+$$
$$\frac{2}{3}\,\mathrm{Csc}[c]\,\mathrm{Csc}[c+d x]\left(4A\,\mathrm{Cos}[3c-d x]+\frac{3}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[3c-d x]-\right.$$
$$4A\,\mathrm{Cos}[3c+d x]-\frac{3}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[3c+d x]+4\,\mathrm{i}\,A\,\mathrm{Sin}[3c-d x]-\frac{3}{2}\,B\,\mathrm{Sin}[3c-d x]-$$
$$\left.\left.4\,\mathrm{i}\,A\,\mathrm{Sin}[3c+d x]+\frac{3}{2}\,B\,\mathrm{Sin}[3c+d x]\right)\right)\sqrt{\mathrm{Tan}[c+d x]}\,(A+B\,\mathrm{Tan}[c+d x])$$

Problem 196: Attempted integration timed out after 120 seconds.

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

Optimal (type 3, 201 leaves, 6 steps):

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

Result (type 1, 1 leaves):

???

Problem 197: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 270 leaves, 8 steps):

$$\frac{a^{2/3}\,\left(A-\mathbb{i}\,B\right)\,x}{2\times 2^{1/3}}-\frac{\sqrt{3}\;a^{2/3}\,\left(\mathbb{i}\,A+B\right)\,\text{ArcTan}\left[\frac{a^{1/3}+2^{2/3}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{1/3}}{\sqrt{3}\;a^{1/3}}\right]}{2^{1/3}\,d}-$$
$$\frac{a^{2/3}\,\left(\mathbb{i}\,A+B\right)\,\text{Log}[\text{Cos}[c+d\,x]]}{2\times 2^{1/3}\,d}-\frac{3\,a^{2/3}\,\left(\mathbb{i}\,A+B\right)\,\text{Log}\left[2^{1/3}\,a^{1/3}-\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{1/3}\right]}{2\times 2^{1/3}\,d}-$$
$$\frac{9\,B\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{2/3}}{8\,d}+\frac{3\,B\,\text{Tan}[c+d\,x]^2\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{2/3}}{8\,d}-$$
$$\frac{3\,\left(4\,\mathbb{i}\,A+B\right)\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{5/3}}{20\,a\,d}$$

Result (type 5, 109 leaves):

$$\frac{1}{40\,d}3\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^{2/3}$$
$$\left(-8\,\mathbb{i}\,A-22\,B+10\,\left(\mathbb{i}\,A+B\right)\,\left(1+e^{2\,\mathbb{i}\,(c+d\,x)}\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,\mathbb{i}\,(c+d\,x)}\right]+\right.$$
$$\left.5\,B\,\text{Sec}[c+d\,x]^2+\left(8\,A-2\,\mathbb{i}\,B\right)\,\text{Tan}[c+d\,x]\right)$$

Problem 198: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 232 leaves, 7 steps):

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

Result (type 5, 120 leaves):

$$\left(3\left(e^{i d x}\right)^{2/3}\left(a+i a \operatorname{Tan}[c+d x]\right)^{2/3}\left(10 A-4 i B-5(A-i B)\left(1+e^{2 i(c+d x)}\right)^{2/3} \text{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2 i(c+d x)}\right]+4 B \operatorname{Tan}[c+d x]\right)\right)\Big/\left(20 d\left(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x]\right)^{2/3}\right)$$

Problem 199: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 202 leaves, 6 steps):

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

Result (type 5, 96 leaves):

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

Problem 200: Unable to integrate problem.

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

Optimal (type 3, 289 leaves, 11 steps):

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

Result (type 8, 36 leaves):

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

Problem 201: Unable to integrate problem.

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

Optimal (type 3, 342 leaves, 12 steps):

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

Result (type 8, 38 leaves):

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

Problem 202: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 213 leaves, 6 steps):

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

Result (type 5, 142 leaves):

$$-\frac{1}{4\times 2^{1/3}\,a\,d}3\,i\,e^{-2\,i\,(c+d\,x)}\left(\frac{a\,e^{2\,i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}\right)^{2/3}\left(-2\,(A+i\,B)\,\left(1+e^{2\,i\,(c+d\,x)}\right)+(A-i\,B)\,e^{2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{2/3}\,\mathrm{Hypergeometric2F1}\left[\frac{2}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]\right)$$

Problem 203: Unable to integrate problem.

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

Optimal (type 3, 213 leaves, 6 steps):

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

Result (type 8, 30 leaves):

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

Problem 204: Unable to integrate problem.

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

Optimal (type 5, 290 leaves, 7 steps):

$$-\left(\left(2\,a^4\,\left(A\,(64+60\,m+19\,m^2+2\,m^3)-i\,B\,(67+60\,m+19\,m^2+2\,m^3)\right)\,\mathrm{Tan}[c+d\,x]^{1+m}\right)\Big/\left(d\,(1+m)\,(2+m)\,(3+m)\,(4+m)\right)\right)+\frac{1}{d\,(1+m)}8\,a^4\,(A-i\,B)\,\mathrm{Hypergeometric2F1}[1,1+m,2+m,i\,\mathrm{Tan}[c+d\,x]]\,\mathrm{Tan}[c+d\,x]^{1+m}+\frac{i\,a\,B\,\mathrm{Tan}[c+d\,x]^{1+m}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^3}{d\,(4+m)}-\frac{(A\,(4+m)-i\,B\,(7+m))\,\mathrm{Tan}[c+d\,x]^{1+m}\,(a^2+i\,a^2\,\mathrm{Tan}[c+d\,x])^2}{d\,(3+m)\,(4+m)}-\left(2\,\left(A\,(4+m)^2-i\,B\,(19+8\,m+m^2)\right)\,\mathrm{Tan}[c+d\,x]^{1+m}\,(a^4+i\,a^4\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(2+m)\,(3+m)\,(4+m)\right)$$

Result (type 8, 36 leaves):

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

Problem 205: Unable to integrate problem.

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

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

$$-\frac{a^3\,\left(A\,(15+11\,m+2\,m^2)-i\,B\,(17+11\,m+2\,m^2)\right)\,\mathrm{Tan}[c+d\,x]^{1+m}}{d\,(1+m)\,(2+m)\,(3+m)}+\frac{1}{d\,(1+m)}4\,a^3\,(A-i\,B)\,\mathrm{Hypergeometric2F1}[1,1+m,2+m,i\,\mathrm{Tan}[c+d\,x]]\,\mathrm{Tan}[c+d\,x]^{1+m}+\frac{i\,a\,B\,\mathrm{Tan}[c+d\,x]^{1+m}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^2}{d\,(3+m)}-\frac{(A\,(3+m)-i\,B\,(5+m))\,\mathrm{Tan}[c+d\,x]^{1+m}\,(a^3+i\,a^3\,\mathrm{Tan}[c+d\,x])}{d\,(2+m)\,(3+m)}$$

Result (type 8, 36 leaves):

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

Problem 206: Unable to integrate problem.

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

Optimal (type 5, 132 leaves, 5 steps):

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

Result (type 8, 36 leaves):

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

Problem 207: Unable to integrate problem.

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

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

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

Result (type 8, 34 leaves):

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

Problem 208: Unable to integrate problem.

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

Optimal (type 5, 168 leaves, 6 steps):

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

Result (type 8, 36 leaves):

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

Problem 209: Unable to integrate problem.

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

Optimal (type 5, 226 leaves, 7 steps):

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

Result (type 8, 36 leaves):

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

Problem 210: Attempted integration timed out after 120 seconds.

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

Optimal (type 5, 308 leaves, 8 steps):

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

Result (type 1, 1 leaves):

???

Problem 211: Attempted integration timed out after 120 seconds.

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

Optimal (type 5, 386 leaves, 9 steps):

$$-\frac{1}{48 a^4 d (1+m)}\left(3-4 m+m^2\right)\left(i B\left(1-m^2\right)-A\left(1-4 m+m^2\right)\right) \text{Hypergeometric2F1}\left[1,\frac{1+m}{2},\frac{3+m}{2},-\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{1+m}-\frac{\left(i B\left(1+3 m-m^2\right)-A\left(13-7 m+m^2\right)\right) \text{Tan}[c+d x]^{1+m}}{48 a^4 d (1+i \text{Tan}[c+d x])^2}-\frac{(2-m)\left(i B\left(2+2 m-m^2\right)-A\left(8-6 m+m^2\right)\right) \text{Tan}[c+d x]^{1+m}}{48 a^4 d (1+i \text{Tan}[c+d x])}+\frac{1}{48 a^4 d (2+m)}(2-m) m\left(B\left(2+2 m-m^2\right)+i A\left(8-6 m+m^2\right)\right) \text{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{2+m}+\frac{(A+i B) \text{Tan}[c+d x]^{1+m}}{8 d (a+i a \text{Tan}[c+d x])^4}+\frac{(i B (1-m)+A (5-m)) \text{Tan}[c+d x]^{1+m}}{24 a d (a+i a \text{Tan}[c+d x])^3}$$

Result (type 1, 1 leaves):

???

Problem 212: Unable to integrate problem.

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

Optimal (type 6, 316 leaves, 9 steps):

$$\left(4 a^3 (A - i B) \text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -i \tan[c+d x], i \tan[c+d x]\right] \sqrt{1+i \tan[c+d x]} \tan[c+d x]^{1+m}\right) \Big/ \left(d (1+m) \sqrt{a+i a \tan[c+d x]}\right) + \left(2 a^2 \left(2 B \left(19+17 m+4 m^2\right)+i A \left(35+34 m+8 m^2\right)\right) \text{Hypergeometric2F1}\left[\frac{1}{2}, -m, \frac{3}{2}, 1+i \tan[c+d x]\right] (-i \tan[c+d x])^{-m} \tan[c+d x]^m \sqrt{a+i a \tan[c+d x]}\right) \Big/ \left(d (3+2 m) (5+2 m)\right) + \frac{2 a^2 (2 i B (4+m) - A (5+2 m)) \tan[c+d x]^{1+m} \sqrt{a+i a \tan[c+d x]}}{d (3+2 m) (5+2 m)} + \frac{2 i a B \tan[c+d x]^{1+m} (a+i a \tan[c+d x])^{3/2}}{d (5+2 m)}$$

Result (type 8, 38 leaves):

$$\int \tan[c+d x]^m (a+i a \tan[c+d x])^{5/2} (A+B \tan[c+d x]) \, dx$$

Problem 213: Unable to integrate problem.

$$\int \tan[c+d x]^m (a+i a \tan[c+d x])^{3/2} (A+B \tan[c+d x]) \, dx$$

Optimal (type 6, 227 leaves, 8 steps):

$$\left(2 a^2 (A - i B) \text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -i \tan[c+d x], i \tan[c+d x]\right] \sqrt{1+i \tan[c+d x]} \tan[c+d x]^{1+m}\right) \Big/ \left(d (1+m) \sqrt{a+i a \tan[c+d x]}\right) + \frac{1}{d (3+2 m)} 2 a (B + (i A + B) (3+2 m)) \text{Hypergeometric2F1}\left[\frac{1}{2}, -m, \frac{3}{2}, 1+i \tan[c+d x]\right] (-i \tan[c+d x])^{-m} \tan[c+d x]^m \sqrt{a+i a \tan[c+d x]} + \frac{2 i a B \tan[c+d x]^{1+m} \sqrt{a+i a \tan[c+d x]}}{d (3+2 m)}$$

Result (type 8, 38 leaves):

$$\int \tan[c+d x]^m (a+i a \tan[c+d x])^{3/2} (A+B \tan[c+d x]) \, dx$$

Problem 214: Unable to integrate problem.

$$\int \tan[c+d x]^m \sqrt{a+i a \tan[c+d x]} (A+B \tan[c+d x]) \, dx$$

Optimal (type 6, 159 leaves, 7 steps):

$$\left(a\,(A-i B)\,\text{AppellF1}\left[1+m,\frac{1}{2},1,2+m,-i\,\text{Tan}[c+d x],i\,\text{Tan}[c+d x]\right]\sqrt{1+i\,\text{Tan}[c+d x]}\,\text{Tan}[c+d x]^{1+m}\right)\Big/\left(d\,(1+m)\sqrt{a+i\,a\,\text{Tan}[c+d x]}\right)+\frac{1}{d}2\,B\,\text{Hypergeometric2F1}\left[\frac{1}{2},-m,\frac{3}{2},1+i\,\text{Tan}[c+d x]\right]\,(-i\,\text{Tan}[c+d x])^{-m}\,\text{Tan}[c+d x]^m\sqrt{a+i\,a\,\text{Tan}[c+d x]}$$

Result (type 8, 38 leaves) :

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

Problem 215: Attempted integration timed out after 120 seconds.

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

Optimal (type 6, 214 leaves, 8 steps) :

$$\frac{(A+i B)\,\text{Tan}[c+d x]^{1+m}}{d\sqrt{a+i\,a\,\text{Tan}[c+d x]}}+\left((A-i B)\,\text{AppellF1}\left[1+m,\frac{1}{2},1,2+m,-i\,\text{Tan}[c+d x],i\,\text{Tan}[c+d x]\right]\sqrt{1+i\,\text{Tan}[c+d x]}\,\text{Tan}[c+d x]^{1+m}\right)\Big/\left(2\,d\,(1+m)\sqrt{a+i\,a\,\text{Tan}[c+d x]}\right)+\frac{1}{a\,d}(i A-B)\,(1+2 m)\,\text{Hypergeometric2F1}\left[\frac{1}{2},-m,\frac{3}{2},1+i\,\text{Tan}[c+d x]\right]\,(-i\,\text{Tan}[c+d x])^{-m}\,\text{Tan}[c+d x]^m\sqrt{a+i\,a\,\text{Tan}[c+d x]}$$

Result (type 1, 1 leaves) :

???

Problem 216: Unable to integrate problem.

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

Optimal (type 6, 285 leaves, 9 steps) :

$$\frac{(A+i B) \operatorname{Tan}[c+d x]^{1+m}}{3 d (a+i a \operatorname{Tan}[c+d x])^{3/2}}+\frac{(A (5-4 m)-i (B+4 B m)) \operatorname{Tan}[c+d x]^{1+m}}{6 a d \sqrt{a+i a \operatorname{Tan}[c+d x]}}+$$
$$\left((A-i B) \operatorname{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -i \operatorname{Tan}[c+d x], i \operatorname{Tan}[c+d x]\right]\right.$$
$$\left.\sqrt{1+i \operatorname{Tan}[c+d x]} \operatorname{Tan}[c+d x]^{1+m}\right) \Big/ \left(4 a d (1+m) \sqrt{a+i a \operatorname{Tan}[c+d x]}\right)+\frac{1}{6 a^2 d}$$
$$(1+2 m) (B+i A (5-4 m)+4 B m) \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, -m, \frac{3}{2}, 1+i \operatorname{Tan}[c+d x]\right]$$
$$(-i \operatorname{Tan}[c+d x])^{-m} \operatorname{Tan}[c+d x]^m \sqrt{a+i a \operatorname{Tan}[c+d x]}$$

Result (type 8, 38 leaves):

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

Problem 217: Unable to integrate problem.

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

Optimal (type 6, 363 leaves, 10 steps):

$$\frac{(A+i B) \operatorname{Tan}[c+d x]^{1+m}}{5 d (a+i a \operatorname{Tan}[c+d x])^{5/2}}+\frac{(i B (1-4 m)+A (11-4 m)) \operatorname{Tan}[c+d x]^{1+m}}{30 a d (a+i a \operatorname{Tan}[c+d x])^{3/2}}-$$
$$\frac{\left(i B \left(13+12 m-16 m^2\right)-A \left(37-52 m+16 m^2\right)\right) \operatorname{Tan}[c+d x]^{1+m}}{60 a^2 d \sqrt{a+i a \operatorname{Tan}[c+d x]}}+$$
$$\left((A-i B) \operatorname{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -i \operatorname{Tan}[c+d x], i \operatorname{Tan}[c+d x]\right]\right.$$
$$\left.\sqrt{1+i \operatorname{Tan}[c+d x]} \operatorname{Tan}[c+d x]^{1+m}\right) \Big/ \left(8 a^2 d (1+m) \sqrt{a+i a \operatorname{Tan}[c+d x]}\right)+$$
$$\frac{1}{60 a^3 d} (1+2 m) \left(B \left(13+12 m-16 m^2\right)+i A \left(37-52 m+16 m^2\right)\right) \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\right.$$
$$\left.-m, \frac{3}{2}, 1+i \operatorname{Tan}[c+d x]\right] (-i \operatorname{Tan}[c+d x])^{-m} \operatorname{Tan}[c+d x]^m \sqrt{a+i a \operatorname{Tan}[c+d x]}$$

Result (type 8, 38 leaves):

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

Problem 218: Unable to integrate problem.

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

Optimal (type 6, 167 leaves, 7 steps):

$$\frac{1}{d\,(1+m)}(A-i B)\,\text{AppellF1}[1+m,1-n,1,2+m,-i\,\text{Tan}[c+d x],i\,\text{Tan}[c+d x]]\,(1+i\,\text{Tan}[c+d x])^{-n}\,\text{Tan}[c+d x]^{1+m}\,(a+i\,a\,\text{Tan}[c+d x])^n+\frac{1}{d\,(1+m)} i\,B\,\text{Hypergeometric2F1}[1+m,1-n,2+m,-i\,\text{Tan}[c+d x]]\,(1+i\,\text{Tan}[c+d x])^{-n}\,\text{Tan}[c+d x]^{1+m}\,(a+i\,a\,\text{Tan}[c+d x])^n$$

Result (type 8, 36 leaves) :

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

Problem 219: Unable to integrate problem.

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

Optimal (type 5, 245 leaves, 6 steps) :

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

Result (type 8, 36 leaves) :

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

Problem 220: Unable to integrate problem.

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

Optimal (type 5, 164 leaves, 5 steps) :

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

Result (type 8, 36 leaves) :

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

Problem 221: Result more than twice size of optimal antiderivative.

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

Optimal (type 5, 111 leaves, 4 steps):

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

Result (type 5, 295 leaves):

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

Problem 222: Result more than twice size of optimal antiderivative.

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

Optimal (type 5, 78 leaves, 3 steps):

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

Result (type 5, 171 leaves):

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

Problem 223: Unable to integrate problem.

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

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

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

Result (type 8, 34 leaves):

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

Problem 224: Unable to integrate problem.

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

Optimal (type 5, 131 leaves, 6 steps):

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

Result (type 8, 36 leaves):

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

Problem 225: Unable to integrate problem.

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

Optimal (type 5, 185 leaves, 7 steps):

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

Result (type 8, 36 leaves):

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

Problem 226: Unable to integrate problem.

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

Optimal (type 6, 383 leaves, 11 steps):

$$-\left(\left(2\,\left(2\,i\,A\,n\,(5+2\,n)+B\,\left(15+10\,n+4\,n^2\right)\right)\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n\right)\Big/\left(d\,(1+2\,n)\,(3+2\,n)\,(5+2\,n)\right)\right)+\frac{1}{d}$$
$$2\,(i\,A+B)\,\text{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]$$
$$(1+i\,\text{Tan}[c+d\,x])^{-n}\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n-$$
$$\left(2\,\left(4\,B\,n\,\left(9+8\,n+2\,n^2\right)+i\,A\,\left(15+36\,n+32\,n^2+8\,n^3\right)\right)\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-i\,\text{Tan}[c+d\,x]\right](1+i\,\text{Tan}[c+d\,x])^{-n}\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n\right)\Big/$$
$$\left(d\,(1+2\,n)\,(3+2\,n)\,(5+2\,n)\right)-\frac{2\,(2\,i\,B\,n-A\,(5+2\,n))\,\text{Tan}[c+d\,x]^{3/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^n}{d\,(3+2\,n)\,(5+2\,n)}+$$
$$\frac{2\,B\,\text{Tan}[c+d\,x]^{5/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^n}{d\,(5+2\,n)}$$

Result (type 8, 38 leaves):

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

Problem 227: Unable to integrate problem.

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

Optimal (type 6, 291 leaves, 10 steps):

$$-\frac{2\,(2\,i\,B\,n-A\,(3+2\,n))\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n}{d\,(1+2\,n)\,(3+2\,n)}-$$
$$\frac{1}{d}2\,(A-i\,B)\,\text{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-i\,\text{Tan}[c+d\,x],i\,\text{Tan}[c+d\,x]\right]$$
$$(1+i\,\text{Tan}[c+d\,x])^{-n}\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n+$$
$$\left(2\,\left(2\,A\,n\,(3+2\,n)-i\,B\,\left(3+6\,n+4\,n^2\right)\right)\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-i\,\text{Tan}[c+d\,x]\right](1+i\,\text{Tan}[c+d\,x])^{-n}\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n\right)\Big/$$
$$\left(d\,(1+2\,n)\,(3+2\,n)\right)+\frac{2\,B\,\text{Tan}[c+d\,x]^{3/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^n}{d\,(3+2\,n)}$$

Result (type 8, 38 leaves):

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

Problem 228: Unable to integrate problem.

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

Optimal (type 6, 215 leaves, 9 steps):

$$\frac{2\,B\,\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n}{d\,(1+2\,n)}-\frac{1}{d}2\,(i\,A+B)\,\text{AppellF1}\left[\frac{1}{2},\,1-n,\,1,\,\frac{3}{2},\,-i\,\text{Tan}[c+d\,x],\,i\,\text{Tan}[c+d\,x]\right]$$
$$(1+i\,\text{Tan}[c+d\,x])^{-n}\,\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n+\frac{1}{d\,(1+2\,n)}$$
$$2\,(2\,B\,n+i\,A\,(1+2\,n))\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1-n,\,\frac{3}{2},\,-i\,\text{Tan}[c+d\,x]\right]$$
$$(1+i\,\text{Tan}[c+d\,x])^{-n}\,\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n$$

Result (type 8, 38 leaves):

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

Problem 229: Unable to integrate problem.

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

Optimal (type 6, 158 leaves, 8 steps):

$$\frac{1}{d}2\,(A-i\,B)\,\text{AppellF1}\left[\frac{1}{2},\,1-n,\,1,\,\frac{3}{2},\,-i\,\text{Tan}[c+d\,x],\,i\,\text{Tan}[c+d\,x]\right]\,(1+i\,\text{Tan}[c+d\,x])^{-n}$$
$$\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n+\frac{1}{d}2\,i\,B\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1-n,\,\frac{3}{2},\,-i\,\text{Tan}[c+d\,x]\right]$$
$$(1+i\,\text{Tan}[c+d\,x])^{-n}\,\sqrt{\text{Tan}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^n$$

Result (type 8, 38 leaves):

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

Problem 230: Unable to integrate problem.

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

Optimal (type 6, 194 leaves, 9 steps):

$$-\frac{2 A \left(a+i a \operatorname{Tan}[c+d x]\right)^n}{d \sqrt{\operatorname{Tan}[c+d x]}}+\frac{1}{d}2 \left(i A+B\right) \operatorname{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-i \operatorname{Tan}[c+d x],i \operatorname{Tan}[c+d x]\right]$$
$$\left(1+i \operatorname{Tan}[c+d x]\right)^{-n} \sqrt{\operatorname{Tan}[c+d x]} \left(a+i a \operatorname{Tan}[c+d x]\right)^n-$$
$$\frac{1}{d}2 i A \left(1-2 n\right) \operatorname{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-i \operatorname{Tan}[c+d x]\right]$$
$$\left(1+i \operatorname{Tan}[c+d x]\right)^{-n} \sqrt{\operatorname{Tan}[c+d x]} \left(a+i a \operatorname{Tan}[c+d x]\right)^n$$

Result (type 8, 38 leaves) :

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

Problem 231: Unable to integrate problem.

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

Optimal (type 6, 247 leaves, 10 steps) :

$$-\frac{2 A \left(a+i a \operatorname{Tan}[c+d x]\right)^n}{3 d \operatorname{Tan}[c+d x]^{3/2}}-\frac{2 \left(3 B+2 i A n\right) \left(a+i a \operatorname{Tan}[c+d x]\right)^n}{3 d \sqrt{\operatorname{Tan}[c+d x]}}-$$
$$\frac{1}{d}2 \left(A-i B\right) \operatorname{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-i \operatorname{Tan}[c+d x],i \operatorname{Tan}[c+d x]\right]$$
$$\left(1+i \operatorname{Tan}[c+d x]\right)^{-n} \sqrt{\operatorname{Tan}[c+d x]} \left(a+i a \operatorname{Tan}[c+d x]\right)^n-\frac{1}{3 d}$$
$$2 \left(1-2 n\right) \left(3 i B-2 A n\right) \operatorname{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-i \operatorname{Tan}[c+d x]\right]$$
$$\left(1+i \operatorname{Tan}[c+d x]\right)^{-n} \sqrt{\operatorname{Tan}[c+d x]} \left(a+i a \operatorname{Tan}[c+d x]\right)^n$$

Result (type 8, 38 leaves) :

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

Problem 240: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c+d x]^2 \left(a+b \operatorname{Tan}[c+d x]\right)^2 \left(A+B \operatorname{Tan}[c+d x]\right) \, dx$$

Optimal (type 3, 148 leaves, 5 steps) :

$$-\left(a^2 A-A b^2-2 a b B\right) x+\frac{\left(2 a A b+a^2 B-b^2 B\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}-\frac{b \left(A b+a B\right) \operatorname{Tan}[c+d x]}{d}-$$
$$\frac{B \left(a+b \operatorname{Tan}[c+d x]\right)^2}{2 d}+\frac{\left(4 A b-a B\right) \left(a+b \operatorname{Tan}[c+d x]\right)^3}{12 b^2 d}+\frac{B \operatorname{Tan}[c+d x] \left(a+b \operatorname{Tan}[c+d x]\right)^3}{4 b d}$$

Result (type 3, 560 leaves) :

$$\left(\left(2\,a\,A\,b+a^2\,B-2\,b^2\,B\right)\,\text{Cos}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(2\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)-\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,(c+d\,x)\,\text{Cos}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\left(\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{Cos}[c+d\,x]^3\,\text{Log}[\text{Cos}[c+d\,x]]\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\frac{b^2\,B\,\text{Sec}[c+d\,x]\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{4\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)}+\left(\text{Cos}[c+d\,x]^2\,\left(3\,a^2\,A\,\text{Sin}[c+d\,x]-4\,A\,b^2\,\text{Sin}[c+d\,x]-8\,a\,b\,B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(3\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\left(\left(A\,b^2\,\text{Sin}[c+d\,x]+2\,a\,b\,B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(3\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 247: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 151 leaves, 6 steps):

$$\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,x-\frac{\left(b^2\,B-a\,\left(2\,A\,b+a\,B\right)\right)\,\text{Cot}[c+d\,x]}{d}+\frac{\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{Cot}[c+d\,x]^2}{2\,d}-\frac{a\,\left(2\,A\,b+a\,B\right)\,\text{Cot}[c+d\,x]^3}{3\,d}-\frac{a^2\,A\,\text{Cot}[c+d\,x]^4}{4\,d}+\frac{\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}$$

Result (type 3, 561 leaves):

$$\left(\left(-2\,a\,A\,b\,\text{Cos}[c+d\,x]-a^2\,B\,\text{Cos}[c+d\,x]\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\right)\Big/\left(3\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)-\frac{a^2\,A\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]}{4\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)}+\left(\left(2\,a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Sin}[c+d\,x]\right)\Big/\left(2\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\left(\left(8\,a\,A\,b\,\text{Cos}[c+d\,x]+4\,a^2\,B\,\text{Cos}[c+d\,x]-3\,b^2\,B\,\text{Cos}[c+d\,x]\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Sin}[c+d\,x]^2\right)\Big/\left(3\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\left(\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,(c+d\,x)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Sin}[c+d\,x]^3\right)\Big/\left(d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Log}[\text{Sin}[c+d\,x]]\,\text{Sin}[c+d\,x]^3\right)\Big/\left(d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 248: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 201 leaves, 6 steps):

$$-\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right) x+\frac{\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right) \text{Log}[\text{Cos}[c+d x]]}{d}-\frac{b \left(2 a A b+a^2 B-b^2 B\right) \text{Tan}[c+d x]}{d}-\frac{(A b+a B) (a+b \text{Tan}[c+d x])^2}{2 d}-\frac{B (a+b \text{Tan}[c+d x])^3}{3 d}+\frac{(5 A b-a B) (a+b \text{Tan}[c+d x])^4}{20 b^2 d}+\frac{B \text{Tan}[c+d x] (a+b \text{Tan}[c+d x])^4}{5 b d}$$

Result (type 3, 680 leaves):

$$\left(\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right) \text{Cos}[c+d x]^4 \text{Log}[\text{Cos}[c+d x]] (a+b \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right) \Big/ \left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+\left(1 \Big/ \left(240 d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)\right) \text{Sec}[c+d x] \left(270 a^2 A b \text{Cos}[c+d x]-120 A b^3 \text{Cos}[c+d x]+90 a^3 B \text{Cos}[c+d x]-360 a b^2 B \text{Cos}[c+d x]-150 a^3 A (c+d x) \text{Cos}[c+d x]+450 a A b^2 (c+d x) \text{Cos}[c+d x]+450 a^2 b B (c+d x) \text{Cos}[c+d x]-150 b^3 B (c+d x) \text{Cos}[c+d x]+90 a^2 A b \text{Cos}[3 (c+d x)]-60 A b^3 \text{Cos}[3 (c+d x)]+30 a^3 B \text{Cos}[3 (c+d x)]-180 a b^2 B \text{Cos}[3 (c+d x)]-75 a^3 A (c+d x) \text{Cos}[3 (c+d x)]+225 a A b^2 (c+d x) \text{Cos}[3 (c+d x)]+225 a^2 b B (c+d x) \text{Cos}[3 (c+d x)]-75 b^3 B (c+d x) \text{Cos}[3 (c+d x)]-15 a^3 A (c+d x) \text{Cos}[5 (c+d x)]+45 a A b^2 (c+d x) \text{Cos}[5 (c+d x)]+45 a^2 b B (c+d x) \text{Cos}[5 (c+d x)]-15 b^3 B (c+d x) \text{Cos}[5 (c+d x)]+30 a^3 A \text{Sin}[c+d x]-60 a A b^2 \text{Sin}[c+d x]-60 a^2 b B \text{Sin}[c+d x]+50 b^3 B \text{Sin}[c+d x]+45 a^3 A \text{Sin}[3 (c+d x)]-120 a A b^2 \text{Sin}[3 (c+d x)]-120 a^2 b B \text{Sin}[3 (c+d x)]+25 b^3 B \text{Sin}[3 (c+d x)]+15 a^3 A \text{Sin}[5 (c+d x)]-60 a A b^2 \text{Sin}[5 (c+d x)]-60 a^2 b B \text{Sin}[5 (c+d x)]+23 b^3 B \text{Sin}[5 (c+d x)]\right) (a+b \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])$$

Problem 249: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d x] (a+b \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 165 leaves, 5 steps):

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

Result (type 3, 600 leaves):

$$\frac{b^3 B\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])}{4\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}-$$
$$\left(b\,(-3\,a\,A\,b-3\,a^2\,B+2\,b^2\,B)\,\mathrm{Cos}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\left(2\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)-$$
$$\left((3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B)\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]^4\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left((-a^3\,A+3\,a\,A\,b^2+3\,a^2\,b\,B-b^3\,B)\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\mathrm{Cos}[c+d\,x]^3\,(9\,a^2\,A\,b\,\mathrm{Sin}[c+d\,x]-4\,A\,b^3\,\mathrm{Sin}[c+d\,x]+3\,a^3\,B\,\mathrm{Sin}[c+d\,x]-12\,a\,b^2\,B\,\mathrm{Sin}[c+d\,x])\right.$$
$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\mathrm{Cos}[c+d\,x]\,(A\,b^3\,\mathrm{Sin}[c+d\,x]+3\,a\,b^2\,B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$
$$\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 255: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^5\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 191 leaves, 6 steps):

$$(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B)\,x+\frac{(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B)\,\mathrm{Cot}[c+d\,x]}{d}+$$
$$\frac{a\,(2\,a^2\,A-5\,A\,b^2-6\,a\,b\,B)\,\mathrm{Cot}[c+d\,x]^2}{4\,d}-\frac{a^2\,(3\,A\,b+2\,a\,B)\,\mathrm{Cot}[c+d\,x]^3}{6\,d}+$$
$$\frac{(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a\,A\,\mathrm{Cot}[c+d\,x]^4\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{4\,d}$$

Result (type 3, 598 leaves):

$$-\left(\left(a^3 A\,(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\right)\Big/\left(4\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)\right)+$$
$$\left(\left(-3\,a^2 A\,b\,\mathrm{Cos}[c+d\,x]-a^3 B\,\mathrm{Cos}[c+d\,x]\right)(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]\right)\Big/$$
$$\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(a\,(2\,a^2 A-3\,A\,b^2-3\,a\,b\,B)\,(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^2\right)\Big/$$
$$\left(2\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(12\,a^2 A\,b\,\mathrm{Cos}[c+d\,x]-3\,A\,b^3\,\mathrm{Cos}[c+d\,x]+4\,a^3 B\,\mathrm{Cos}[c+d\,x]-9\,a\,b^2 B\,\mathrm{Cos}[c+d\,x]\right)\right.$$
$$\left.(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^3\right)\Big/$$
$$\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(3\,a^2 A\,b-A\,b^3+a^3 B-3\,a\,b^2 B\right)(c+d\,x)\,(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^4\right)\Big/$$
$$\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(a^3 A-3\,a\,A\,b^2-3\,a^2 b\,B+b^3 B\right)(b+a\,\mathrm{Cot}[c+d\,x])^3\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]^4\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 256: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^6\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 233 leaves, 7 steps):

$$-\left(a^3 A-3\,a\,A\,b^2-3\,a^2 b\,B+b^3 B\right)x-\frac{\left(a^3 A-3\,a\,A\,b^2-3\,a^2 b\,B+b^3 B\right)\mathrm{Cot}[c+d\,x]}{d}+\frac{\left(3\,a^2 A\,b-A\,b^3+a^3 B-3\,a\,b^2 B\right)\mathrm{Cot}[c+d\,x]^2}{2\,d}+$$
$$\frac{a\,\left(5\,a^2 A-12\,A\,b^2-15\,a\,b\,B\right)\mathrm{Cot}[c+d\,x]^3}{15\,d}-\frac{a^2\,(7\,A\,b+5\,a\,B)\,\mathrm{Cot}[c+d\,x]^4}{20\,d}+$$
$$\frac{\left(3\,a^2 A\,b-A\,b^3+a^3 B-3\,a\,b^2 B\right)\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a\,A\,\mathrm{Cot}[c+d\,x]^5\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{5\,d}$$

Result (type 3, 680 leaves):

$$\left(\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right) (b+a \text{Cot}[c+d x])^3 (B+A \text{Cot}[c+d x]) \text{Log}[\text{Sin}[c+d x]] \text{Sin}[c+d x]^4\right) \Big/ \left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+\left(1 \Big/ \left(240 d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)\right) (b+a \text{Cot}[c+d x])^3 (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] \left(-50 a^3 A \text{Cos}[c+d x]+60 a A b^2 \text{Cos}[c+d x]+60 a^2 b B \text{Cos}[c+d x]-30 b^3 B \text{Cos}[c+d x]+25 a^3 A \text{Cos}[3 (c+d x)]-120 a A b^2 \text{Cos}[3 (c+d x)]-120 a^2 b B \text{Cos}[3 (c+d x)]+45 b^3 B \text{Cos}[3 (c+d x)]-23 a^3 A \text{Cos}[5 (c+d x)]+60 a A b^2 \text{Cos}[5 (c+d x)]+60 a^2 b B \text{Cos}[5 (c+d x)]-15 b^3 B \text{Cos}[5 (c+d x)]+360 a^2 A b \text{Sin}[c+d x]-90 A b^3 \text{Sin}[c+d x]+120 a^3 B \text{Sin}[c+d x]-270 a b^2 B \text{Sin}[c+d x]-150 a^3 A (c+d x) \text{Sin}[c+d x]+450 a A b^2 (c+d x) \text{Sin}[c+d x]+450 a^2 b B (c+d x) \text{Sin}[c+d x]-150 b^3 B (c+d x) \text{Sin}[c+d x]-180 a^2 A b \text{Sin}[3 (c+d x)]+30 A b^3 \text{Sin}[3 (c+d x)]-60 a^3 B \text{Sin}[3 (c+d x)]+90 a b^2 B \text{Sin}[3 (c+d x)]+75 a^3 A (c+d x) \text{Sin}[3 (c+d x)]-225 a A b^2 (c+d x) \text{Sin}[3 (c+d x)]-225 a^2 b B (c+d x) \text{Sin}[3 (c+d x)]+75 b^3 B (c+d x) \text{Sin}[3 (c+d x)]-15 a^3 A (c+d x) \text{Sin}[5 (c+d x)]+45 a A b^2 (c+d x) \text{Sin}[5 (c+d x)]+45 a^2 b B (c+d x) \text{Sin}[5 (c+d x)]-15 b^3 B (c+d x) \text{Sin}[5 (c+d x)]\right)$$

Problem 257: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 263 leaves, 7 steps):

$$-\left(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\right) x+\frac{\left(4 a^3 A b-4 a A b^3+a^4 B-6 a^2 b^2 B+b^4 B\right) \text{Log}[\text{Cos}[c+d x]]}{d}-\frac{b \left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right) \text{Tan}[c+d x]}{d}-\frac{\left(2 a A b+a^2 B-b^2 B\right) (a+b \text{Tan}[c+d x])^2}{2 d}-\frac{(A b+a B) (a+b \text{Tan}[c+d x])^3}{3 d}-\frac{B (a+b \text{Tan}[c+d x])^4}{4 d}+\frac{(6 A b-a B) (a+b \text{Tan}[c+d x])^5}{30 b^2 d}+\frac{B \text{Tan}[c+d x] (a+b \text{Tan}[c+d x])^5}{6 b d}$$

Result (type 3, 958 leaves):

$$\left(\left(4 a^3 A b - 4 a A b^3 + a^4 B - 6 a^2 b^2 B + b^4 B\right) \text{Cos}[c + d x]^5 \text{Log}[\text{Cos}[c + d x]] \left(a + b \text{Tan}[c + d x]\right)^4 \left(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)^4 \left(A \text{Cos}[c + d x] + B \text{Sin}[c + d x]\right)\right) + \left(1 \Big/ \left(480 d \left(a \text{Cos}[c + d x] + b \text{Sin}[c + d x]\right)^4 \left(A \text{Cos}[c + d x] + B \text{Sin}[c + d x]\right)\right)\right) \text{Sec}[c + d x] \left(360 a^3 A b - 480 a A b^3 + 90 a^4 B - 720 a^2 b^2 B + 170 b^4 B - 150 a^4 A (c + d x) + 900 a^2 A b^2 (c + d x) - 150 A b^4 (c + d x) + 600 a^3 b B (c + d x) - 600 a b^3 B (c + d x) + 480 a^3 A b \text{Cos}[2 (c + d x)] - 720 a A b^3 \text{Cos}[2 (c + d x)] + 120 a^4 B \text{Cos}[2 (c + d x)] - 1080 a^2 b^2 B \text{Cos}[2 (c + d x)] + 180 b^4 B \text{Cos}[2 (c + d x)] - 225 a^4 A (c + d x) \text{Cos}[2 (c + d x)] + 1350 a^2 A b^2 (c + d x) \text{Cos}[2 (c + d x)] - 225 A b^4 (c + d x) \text{Cos}[2 (c + d x)] + 900 a^3 b B (c + d x) \text{Cos}[2 (c + d x)] - 900 a b^3 B (c + d x) \text{Cos}[2 (c + d x)] + 120 a^3 A b \text{Cos}[4 (c + d x)] - 240 a A b^3 \text{Cos}[4 (c + d x)] + 30 a^4 B \text{Cos}[4 (c + d x)] - 360 a^2 b^2 B \text{Cos}[4 (c + d x)] + 90 b^4 B \text{Cos}[4 (c + d x)] - 90 a^4 A (c + d x) \text{Cos}[4 (c + d x)] + 540 a^2 A b^2 (c + d x) \text{Cos}[4 (c + d x)] - 90 A b^4 (c + d x) \text{Cos}[4 (c + d x)] + 360 a^3 b B (c + d x) \text{Cos}[4 (c + d x)] - 360 a b^3 B (c + d x) \text{Cos}[4 (c + d x)] - 15 a^4 A (c + d x) \text{Cos}[6 (c + d x)] + 90 a^2 A b^2 (c + d x) \text{Cos}[6 (c + d x)] - 15 A b^4 (c + d x) \text{Cos}[6 (c + d x)] + 60 a^3 b B (c + d x) \text{Cos}[6 (c + d x)] - 60 a b^3 B (c + d x) \text{Cos}[6 (c + d x)] + 75 a^4 A \text{Sin}[2 (c + d x)] - 360 a^2 A b^2 \text{Sin}[2 (c + d x)] + 75 A b^4 \text{Sin}[2 (c + d x)] - 240 a^3 b B \text{Sin}[2 (c + d x)] + 300 a b^3 B \text{Sin}[2 (c + d x)] + 60 a^4 A \text{Sin}[4 (c + d x)] - 360 a^2 A b^2 \text{Sin}[4 (c + d x)] + 48 A b^4 \text{Sin}[4 (c + d x)] - 240 a^3 b B \text{Sin}[4 (c + d x)] + 192 a b^3 B \text{Sin}[4 (c + d x)] + 15 a^4 A \text{Sin}[6 (c + d x)] - 120 a^2 A b^2 \text{Sin}[6 (c + d x)] + 23 A b^4 \text{Sin}[6 (c + d x)] - 80 a^3 b B \text{Sin}[6 (c + d x)] + 92 a b^3 B \text{Sin}[6 (c + d x)]\right) \left(a + b \text{Tan}[c + d x]\right)^4 \left(A + B \text{Tan}[c + d x]\right)$$

Problem 258: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 226 leaves, 6 steps):

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

Result (type 3, 803 leaves):

$$\Big(\big(-a^4 A+6 a^2 A b^2-A b^4+4 a^3 b B-4 a b^3 B\big) \operatorname{Cos}[c+d x]^5 \operatorname{Log}[\operatorname{Cos}[c+d x]]\,(a+b \operatorname{Tan}[c+d x])^4\,(A+B \operatorname{Tan}[c+d x])\Big)\Big/\Big(d\,(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\,(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\Big)+$$

$$\Big(1\Big/\Big(240\, d\,(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4\,(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\Big)\Big)$$
$$\big(540 a^2 A b^2 \operatorname{Cos}[c+d x]-120 A b^4 \operatorname{Cos}[c+d x]+360 a^3 b B \operatorname{Cos}[c+d x]-$$
$$480 a b^3 B \operatorname{Cos}[c+d x]-600 a^3 A b\,(c+d x) \operatorname{Cos}[c+d x]+600 a A b^3\,(c+d x) \operatorname{Cos}[c+d x]-$$
$$150 a^4 B\,(c+d x) \operatorname{Cos}[c+d x]+900 a^2 b^2 B\,(c+d x) \operatorname{Cos}[c+d x]-$$
$$150 b^4 B\,(c+d x) \operatorname{Cos}[c+d x]+180 a^2 A b^2 \operatorname{Cos}[3\,(c+d x)]-60 A b^4 \operatorname{Cos}[3\,(c+d x)]+$$
$$120 a^3 b B \operatorname{Cos}[3\,(c+d x)]-240 a b^3 B \operatorname{Cos}[3\,(c+d x)]-300 a^3 A b\,(c+d x) \operatorname{Cos}[3\,(c+d x)]+$$
$$300 a A b^3\,(c+d x) \operatorname{Cos}[3\,(c+d x)]-75 a^4 B\,(c+d x) \operatorname{Cos}[3\,(c+d x)]+$$
$$450 a^2 b^2 B\,(c+d x) \operatorname{Cos}[3\,(c+d x)]-75 b^4 B\,(c+d x) \operatorname{Cos}[3\,(c+d x)]-$$
$$60 a^3 A b\,(c+d x) \operatorname{Cos}[5\,(c+d x)]+60 a A b^3\,(c+d x) \operatorname{Cos}[5\,(c+d x)]-$$
$$15 a^4 B\,(c+d x) \operatorname{Cos}[5\,(c+d x)]+90 a^2 b^2 B\,(c+d x) \operatorname{Cos}[5\,(c+d x)]-$$
$$15 b^4 B\,(c+d x) \operatorname{Cos}[5\,(c+d x)]+120 a^3 A b \operatorname{Sin}[c+d x]-80 a A b^3 \operatorname{Sin}[c+d x]+$$
$$30 a^4 B \operatorname{Sin}[c+d x]-120 a^2 b^2 B \operatorname{Sin}[c+d x]+50 b^4 B \operatorname{Sin}[c+d x]+180 a^3 A b \operatorname{Sin}[3\,(c+d x)]-$$
$$160 a A b^3 \operatorname{Sin}[3\,(c+d x)]+45 a^4 B \operatorname{Sin}[3\,(c+d x)]-240 a^2 b^2 B \operatorname{Sin}[3\,(c+d x)]+$$
$$25 b^4 B \operatorname{Sin}[3\,(c+d x)]+60 a^3 A b \operatorname{Sin}[5\,(c+d x)]-80 a A b^3 \operatorname{Sin}[5\,(c+d x)]+$$
$$15 a^4 B \operatorname{Sin}[5\,(c+d x)]-120 a^2 b^2 B \operatorname{Sin}[5\,(c+d x)]+23 b^4 B \operatorname{Sin}[5\,(c+d x)]\big)$$
$$(a+b \operatorname{Tan}[c+d x])^4\,(A+B \operatorname{Tan}[c+d x])$$

Problem 259: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 202 leaves, 5 steps):

$$\big(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\big)\,x-\frac{\big(4 a^3 A b-4 a A b^3+a^4 B-6 a^2 b^2 B+b^4 B\big) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}+$$
$$\frac{b\,\big(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\big) \operatorname{Tan}[c+d x]}{d}+\frac{\big(2 a A b+a^2 B-b^2 B\big)\,(a+b \operatorname{Tan}[c+d x])^2}{2 d}+$$
$$\frac{(A b+a B)\,(a+b \operatorname{Tan}[c+d x])^3}{3 d}+\frac{B\,(a+b \operatorname{Tan}[c+d x])^4}{4 d}$$

Result (type 3, 626 leaves):

$$\frac{b^4 B \operatorname{Cos}[c+d x] (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])}{4 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])} -$$

$$\left(b^2 \left(-2 a A b-3 a^2 B+b^2 B\right) \operatorname{Cos}[c+d x]^3 (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) +$$

$$\left(\left(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\right) (c+d x) \operatorname{Cos}[c+d x]^5 (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) +$$

$$\left(\left(-4 a^3 A b+4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right) \operatorname{Cos}[c+d x]^5 \operatorname{Log}[\operatorname{Cos}[c+d x]] (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) +$$

$$\left(2 \operatorname{Cos}[c+d x]^4 \left(9 a^2 A b^2 \operatorname{Sin}[c+d x]-2 A b^4 \operatorname{Sin}[c+d x]+6 a^3 b B \operatorname{Sin}[c+d x]-8 a b^3 B \operatorname{Sin}[c+d x]\right) (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(3 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) +$$

$$\left(\operatorname{Cos}[c+d x]^2 \left(A b^4 \operatorname{Sin}[c+d x]+4 a b^3 B \operatorname{Sin}[c+d x]\right) (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(3 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)$$

Problem 260: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 172 leaves, 6 steps):

$$\left(4 a^3 A b-4 a A b^3+a^4 B-6 a^2 b^2 B+b^4 B\right) x-\frac{b \left(6 a^2 A b-A b^3+4 a^3 B-4 a b^2 B\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}+$$
$$\frac{a^4 A \operatorname{Log}[\operatorname{Sin}[c+d x]]}{d}+\frac{b^2 \left(3 a A b+3 a^2 B-b^2 B\right) \operatorname{Tan}[c+d x]}{d}+$$
$$\frac{b (A b+2 a B) (a+b \operatorname{Tan}[c+d x])^2}{2 d}+\frac{b B (a+b \operatorname{Tan}[c+d x])^3}{3 d}$$

Result (type 3, 590 leaves):

$$\frac{b^3\,(A\,b+4\,a\,B)\,\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])}{2\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}+$$

$$\left(\left(4\,a^3\,A\,b-4\,a\,A\,b^3+a^4\,B-6\,a^2\,b^2\,B+b^4\,B\right)\,(c+d\,x)\,\text{Cos}[c+d\,x]^5\,(a+b\,\text{Tan}[c+d\,x])^4\right.$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$
$$\left(\left(-6\,a^2\,A\,b^2+A\,b^4-4\,a^3\,b\,B+4\,a\,b^3\,B\right)\,\text{Cos}[c+d\,x]^5\,\text{Log}[\text{Cos}[c+d\,x]]\,(a+b\,\text{Tan}[c+d\,x])^4\right.$$
$$\left.(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$
$$\left(a^4\,A\,\text{Cos}[c+d\,x]^5\,\text{Log}[\text{Sin}[c+d\,x]]\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$
$$\left(b^4\,B\,\text{Cos}[c+d\,x]^2\,\text{Sin}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(3\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)-$$
$$\left(2\,\text{Cos}[c+d\,x]^4\,\left(-6\,a\,A\,b^3\,\text{Sin}[c+d\,x]-9\,a^2\,b^2\,B\,\text{Sin}[c+d\,x]+2\,b^4\,B\,\text{Sin}[c+d\,x]\right)\right.$$
$$\left.(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(3\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 261: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

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

$$-\left(a^4\,A-6\,a^2\,A\,b^2+A\,b^4-4\,a^3\,b\,B+4\,a\,b^3\,B\right)\,x-\frac{b^2\,\left(4\,a\,A\,b+6\,a^2\,B-b^2\,B\right)\,\text{Log}[\text{Cos}[c+d\,x]]}{d}+$$
$$\frac{a^3\,(4\,A\,b+a\,B)\,\text{Log}[\text{Sin}[c+d\,x]]}{d}+\frac{b^2\,\left(a^2\,A+A\,b^2+3\,a\,b\,B\right)\,\text{Tan}[c+d\,x]}{d}+$$
$$\frac{b\,(2\,a\,A+b\,B)\,(a+b\,\text{Tan}[c+d\,x])^2}{2\,d}-\frac{a\,A\,\text{Cot}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^3}{d}$$

Result (type 3, 579 leaves):

$$-\left(\left(a^4 A \operatorname{Cos}[c+d x] (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^4\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)\right) - \left(\left(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\right) (c+d x) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) + \left(\left(-4 a A b^3-6 a^2 b^2 B+b^4 B\right) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Log}[\operatorname{Cos}[c+d x]] \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) + \left(\left(4 a^3 A b+a^4 B\right) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) + \left((b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^4 \left(A b^4 \operatorname{Sin}[c+d x]+4 a b^3 B \operatorname{Sin}[c+d x]\right) \operatorname{Tan}[c+d x]\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right) + \left(b^4 B (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^3 \operatorname{Tan}[c+d x]^2\right) \Big/ \left(2 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)$$

Problem 262: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c+d x]^3 (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x]) \, dx$$

Optimal (type 3, 186 leaves, 6 steps):

$$-\left(4 a^3 A b-4 a A b^3+a^4 B-6 a^2 b^2 B+b^4 B\right) x-\frac{b^3 (A b+4 a B) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{d}-\frac{a^2 \left(a^2 A-6 A b^2-4 a b B\right) \operatorname{Log}[\operatorname{Sin}[c+d x]]}{d}+\frac{b^2 \left(3 a A b+a^2 B+b^2 B\right) \operatorname{Tan}[c+d x]}{d}-\frac{a (5 A b+2 a B) \operatorname{Cot}[c+d x] (a+b \operatorname{Tan}[c+d x])^2}{2 d}-\frac{a A \operatorname{Cot}[c+d x]^2 (a+b \operatorname{Tan}[c+d x])^3}{2 d}$$

Result (type 3, 567 leaves):

$$-\left(\left(a^4 A\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^3\right)\Big/\left(2\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)\right)+$$
$$\left(\left(-4\,a^3\,A\,b\,\mathrm{Cos}[c+d\,x]-a^4\,B\,\mathrm{Cos}[c+d\,x]\right)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^4\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)-$$
$$\left(\left(4\,a^3\,A\,b-4\,a\,A\,b^3+a^4\,B-6\,a^2\,b^2\,B+b^4\,B\right)\,(c+d\,x)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^5\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(-A\,b^4-4\,a\,b^3\,B\right)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]\,\mathrm{Sin}[c+d\,x]^5\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(-a^4\,A+6\,a^2\,A\,b^2+4\,a^3\,b\,B\right)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\mathrm{Sin}[c+d\,x]^5\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(b^4\,B\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^5\,\mathrm{Tan}[c+d\,x]\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 263: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 187 leaves, 6 steps):

$$\left(a^4\,A-6\,a^2\,A\,b^2+A\,b^4-4\,a^3\,b\,B+4\,a\,b^3\,B\right)\,x+\frac{a^2\,\left(a^2\,A-3\,A\,b^2-3\,a\,b\,B\right)\,\mathrm{Cot}[c+d\,x]}{d}-\frac{b^4\,B\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{d}-\frac{a\,\left(4\,a^2\,A\,b-4\,A\,b^3+a^3\,B-6\,a\,b^2\,B\right)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-\frac{a\,(2\,A\,b+a\,B)\,\mathrm{Cot}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{2\,d}-\frac{a\,A\,\mathrm{Cot}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])^3}{3\,d}$$

Result (type 3, 592 leaves):

$$-\left(\left(a^4 A \operatorname{Cos}[c+d x] (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^2\right) \Big/ \left(3 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)\right)-$$
$$\frac{a^3 (4 A b+a B) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^3}{2 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])}+$$
$$\left(2 \left(2 a^4 A \operatorname{Cos}[c+d x]-9 a^2 A b^2 \operatorname{Cos}[c+d x]-6 a^3 b B \operatorname{Cos}[c+d x]\right) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^4\right) \Big/ \left(3 d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(\left(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\right) (c+d x) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)-$$
$$\left(b^4 B (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Log}[\operatorname{Cos}[c+d x]] \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)+$$
$$\left(\left(-4 a^3 A b+4 a A b^3-a^4 B+6 a^2 b^2 B\right) (b+a \operatorname{Cot}[c+d x])^4 (B+A \operatorname{Cot}[c+d x]) \operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sin}[c+d x]^5\right) \Big/ \left(d (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4 (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\right)$$

Problem 264: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c+d x]^5 (a+b \operatorname{Tan}[c+d x])^4 (A+B \operatorname{Tan}[c+d x]) \, dx$$

Optimal (type 3, 225 leaves, 6 steps):

$$\left(4 a^3 A b-4 a A b^3+a^4 B-6 a^2 b^2 B+b^4 B\right) x+\frac{a \left(24 a^2 A b-19 A b^3+6 a^3 B-34 a b^2 B\right) \operatorname{Cot}[c+d x]}{6 d}+\frac{a^2 \left(6 a^2 A-13 A b^2-16 a b B\right) \operatorname{Cot}[c+d x]^2}{12 d}+$$
$$\frac{\left(a^4 A-6 a^2 A b^2+A b^4-4 a^3 b B+4 a b^3 B\right) \operatorname{Log}[\operatorname{Sin}[c+d x]]}{d}-$$
$$\frac{a (7 A b+4 a B) \operatorname{Cot}[c+d x]^3 (a+b \operatorname{Tan}[c+d x])^2}{12 d}-\frac{a A \operatorname{Cot}[c+d x]^4 (a+b \operatorname{Tan}[c+d x])^3}{4 d}$$

Result (type 3, 624 leaves):

$$-\left(\left(a^4 A\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]\right)\Big/\left(4\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)\right)+$$
$$\left(\left(-4\,a^3 A\,b\,\mathrm{Cos}[c+d\,x]-a^4 B\,\mathrm{Cos}[c+d\,x]\right)(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^2\right)\Big/\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(a^2\,(a^2 A-3\,A\,b^2-2\,a\,b\,B)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^3\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(2\,\left(8\,a^3 A\,b\,\mathrm{Cos}[c+d\,x]-6\,a\,A\,b^3\,\mathrm{Cos}[c+d\,x]+2\,a^4 B\,\mathrm{Cos}[c+d\,x]-9\,a^2 b^2 B\,\mathrm{Cos}[c+d\,x]\right)(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^4\right)\Big/\left(3\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(4\,a^3 A\,b-4\,a\,A\,b^3+a^4 B-6\,a^2 b^2 B+b^4 B\right)(c+d\,x)\,(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Sin}[c+d\,x]^5\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)+$$
$$\left(\left(a^4 A-6\,a^2 A\,b^2+A\,b^4-4\,a^3 b\,B+4\,a\,b^3 B\right)(b+a\,\mathrm{Cot}[c+d\,x])^4\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\mathrm{Sin}[c+d\,x]^5\right)\Big/\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 265: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^6\,(a+b\,\mathrm{Tan}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 273 leaves, 7 steps):

$$-\left(a^4 A-6\,a^2 A\,b^2+A\,b^4-4\,a^3 b\,B+4\,a\,b^3 B\right)x-\frac{\left(a^4 A-6\,a^2 A\,b^2+A\,b^4-4\,a^3 b\,B+4\,a\,b^3 B\right)\mathrm{Cot}[c+d\,x]}{d}+$$
$$\frac{a\,\left(40\,a^2 A\,b-28\,A\,b^3+10\,a^3 B-55\,a\,b^2 B\right)\mathrm{Cot}[c+d\,x]^2}{20\,d}+\frac{a^2\,\left(10\,a^2 A-18\,A\,b^2-25\,a\,b\,B\right)\mathrm{Cot}[c+d\,x]^3}{30\,d}+$$
$$\frac{\left(4\,a^3 A\,b-4\,a\,A\,b^3+a^4 B-6\,a^2 b^2 B+b^4 B\right)\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{d}-$$
$$\frac{a\,(8\,A\,b+5\,a\,B)\,\mathrm{Cot}[c+d\,x]^4\,(a+b\,\mathrm{Tan}[c+d\,x])^2}{20\,d}-\frac{a\,A\,\mathrm{Cot}[c+d\,x]^5\,(a+b\,\mathrm{Tan}[c+d\,x])^3}{5\,d}$$

Result (type 3, 801 leaves):

$$\Big(\left(4 a^3 A b - 4 a A b^3 + a^4 B - 6 a^2 b^2 B + b^4 B\right) (b + a \mathrm{Cot}[c + d x])^4 \left(B + A \mathrm{Cot}[c + d x]\right) \mathrm{Log}[\mathrm{Sin}[c + d x]] \mathrm{Sin}[c + d x]^5\Big) \Big/ \left(d \left(a \mathrm{Cos}[c + d x] + b \mathrm{Sin}[c + d x]\right)^4 \left(A \mathrm{Cos}[c + d x] + B \mathrm{Sin}[c + d x]\right)\right) +$$

$$\left(1 \Big/ \left(240 d \left(a \mathrm{Cos}[c + d x] + b \mathrm{Sin}[c + d x]\right)^4 \left(A \mathrm{Cos}[c + d x] + B \mathrm{Sin}[c + d x]\right)\right)\right) (b + a \mathrm{Cot}[c + d x])^4 (B + A \mathrm{Cot}[c + d x]) \Big(-50 a^4 A \mathrm{Cos}[c + d x] + 120 a^2 A b^2 \mathrm{Cos}[c + d x] - 30 A b^4 \mathrm{Cos}[c + d x] + 80 a^3 b B \mathrm{Cos}[c + d x] - 120 a b^3 B \mathrm{Cos}[c + d x] + 25 a^4 A \mathrm{Cos}[3 (c + d x)] - 240 a^2 A b^2 \mathrm{Cos}[3 (c + d x)] + 45 A b^4 \mathrm{Cos}[3 (c + d x)] - 160 a^3 b B \mathrm{Cos}[3 (c + d x)] + 180 a b^3 B \mathrm{Cos}[3 (c + d x)] - 23 a^4 A \mathrm{Cos}[5 (c + d x)] + 120 a^2 A b^2 \mathrm{Cos}[5 (c + d x)] - 15 A b^4 \mathrm{Cos}[5 (c + d x)] + 80 a^3 b B \mathrm{Cos}[5 (c + d x)] - 60 a b^3 B \mathrm{Cos}[5 (c + d x)] + 480 a^3 A b \mathrm{Sin}[c + d x] - 360 a A b^3 \mathrm{Sin}[c + d x] + 120 a^4 B \mathrm{Sin}[c + d x] - 540 a^2 b^2 B \mathrm{Sin}[c + d x] - 150 a^4 A (c + d x) \mathrm{Sin}[c + d x] + 900 a^2 A b^2 (c + d x) \mathrm{Sin}[c + d x] - 150 A b^4 (c + d x) \mathrm{Sin}[c + d x] + 600 a^3 b B (c + d x) \mathrm{Sin}[c + d x] - 600 a b^3 B (c + d x) \mathrm{Sin}[c + d x] - 240 a^3 A b \mathrm{Sin}[3 (c + d x)] + 120 a A b^3 \mathrm{Sin}[3 (c + d x)] - 60 a^4 B \mathrm{Sin}[3 (c + d x)] + 180 a^2 b^2 B \mathrm{Sin}[3 (c + d x)] + 75 a^4 A (c + d x) \mathrm{Sin}[3 (c + d x)] - 450 a^2 A b^2 (c + d x) \mathrm{Sin}[3 (c + d x)] + 75 A b^4 (c + d x) \mathrm{Sin}[3 (c + d x)] - 300 a^3 b B (c + d x) \mathrm{Sin}[3 (c + d x)] + 300 a b^3 B (c + d x) \mathrm{Sin}[3 (c + d x)] - 15 a^4 A (c + d x) \mathrm{Sin}[5 (c + d x)] + 90 a^2 A b^2 (c + d x) \mathrm{Sin}[5 (c + d x)] - 15 A b^4 (c + d x) \mathrm{Sin}[5 (c + d x)] + 60 a^3 b B (c + d x) \mathrm{Sin}[5 (c + d x)] - 60 a b^3 B (c + d x) \mathrm{Sin}[5 (c + d x)]\Big)$$

Problem 266: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 323 leaves, 8 steps):

$$-\left(4 a^3 A b - 4 a A b^3 + a^4 B - 6 a^2 b^2 B + b^4 B\right) x - \frac{\left(4 a^3 A b - 4 a A b^3 + a^4 B - 6 a^2 b^2 B + b^4 B\right) \mathrm{Cot}[c + d x]}{d} - \frac{\left(a^4 A - 6 a^2 A b^2 + A b^4 - 4 a^3 b B + 4 a b^3 B\right) \mathrm{Cot}[c + d x]^2}{2 d} + \frac{a \left(20 a^2 A b - 13 A b^3 + 5 a^3 B - 27 a b^2 B\right) \mathrm{Cot}[c + d x]^3}{15 d} + \frac{a^2 \left(5 a^2 A - 8 A b^2 - 12 a b B\right) \mathrm{Cot}[c + d x]^4}{20 d} - \frac{\left(a^4 A - 6 a^2 A b^2 + A b^4 - 4 a^3 b B + 4 a b^3 B\right) \mathrm{Log}[\mathrm{Sin}[c + d x]]}{d} - \frac{a (3 A b + 2 a B) \mathrm{Cot}[c + d x]^5 (a + b \mathrm{Tan}[c + d x])^2}{10 d} - \frac{a A \mathrm{Cot}[c + d x]^6 (a + b \mathrm{Tan}[c + d x])^3}{6 d}$$

Result (type 3, 960 leaves):

$$\Big(\big(-a^4 A+6 a^2 A b^2-A b^4+4 a^3 b B-4 a b^3 B\big)\,(b+a\,\mathrm{Cot}[c+d x])^4\,(B+A\,\mathrm{Cot}[c+d x])\,\mathrm{Log}[\mathrm{Sin}[c+d x]]\,\mathrm{Sin}[c+d x]^5\Big)\Big/\Big(d\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])^4\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\Big)+\Big(1\Big/\Big(480\,d\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])^4\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\Big)\Big)\,(b+a\,\mathrm{Cot}[c+d x])^4\,(B+A\,\mathrm{Cot}[c+d x])\,\mathrm{Csc}[c+d x]\,\big(-170 a^4 A+720 a^2 A b^2-90 A b^4+480 a^3 b B-360 a b^3 B-600 a^3 A b\,(c+d x)+600 a A b^3\,(c+d x)-150 a^4 B\,(c+d x)+900 a^2 b^2 B\,(c+d x)-150 b^4 B\,(c+d x)+180 a^4 A\,\mathrm{Cos}[2\,(c+d x)]-1080 a^2 A b^2\,\mathrm{Cos}[2\,(c+d x)]+120 A b^4\,\mathrm{Cos}[2\,(c+d x)]-720 a^3 b B\,\mathrm{Cos}[2\,(c+d x)]+480 a b^3 B\,\mathrm{Cos}[2\,(c+d x)]+900 a^3 A b\,(c+d x)\,\mathrm{Cos}[2\,(c+d x)]-900 a A b^3\,(c+d x)\,\mathrm{Cos}[2\,(c+d x)]+225 a^4 B\,(c+d x)\,\mathrm{Cos}[2\,(c+d x)]-1350 a^2 b^2 B\,(c+d x)\,\mathrm{Cos}[2\,(c+d x)]+225 b^4 B\,(c+d x)\,\mathrm{Cos}[2\,(c+d x)]-90 a^4 A\,\mathrm{Cos}[4\,(c+d x)]+360 a^2 A b^2\,\mathrm{Cos}[4\,(c+d x)]-30 A b^4\,\mathrm{Cos}[4\,(c+d x)]+240 a^3 b B\,\mathrm{Cos}[4\,(c+d x)]-120 a b^3 B\,\mathrm{Cos}[4\,(c+d x)]-360 a^3 A b\,(c+d x)\,\mathrm{Cos}[4\,(c+d x)]+360 a A b^3\,(c+d x)\,\mathrm{Cos}[4\,(c+d x)]-90 a^4 B\,(c+d x)\,\mathrm{Cos}[4\,(c+d x)]+540 a^2 b^2 B\,(c+d x)\,\mathrm{Cos}[4\,(c+d x)]-90 b^4 B\,(c+d x)\,\mathrm{Cos}[4\,(c+d x)]+60 a^3 A b\,(c+d x)\,\mathrm{Cos}[6\,(c+d x)]-60 a A b^3\,(c+d x)\,\mathrm{Cos}[6\,(c+d x)]+15 a^4 B\,(c+d x)\,\mathrm{Cos}[6\,(c+d x)]-90 a^2 b^2 B\,(c+d x)\,\mathrm{Cos}[6\,(c+d x)]+15 b^4 B\,(c+d x)\,\mathrm{Cos}[6\,(c+d x)]-300 a^3 A b\,\mathrm{Sin}[2\,(c+d x)]+240 a A b^3\,\mathrm{Sin}[2\,(c+d x)]-75 a^4 B\,\mathrm{Sin}[2\,(c+d x)]+360 a^2 b^2 B\,\mathrm{Sin}[2\,(c+d x)]-75 b^4 B\,\mathrm{Sin}[2\,(c+d x)]+192 a^3 A b\,\mathrm{Sin}[4\,(c+d x)]-240 a A b^3\,\mathrm{Sin}[4\,(c+d x)]+48 a^4 B\,\mathrm{Sin}[4\,(c+d x)]-360 a^2 b^2 B\,\mathrm{Sin}[4\,(c+d x)]+60 b^4 B\,\mathrm{Sin}[4\,(c+d x)]-92 a^3 A b\,\mathrm{Sin}[6\,(c+d x)]+80 a A b^3\,\mathrm{Sin}[6\,(c+d x)]-23 a^4 B\,\mathrm{Sin}[6\,(c+d x)]+120 a^2 b^2 B\,\mathrm{Sin}[6\,(c+d x)]-15 b^4 B\,\mathrm{Sin}[6\,(c+d x)]\big)$$

Problem 268: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Tan}[c+d x]^2\,(A+B\,\mathrm{Tan}[c+d x])}{a+b\,\mathrm{Tan}[c+d x]}\,dx$$

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

$$-\frac{(a A+b B)\,x}{a^2+b^2}-\frac{(A b-a B)\,\mathrm{Log}[\mathrm{Cos}[c+d x]]}{(a^2+b^2)\,d}+\frac{a^2\,(A b-a B)\,\mathrm{Log}[a+b\,\mathrm{Tan}[c+d x]]}{b^2\,(a^2+b^2)\,d}+\frac{B\,\mathrm{Tan}[c+d x]}{b\,d}$$

Result (type 3, 203 leaves):

$$\Big((a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])\,(A+B\,\mathrm{Tan}[c+d x])\,\big(-a A b^2 c-b^3 B c-a A b^2 d x-b^3 B d x+(a^2+b^2)\,(-A b+a B)\,\mathrm{Log}[\mathrm{Cos}[c+d x]]+a^2 A b\,\mathrm{Log}[a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]]-a^3 B\,\mathrm{Log}[a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]]+b\,(a^2+b^2)\,B\,\mathrm{Tan}[c+d x]\big)\Big)\Big/\Big((a-i b)\,(a+i b)\,b^2 d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+b\,\mathrm{Tan}[c+d x])\Big)$$

Problem 272: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\mathrm{Cot}[c+d x]^2\,(A+B\,\mathrm{Tan}[c+d x])}{a+b\,\mathrm{Tan}[c+d x]}\,dx$$

Optimal (type 3, 103 leaves, 4 steps):

$$-\frac{(a A+b B) x}{a^2+b^2}-\frac{A \operatorname{Cot}[c+d x]}{a d}-\frac{(A b-a B) \operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^2 d}+\frac{b^2 (A b-a B) \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]}{a^2 \left(a^2+b^2\right) d}$$

Result (type 3, 201 leaves):

$$-\Big(\Big(\big(B+A \operatorname{Cot}[c+d x]\big) \big(a^3 A c+a^2 b B c+a^3 A d x+a^2 b B d x+a A \left(a^2+b^2\right) \operatorname{Cot}[c+d x]-\left(a^2+b^2\right) (-A b+a B) \operatorname{Log}[\operatorname{Sin}[c+d x]]-A b^3 \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]+a b^2 B \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]\big) \big(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\big)\Big) \Big/ \Big(a^2 (a-i b) (a+i b) d \big(b+a \operatorname{Cot}[c+d x]\big) \big(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]\big)\Big)\Big)$$

Problem 275: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 208 leaves, 6 steps):

$$-\frac{\left(2 a A b-a^2 B+b^2 B\right) x}{\left(a^2+b^2\right)^2}+\frac{\left(a^2 A-A b^2+2 a b B\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{\left(a^2+b^2\right)^2 d}+\frac{a^2 \left(a^2 A b+3 A b^3-2 a^3 B-4 a b^2 B\right) \operatorname{Log}[a+b \operatorname{Tan}[c+d x]]}{b^3 \left(a^2+b^2\right)^2 d}-\frac{\left(a A b-2 a^2 B-b^2 B\right) \operatorname{Tan}[c+d x]}{b^2 \left(a^2+b^2\right) d}+\frac{a (A b-a B) \operatorname{Tan}[c+d x]^2}{b \left(a^2+b^2\right) d (a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 869 leaves):

$$\Big((-2\,a\,A\,b+a^2\,B-b^2\,B)\,(c+d\,x)\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)^2\,(a+i\,b)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\big(i\,a^7\,A\,b^3+a^6\,A\,b^4+4\,i\,a^5\,A\,b^5+4\,a^4\,A\,b^6+3\,i\,a^3\,A\,b^7+3\,a^2\,A\,b^8-$$
$$2\,i\,a^8\,b^2\,B-2\,a^7\,b^3\,B-6\,i\,a^6\,b^4\,B-6\,a^5\,b^5\,B-4\,i\,a^4\,b^6\,B-4\,a^3\,b^7\,B\big)$$
$$(c+d\,x)\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)^4\,(a+i\,b)^3\,b^5\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)-$$
$$\Big(i\,(a^4\,A\,b+3\,a^2\,A\,b^3-2\,a^5\,B-4\,a^3\,b^2\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]$$
$$\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(b^3\,(a^2+b^2)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((-A\,b+2\,a\,B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(b^3\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big((a^4\,A\,b+3\,a^2\,A\,b^3-2\,a^5\,B-4\,a^3\,b^2\,B)\,\mathrm{Log}\big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\big]$$
$$\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(2\,b^3\,(a^2+b^2)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])$$
$$(-a^2\,A\,b\,\mathrm{Sin}[c+d\,x]+a^3\,B\,\mathrm{Sin}[c+d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)\,(a+i\,b)\,b^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)+$$
$$\Big(B\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,\mathrm{Tan}[c+d\,x]\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(b^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^2\Big)$$

Problem 276: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Tan}[c+d\,x]^2\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 157 leaves, 5 steps):

$$-\frac{(a^2\,A-A\,b^2+2\,a\,b\,B)\,x}{(a^2+b^2)^2}-\frac{(2\,a\,A\,b-a^2\,B+b^2\,B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{(a^2+b^2)^2\,d}-$$
$$\frac{a\,(2\,A\,b^3-a\,(a^2+3\,b^2)\,B)\,\mathrm{Log}[a+b\,\mathrm{Tan}[c+d\,x]]}{b^2\,(a^2+b^2)^2\,d}-\frac{a^2\,(A\,b-a\,B)}{b^2\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

Result (type 3, 323 leaves):

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

Problem 277: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 115 leaves, 3 steps):

$$\frac{\left(2 a A b-a^2 B+b^2 B\right) x}{\left(a^2+b^2\right)^2}-\frac{\left(a^2 A-A b^2+2 a b B\right) \text{Log}[a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]]}{\left(a^2+b^2\right)^2 d}+\frac{a \left(A b-a B\right)}{b \left(a^2+b^2\right) d \left(a+b \,\text{Tan}[c+d x]\right)}$$

Result (type 3, 252 leaves):

$$\frac{1}{2 \left(a^2+b^2\right)^2 d \left(a+b \,\text{Tan}[c+d x]\right)} \Big(a \Big(-2 i \left(a+i b\right)^2 \left(A-i B\right) \left(c+d x\right)+ \left(-a^2 A+A b^2-2 a b B\right) \text{Log}\left[\left(a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]\right)^2\right]\Big)+\Big(-2 i \left(a+i b\right) \left(i a^2 B+b^2 \left(B \left(c+d x\right)+i A \left(i+c+d x\right)\right)+a b \left(A \left(-i+c+d x\right)-i B \left(i+c+d x\right)\right)\right)+ b \left(-a^2 A+A b^2-2 a b B\right) \text{Log}\left[\left(a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]\right)^2\right]\Big) \text{Tan}[c+d x]+ 2 i \left(a^2 A-A b^2+2 a b B\right) \text{ArcTan}[\text{Tan}[c+d x]] \left(a+b \,\text{Tan}[c+d x]\right)\Big)$$

Problem 278: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{\left(a^2 A-A b^2+2 a b B\right) x}{\left(a^2+b^2\right)^2}+\frac{\left(2 a A b-a^2 B+b^2 B\right) \text{Log}[a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]]}{\left(a^2+b^2\right)^2 d}-\frac{A b-a B}{\left(a^2+b^2\right) d \left(a+b \,\text{Tan}[c+d x]\right)}$$

Result (type 3, 257 leaves):

$$\frac{1}{2\,a\,\left(a^2+b^2\right)^2 d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}\Big(a^2\left(2\,(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,(c+d\,x)+\left(2\,a\,A\,b-a^2\,B+b^2\,B\right)\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\right)+$$
$$b\,\Big(2\,(a+\mathrm{i}\,b)\left(-\mathrm{i}\,A\,b^2+a^2\left(A\,(c+d\,x)-\mathrm{i}\,B\,(-\mathrm{i}+c+d\,x)\right)+a\,b\,\left(A\,(1+\mathrm{i}\,c+\mathrm{i}\,d\,x)+B\,(\mathrm{i}+c+d\,x)\right)\right)+$$
$$a\,\left(2\,a\,A\,b-a^2\,B+b^2\,B\right)\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\Big)\,\mathrm{Tan}[c+d\,x]+$$
$$2\,\mathrm{i}\,a\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)\Big)$$

Problem 279: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 137 leaves, 4 steps):

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

Result (type 3, 325 leaves):

$$\frac{1}{2\,a^2\,\left(a^2+b^2\right)^2 d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}\Big(a\,\Big(2\,(a+\mathrm{i}\,b)^2\,\left(-2\,a\,A\,b+\mathrm{i}\,A\,b^2+a^2\,B\right)(c+d\,x)+2\,A\,\left(a^2+b^2\right)^2\mathrm{Log}[\mathrm{Sin}[c+d\,x]]-$$
$$b\,\left(3\,a^2\,A\,b+A\,b^3-2\,a^3\,B\right)\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\Big)+$$
$$b\,\Big(2\,(a+\mathrm{i}\,b)\left(a^3\,B\,(c+d\,x)-A\,b^3\,(-\mathrm{i}+c+d\,x)+a^2\,b\,\left(B\,(1+\mathrm{i}\,c+\mathrm{i}\,d\,x)-2\,A\,(c+d\,x)\right)-\right.$$
$$\left.\mathrm{i}\,a\,b^2\,\left(B+A\,(-\mathrm{i}+c+d\,x)\right)\right)+2\,A\,\left(a^2+b^2\right)^2\mathrm{Log}[\mathrm{Sin}[c+d\,x]]-$$
$$b\,\left(3\,a^2\,A\,b+A\,b^3-2\,a^3\,B\right)\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]\Big)\,\mathrm{Tan}[c+d\,x]+$$
$$2\,\mathrm{i}\,b\,\left(3\,a^2\,A\,b+A\,b^3-2\,a^3\,B\right)\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)\Big)$$

Problem 280: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 192 leaves, 5 steps):

$$-\frac{\left(a^2 A-A b^2+2 a b B\right) x}{\left(a^2+b^2\right)^2}-\frac{(2 A b-a B) \text{Log}[\text{Sin}[c+d x]]}{a^3 d}+\frac{1}{a^3 \left(a^2+b^2\right)^2 d}$$
$$b^2 \left(4 a^2 A b+2 A b^3-3 a^3 B-a b^2 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]-$$
$$\frac{b \left(a^2 A+2 A b^2-a b B\right)}{a^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])}-\frac{A \text{Cot}[c+d x]}{a d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 873 leaves):

$$-\left(\left(\left(a^2 A-A b^2+2 a b B\right) (c+d x) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\right.$$
$$\left.\left((a-\text{i} b)^2 (a+\text{i} b)^2 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)\right)+$$
$$\left(\left(4 \text{i} a^{10} A b^3+4 a^9 A b^4+6 \text{i} a^8 A b^5+6 a^7 A b^6+2 \text{i} a^6 A b^7+2 a^5 A b^8-\right.\right.$$
$$\left.3 \text{i} a^{11} b^2 B-3 a^{10} b^3 B-4 \text{i} a^9 b^4 B-4 a^8 b^5 B-\text{i} a^7 b^6 B-a^6 b^7 B\right)$$
$$\left.(c+d x) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/$$
$$\left(a^8 (a-\text{i} b)^4 (a+\text{i} b)^3 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)-$$
$$\left(\text{i} \left(4 a^2 A b^3+2 A b^5-3 a^3 b^2 B-a b^4 B\right) \text{ArcTan}[\text{Tan}[c+d x]]\right.$$
$$\left.(B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/$$
$$\left(a^3 \left(a^2+b^2\right)^2 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)-$$
$$\left(A \text{Cot}[c+d x] (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/$$
$$\left(a^2 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left((-2 A b+a B) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] \text{Log}[\text{Sin}[c+d x]]\right.$$
$$\left.(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/\left(a^3 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\left(4 a^2 A b^3+2 A b^5-3 a^3 b^2 B-a b^4 B\right) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]\right.$$
$$\left.\text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right)\Big/$$
$$\left(2 a^3 \left(a^2+b^2\right)^2 d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left((B+A \text{Cot}[c+d x]) \text{Csc}[c+d x] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])\right.$$
$$\left.\left(A b^4 \text{Sin}[c+d x]-a b^3 B \text{Sin}[c+d x]\right)\right)\Big/$$
$$\left(a^3 (a-\text{i} b) (a+\text{i} b) d (b+a \text{Cot}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$$

Problem 281: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^3 (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^2} \, dx$$

Optimal (type 3, 250 leaves, 6 steps):

$$\frac{\left(2\,a\,A\,b-a^2\,B+b^2\,B\right)\,x}{\left(a^2+b^2\right)^2}-\frac{\left(a^2\,A-3\,A\,b^2+2\,a\,b\,B\right)\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^4\,d}-\frac{1}{a^4\,\left(a^2+b^2\right)^2\,d}$$
$$b^3\,\left(5\,a^2\,A\,b+3\,A\,b^3-4\,a^3\,B-2\,a\,b^2\,B\right)\,\mathrm{Log}[a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]]+$$
$$\frac{b\,\left(2\,a^2\,A\,b+3\,A\,b^3-a^3\,B-2\,a\,b^2\,B\right)}{a^3\,\left(a^2+b^2\right)\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}+\frac{\left(3\,A\,b-2\,a\,B\right)\,\mathrm{Cot}[c+d\,x]}{2\,a^2\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}-\frac{A\,\mathrm{Cot}[c+d\,x]^2}{2\,a\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)}$$

Result (type 3, 977 leaves) :

$$-\Big(\Big(\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\left(c+d\,x\right)\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(\left(a-i\,b\right)^2\,\left(a+i\,b\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)\Big)+$$
$$\Big(\Big(-5\,i\,a^{11}\,A\,b^4-5\,a^{10}\,A\,b^5-8\,i\,a^9\,A\,b^6-8\,a^8\,A\,b^7-3\,i\,a^7\,A\,b^8-3\,a^6\,A\,b^9+$$
$$4\,i\,a^{12}\,b^3\,B+4\,a^{11}\,b^4\,B+6\,i\,a^{10}\,b^5\,B+6\,a^9\,b^6\,B+2\,i\,a^8\,b^7\,B+2\,a^7\,b^8\,B\Big)$$
$$\left(c+d\,x\right)\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(a^{10}\,\left(a-i\,b\right)^4\,\left(a+i\,b\right)^3\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)-$$
$$\Big(i\,\left(-5\,a^2\,A\,b^4-3\,A\,b^6+4\,a^3\,b^3\,B+2\,a\,b^5\,B\right)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]$$
$$\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(a^4\,\left(a^2+b^2\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)+$$
$$\Big(\left(2\,A\,b\,\mathrm{Cos}[c+d\,x]-a\,B\,\mathrm{Cos}[c+d\,x]\right)\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)$$
$$\mathrm{Csc}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(a^3\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)-$$
$$\frac{A\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2}{2\,a^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)}+$$
$$\Big(\left(-a^2\,A+3\,A\,b^2-2\,a\,b\,B\right)\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)$$
$$\mathrm{Csc}[c+d\,x]\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(a^4\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)+$$
$$\Big(\left(-5\,a^2\,A\,b^4-3\,A\,b^6+4\,a^3\,b^3\,B+2\,a\,b^5\,B\right)\,\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]$$
$$\mathrm{Log}\Big[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\Big)\Big/$$
$$\Big(2\,a^4\,\left(a^2+b^2\right)^2\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)+$$
$$\Big(\left(B+A\,\mathrm{Cot}[c+d\,x]\right)\,\mathrm{Csc}[c+d\,x]\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)$$
$$\left(-A\,b^5\,\mathrm{Sin}[c+d\,x]+a\,b^4\,B\,\mathrm{Sin}[c+d\,x]\right)\Big)\Big/$$
$$\Big(a^4\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,d\,\left(b+a\,\mathrm{Cot}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)$$

Problem 282: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 331 leaves, 7 steps):

$$\frac{\left(a^3 A-3 a A b^2+3 a^2 b B-b^3 B\right) x}{\left(a^2+b^2\right)^3}+\frac{\left(3 a^2 A b-A b^3-a^3 B+3 a b^2 B\right) \text{Log}[\text{Cos}[c+d x]]}{\left(a^2+b^2\right)^3 d}+\frac{1}{b^4 \left(a^2+b^2\right)^3 d}a^2 \left(a^4 A b+3 a^2 A b^3+6 A b^5-3 a^5 B-9 a^3 b^2 B-10 a b^4 B\right) \text{Log}[a+b \text{Tan}[c+d x]]-\frac{\left(a^3 A b+3 a A b^3-3 a^4 B-6 a^2 b^2 B-b^4 B\right) \text{Tan}[c+d x]}{b^3 \left(a^2+b^2\right)^2 d}+\frac{a (A b-a B) \text{Tan}[c+d x]^3}{2 b \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^2}+\frac{a \left(a^2 A b+5 A b^3-3 a^3 B-7 a b^2 B\right) \text{Tan}[c+d x]^2}{2 b^2 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 1146 leaves):

$$\Big(a^4 (-A b+a B) \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x]) (A+B \text{Tan}[c+d x])\Big)\Big/\Big(2 (a-i b)^2 (a+i b)^2 b^2 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big(\left(a^3 A-3 a A b^2+3 a^2 b B-b^3 B\right) (c+d x) \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A+B \text{Tan}[c+d x])\Big)\Big/\Big((a-i b)^3 (a+i b)^3 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big(\big(i a^{11} A b^4+a^{10} A b^5+5 i a^9 A b^6+5 a^8 A b^7+13 i a^7 A b^8+13 a^6 A b^9+15 i a^5 A b^{10}+15 a^4 A b^{11}+6 i a^3 A b^{12}+6 a^2 A b^{13}-3 i a^{12} b^3 B-3 a^{11} b^4 B-15 i a^{10} b^5 B-15 a^9 b^6 B-31 i a^8 b^7 B-31 a^7 b^8 B-29 i a^6 b^9 B-29 a^5 b^{10} B-10 i a^4 b^{11} B-10 a^3 b^{12} B\big) (c+d x) \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A+B \text{Tan}[c+d x])\Big)\Big/\Big((a-i b)^6 (a+i b)^5 b^7 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)-\Big(i \left(a^6 A b+3 a^4 A b^3+6 a^2 A b^5-3 a^7 B-9 a^5 b^2 B-10 a^3 b^4 B\right) \text{ArcTan}[\text{Tan}[c+d x]] \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A+B \text{Tan}[c+d x])\Big)\Big/\Big(b^4 \left(a^2+b^2\right)^3 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big((-A b+3 a B) \text{Log}[\text{Cos}[c+d x]] \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A+B \text{Tan}[c+d x])\Big)\Big/\Big(b^4 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big(\left(a^6 A b+3 a^4 A b^3+6 a^2 A b^5-3 a^7 B-9 a^5 b^2 B-10 a^3 b^4 B\right) \text{Log}\big[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\big] \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A+B \text{Tan}[c+d x])\Big)\Big/\Big(2 b^4 \left(a^2+b^2\right)^3 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big(\text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 \big(-a^4 A b \text{Sin}[c+d x]-4 a^2 A b^3 \text{Sin}[c+d x]+2 a^5 B \text{Sin}[c+d x]+5 a^3 b^2 B \text{Sin}[c+d x]\big) (A+B \text{Tan}[c+d x])\Big)\Big/\Big((a-i b)^2 (a+i b)^2 b^3 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)+\Big(B \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \text{Tan}[c+d x] (A+B \text{Tan}[c+d x])\Big)\Big/\Big(b^3 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\Big)$$

Problem 283: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^3\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 250 leaves, 6 steps):

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

Result (type 3, 998 leaves):

$$-\Big((a^3\,(-A\,b+a\,B)\,\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x]))\Big/$$
$$\big(2\,(a-i\,b)^2\,(a+i\,b)^2\,b\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\big)\Big)+$$
$$\Big((-3\,a^2\,A\,b+A\,b^3+a^3\,B-3\,a\,b^2\,B)\,(c+d\,x)\,\text{Sec}[c+d\,x]^2$$
$$(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)^3\,(a+i\,b)^3\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)+$$
$$\Big((i\,a^8\,A\,b^5+a^7\,A\,b^6-i\,a^6\,A\,b^7-a^5\,A\,b^8-5\,i\,a^4\,A\,b^9-5\,a^3\,A\,b^{10}-3\,i\,a^2\,A\,b^{11}-3\,a\,A\,b^{12}+i\,a^{11}\,b^2\,B+$$
$$a^{10}\,b^3\,B+5\,i\,a^9\,b^4\,B+5\,a^8\,b^5\,B+13\,i\,a^7\,b^6\,B+13\,a^6\,b^7\,B+15\,i\,a^5\,b^8\,B+15\,a^4\,b^9\,B+6\,i\,a^3\,b^{10}\,B+$$
$$6\,a^2\,b^{11}\,B)\,(c+d\,x)\,\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)^6\,(a+i\,b)^5\,b^5\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)-$$
$$\Big(i\,(a^3\,A\,b^3-3\,a\,A\,b^5+a^6\,B+3\,a^4\,b^2\,B+6\,a^2\,b^4\,B)\,\text{ArcTan}[\text{Tan}[c+d\,x]]$$
$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(b^3\,(a^2+b^2)^3\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)-$$
$$\Big(B\,\text{Log}[\text{Cos}[c+d\,x]]\,\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(b^3\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)+$$
$$\Big((a^3\,A\,b^3-3\,a\,A\,b^5+a^6\,B+3\,a^4\,b^2\,B+6\,a^2\,b^4\,B)\,\text{Log}\big[(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\big]$$
$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big(2\,b^3\,(a^2+b^2)^3\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)+$$
$$\Big(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2$$
$$(3\,a\,A\,b^3\,\text{Sin}[c+d\,x]-a^4\,B\,\text{Sin}[c+d\,x]-4\,a^2\,b^2\,B\,\text{Sin}[c+d\,x])\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)^2\,(a+i\,b)^2\,b^2\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\Big)$$

Problem 284: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Tan}[c+d\,x]^2\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 189 leaves, 4 steps):

$$-\frac{(a^3 A-3\,a\,A\,b^2+3\,a^2\,b\,B-b^3\,B)\,x}{(a^2+b^2)^3}-\frac{(3\,a^2\,A\,b-A\,b^3-a^3\,B+3\,a\,b^2\,B)\,\mathrm{Log}[a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]]}{(a^2+b^2)^3\,d}-\frac{a^2\,(A\,b-a\,B)}{2\,b^2\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^2}+\frac{a\,(2\,A\,b^3-a\,(a^2+3\,b^2)\,B)}{b^2\,(a^2+b^2)^2\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

Result (type 3, 845 leaves):

$$\begin{aligned}
&\left(a^2\,(-A\,b+a\,B)\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left(2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)-\\
&\left((a^3\,A-3\,a\,A\,b^2+3\,a^2\,b\,B-b^3\,B)\,(c+d\,x)\,\mathrm{Sec}[c+d\,x]^2\right.\\
&\qquad\left.(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left((a-\mathrm{i}\,b)^3\,(a+\mathrm{i}\,b)^3\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)+\\
&\left((-3\,\mathrm{i}\,a^9\,A\,b-3\,a^8\,A\,b^2-5\,\mathrm{i}\,a^7\,A\,b^3-5\,a^6\,A\,b^4-\mathrm{i}\,a^5\,A\,b^5-a^4\,A\,b^6+\mathrm{i}\,a^3\,A\,b^7+a^2\,A\,b^8+\right.\\
&\qquad\mathrm{i}\,a^{10}\,B+a^9\,b\,B-\mathrm{i}\,a^8\,b^2\,B-a^7\,b^3\,B-5\,\mathrm{i}\,a^6\,b^4\,B-5\,a^5\,b^5\,B-3\,\mathrm{i}\,a^4\,b^6\,B-3\,a^3\,b^7\,B)\\
&\qquad\left.(c+d\,x)\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left(a^2\,(a-\mathrm{i}\,b)^6\,(a+\mathrm{i}\,b)^5\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)-\\
&\left(\mathrm{i}\,(-3\,a^2\,A\,b+A\,b^3+a^3\,B-3\,a\,b^2\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]^2\right.\\
&\qquad\left.(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left((a^2+b^2)^3\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)+\\
&\left((-3\,a^2\,A\,b+A\,b^3+a^3\,B-3\,a\,b^2\,B)\,\mathrm{Log}\left[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right]\right.\\
&\qquad\left.\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left(2\,(a^2+b^2)^3\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)+\\
&\left(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\right.\\
&\qquad\left.(a^2\,A\,\mathrm{Sin}[c+d\,x]-2\,A\,b^2\,\mathrm{Sin}[c+d\,x]+3\,a\,b\,B\,\mathrm{Sin}[c+d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\\
&\quad\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)
\end{aligned}$$

Problem 285: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x] (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 179 leaves, 4 steps):

$$\frac{\left(3 a^2 A b-A b^3-a^3 B+3 a b^2 B\right) x}{\left(a^2+b^2\right)^3}-\frac{\left(a^3 A-3 a A b^2+3 a^2 b B-b^3 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{\left(a^2+b^2\right)^3 d}+\frac{a (A b-a B)}{2 b \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^2}+\frac{a^2 A-A b^2+2 a b B}{\left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 587 leaves):

$$\left(B \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \left(-\frac{8 a \left(a^2-3 b^2\right) (c+d x)}{\left(a^2+b^2\right)^3}+\frac{8 b \left(-3 a^2+b^2\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{\left(a^2+b^2\right)^3}+\frac{-3 a^2 b+b^3}{(a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{6 \left(a^2-3 b^2\right) \text{Sin}[c+d x]}{\left(a^2+b^2\right)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}+\frac{-b \text{Cos}[2 (c+d x)]+a \text{Sin}[2 (c+d x)]}{\left(a^2+b^2\right) (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}\right) (A+B \text{Tan}[c+d x])\right) \Big/ \left(8 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\right)+\left(A \text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 \left(-\frac{8 b \left(-3 a^2+b^2\right) (c+d x)}{\left(a^2+b^2\right)^3}-\frac{8 a \left(a^2-3 b^2\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{\left(a^2+b^2\right)^3}-\frac{a \left(a^2-3 b^2\right)}{(a-i b)^2 (a+i b)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}+\frac{6 b \left(-3 a^2+b^2\right) \text{Sin}[c+d x]}{a \left(a^2+b^2\right)^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])}+\frac{2 b^2 \text{Sin}[c+d x]^2+a (a+b \text{Sin}[2 (c+d x)])}{a \left(a^2+b^2\right) (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2}\right) (A+B \text{Tan}[c+d x])\right) \Big/ \left(8 d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^3\right)$$

Problem 286: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{A + B\,\mathrm{Tan}[c + d\,x]}{(a + b\,\mathrm{Tan}[c + d\,x])^3}\,dx$$

Optimal (type 3, 175 leaves, 4 steps):

$$\frac{(a^3 A - 3\,a\,A\,b^2 + 3\,a^2\,b\,B - b^3\,B)\,x}{(a^2 + b^2)^3} + \frac{(3\,a^2\,A\,b - A\,b^3 - a^3\,B + 3\,a\,b^2\,B)\,\mathrm{Log}[a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x]]}{(a^2 + b^2)^3\,d} - \frac{A\,b - a\,B}{2\,(a^2 + b^2)\,d\,(a + b\,\mathrm{Tan}[c + d\,x])^2} - \frac{2\,a\,A\,b - a^2\,B + b^2\,B}{(a^2 + b^2)^2\,d\,(a + b\,\mathrm{Tan}[c + d\,x])}$$

Result (type 3, 854 leaves):

$$\left(b^2\,(-A\,b + a\,B)\,\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left(2\,(a - i\,b)^2\,(a + i\,b)^2\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right) +$$
$$\left((a^3 A - 3\,a\,A\,b^2 + 3\,a^2\,b\,B - b^3\,B)\,(c + d\,x)\,\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^3\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left((a - i\,b)^3\,(a + i\,b)^3\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right) +$$
$$\left((3\,i\,a^9\,A\,b + 3\,a^8\,A\,b^2 + 5\,i\,a^7\,A\,b^3 + 5\,a^6\,A\,b^4 + i\,a^5\,A\,b^5 + a^4\,A\,b^6 - i\,a^3\,A\,b^7 - a^2\,A\,b^8 - i\,a^{10}\,B - a^9\,b\,B + i\,a^8\,b^2\,B + a^7\,b^3\,B + 5\,i\,a^6\,b^4\,B + 5\,a^5\,b^5\,B + 3\,i\,a^4\,b^6\,B + 3\,a^3\,b^7\,B)\,(c + d\,x)\,\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^3\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left(a^2\,(a - i\,b)^6\,(a + i\,b)^5\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right) -$$
$$\left(i\,(3\,a^2\,A\,b - A\,b^3 - a^3\,B + 3\,a\,b^2\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[c + d\,x]]\,\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^3\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left((a^2 + b^2)^3\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right) +$$
$$\left((3\,a^2\,A\,b - A\,b^3 - a^3\,B + 3\,a\,b^2\,B)\,\mathrm{Log}\left[(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^2\right]\,\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^3\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left(2\,(a^2 + b^2)^3\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right) +$$
$$\left(\mathrm{Sec}[c + d\,x]^2\,(a\,\mathrm{Cos}[c + d\,x] + b\,\mathrm{Sin}[c + d\,x])^2\,(3\,a\,A\,b^2\,\mathrm{Sin}[c + d\,x] - 2\,a^2\,b\,B\,\mathrm{Sin}[c + d\,x] + b^3\,B\,\mathrm{Sin}[c + d\,x])\,(A + B\,\mathrm{Tan}[c + d\,x])\right) \Big/ \left(a\,(a - i\,b)^2\,(a + i\,b)^2\,d\,(A\,\mathrm{Cos}[c + d\,x] + B\,\mathrm{Sin}[c + d\,x])\,(a + b\,\mathrm{Tan}[c + d\,x])^3\right)$$

Problem 287: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c + d\,x]\,(A + B\,\mathrm{Tan}[c + d\,x])}{(a + b\,\mathrm{Tan}[c + d\,x])^3}\,dx$$

Optimal (type 3, 215 leaves, 5 steps):

$$-\frac{\left(3 a^2 A b-A b^3-a^3 B+3 a b^2 B\right) x}{\left(a^2+b^2\right)^3}+\frac{A \operatorname{Log}[\operatorname{Sin}[c+d x]]}{a^3 d}-\frac{1}{a^3\left(a^2+b^2\right)^3 d}b\left(6 a^4 A b+3 a^2 A b^3+A b^5-3 a^5 B+a^3 b^2 B\right) \operatorname{Log}[a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]]+\frac{b(A b-a B)}{2 a\left(a^2+b^2\right) d(a+b \operatorname{Tan}[c+d x])^2}+\frac{b\left(3 a^2 A b+A b^3-2 a^3 B\right)}{a^2\left(a^2+b^2\right)^2 d(a+b \operatorname{Tan}[c+d x])}$$

Result (type 3, 1004 leaves):

$$-\left(\left(b^3(-A b+a B) \operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(2 a(a-\mathrm{i} b)^2(a+\mathrm{i} b)^2 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)\right)+$$
$$\left(\left(-3 a^2 A b+A b^3+a^3 B-3 a b^2 B\right)(c+d x) \operatorname{Sec}[c+d x]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left((a-\mathrm{i} b)^3(a+\mathrm{i} b)^3 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\left(\left(-6 \mathrm{i} a^{14} A b^2-6 a^{13} A b^3-15 \mathrm{i} a^{12} A b^4-15 a^{11} A b^5-13 \mathrm{i} a^{10} A b^6-13 a^9 A b^7-5 \mathrm{i} a^8 A b^8-5 a^7 A b^9-\mathrm{i} a^6 A b^{10}-a^5 A b^{11}+3 \mathrm{i} a^{15} b B+3 a^{14} b^2 B+5 \mathrm{i} a^{13} b^3 B+5 a^{12} b^4 B+\mathrm{i} a^{11} b^5 B+a^{10} b^6 B-\mathrm{i} a^9 b^7 B-a^8 b^8 B\right)(c+d x) \operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(a^8(a-\mathrm{i} b)^6(a+\mathrm{i} b)^5 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)-$$
$$\left(\mathrm{i}\left(-6 a^4 A b^2-3 a^2 A b^4-A b^6+3 a^5 b B-a^3 b^3 B\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]] \operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(a^3\left(a^2+b^2\right)^3 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\left(A \operatorname{Log}[\operatorname{Sin}[c+d x]] \operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(a^3 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\left(\left(-6 a^4 A b^2-3 a^2 A b^4-A b^6+3 a^5 b B-a^3 b^3 B\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right] \operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(2 a^3\left(a^2+b^2\right)^3 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)+$$
$$\left(\operatorname{Sec}[c+d x]^2(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\left(-4 a^2 A b^3 \operatorname{Sin}[c+d x]-A b^5 \operatorname{Sin}[c+d x]+3 a^3 b^2 B \operatorname{Sin}[c+d x]\right)(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(a^3(a-\mathrm{i} b)^2(a+\mathrm{i} b)^2 d(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])(a+b \operatorname{Tan}[c+d x])^3\right)$$

Problem 288: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]^2(A+B \operatorname{Tan}[c+d x])}{(a+b \operatorname{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 287 leaves, 6 steps):

$$-\frac{\left(a^3 A-3 a A b^2+3 a^2 b B-b^3 B\right) x}{\left(a^2+b^2\right)^3}-\frac{(3 A b-a B) \text{Log}[\text{Sin}[c+d x]]}{a^4 d}+\frac{1}{a^4 \left(a^2+b^2\right)^3 d}$$
$$b^2 \left(10 a^4 A b+9 a^2 A b^3+3 A b^5-6 a^5 B-3 a^3 b^2 B-a b^4 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]-$$
$$\frac{b \left(2 a^2 A+3 A b^2-a b B\right)}{2 a^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^2}-\frac{A \text{Cot}[c+d x]}{a d (a+b \text{Tan}[c+d x])^2}-$$
$$\frac{b \left(a^4 A+6 a^2 A b^2+3 A b^4-3 a^3 b B-a b^3 B\right)}{a^3 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 1150 leaves):

$$\left(b^4 (-A b+a B) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])\right)\Big/$$
$$\left(2 a^2 (a-i b)^2 (a+i b)^2 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)-$$
$$\left(\left(a^3 A-3 a A b^2+3 a^2 b B-b^3 B\right) (c+d x) (B+A \text{Cot}[c+d x])\right.$$
$$\left.\text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/$$
$$\left((a-i b)^3 (a+i b)^3 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\left(10 i a^{15} A b^3+10 a^{14} A b^4+29 i a^{13} A b^5+29 a^{12} A b^6+31 i a^{11} A b^7+31 a^{10} A b^8+\right.\right.$$
$$15 i a^9 A b^9+15 a^8 A b^{10}+3 i a^7 A b^{11}+3 a^6 A b^{12}-6 i a^{16} b^2 B-6 a^{15} b^3 B-15 i a^{14} b^4 B-$$
$$\left.15 a^{13} b^5 B-13 i a^{12} b^6 B-13 a^{11} b^7 B-5 i a^{10} b^8 B-5 a^9 b^9 B-i a^8 b^{10} B-a^7 b^{11} B\right)$$
$$\left.(c+d x) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/$$
$$\left(a^{10} (a-i b)^6 (a+i b)^5 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)-$$
$$\left(i \left(10 a^4 A b^3+9 a^2 A b^5+3 A b^7-6 a^5 b^2 B-3 a^3 b^4 B-a b^6 B\right) \text{ArcTan}[\text{Tan}[c+d x]]\right.$$
$$\left.(B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/$$
$$\left(a^4 \left(a^2+b^2\right)^3 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)-$$
$$\left(A \text{Cot}[c+d x] (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/$$
$$\left(a^3 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left((-3 A b+a B) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 \text{Log}[\text{Sin}[c+d x]]\right.$$
$$\left.(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/\left(a^4 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left(\left(10 a^4 A b^3+9 a^2 A b^5+3 A b^7-6 a^5 b^2 B-3 a^3 b^4 B-a b^6 B\right) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2\right.$$
$$\left.\text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3\right)\Big/$$
$$\left(2 a^4 \left(a^2+b^2\right)^3 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$
$$\left((B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right.$$
$$\left.\left(5 a^2 A b^4 \text{Sin}[c+d x]+2 A b^6 \text{Sin}[c+d x]-4 a^3 b^3 B \text{Sin}[c+d x]-a b^5 B \text{Sin}[c+d x]\right)\right)\Big/$$
$$\left(a^4 (a-i b)^2 (a+i b)^2 d (b+a \text{Cot}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$$

Problem 289: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]^3\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 352 leaves, 7 steps):

$$\frac{\left(3\,a^2\,A\,b-A\,b^3-a^3\,B+3\,a\,b^2\,B\right)\,x}{\left(a^2+b^2\right)^3}-\frac{\left(a^2\,A-6\,A\,b^2+3\,a\,b\,B\right)\,\text{Log}[\text{Sin}[c+d\,x]]}{a^5\,d}-\frac{1}{a^5\,\left(a^2+b^2\right)^3\,d}$$
$$b^3\,\left(15\,a^4\,A\,b+17\,a^2\,A\,b^3+6\,A\,b^5-10\,a^5\,B-9\,a^3\,b^2\,B-3\,a\,b^4\,B\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]+$$
$$\frac{b\,\left(5\,a^2\,A\,b+6\,A\,b^3-2\,a^3\,B-3\,a\,b^2\,B\right)}{2\,a^3\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+\frac{\left(2\,A\,b-a\,B\right)\,\text{Cot}[c+d\,x]}{a^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}-$$
$$\frac{A\,\text{Cot}[c+d\,x]^2}{2\,a\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+\frac{b\,\left(3\,a^4\,A\,b+11\,a^2\,A\,b^3+6\,A\,b^5-a^5\,B-6\,a^3\,b^2\,B-3\,a\,b^4\,B\right)}{a^4\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 1923 leaves):

$$
\begin{aligned}
&((-15\,\text{i}\,a^{16} A b^4 - 15 a^{15} A b^5 - 47\,\text{i}\,a^{14} A b^6 - 47 a^{13} A b^7 - 55\,\text{i}\,a^{12} A b^8 - 55 a^{11} A b^9 - 29\,\text{i}\,a^{10} A b^{10} - \\
&\quad 29 a^9 A b^{11} - 6\,\text{i}\,a^8 A b^{12} - 6 a^7 A b^{13} + 10\,\text{i}\,a^{17} b^3 B + 10 a^{16} b^4 B + 29\,\text{i}\,a^{15} b^5 B + 29 a^{14} b^6 B + \\
&\quad 31\,\text{i}\,a^{13} b^7 B + 31 a^{12} b^8 B + 15\,\text{i}\,a^{11} b^9 B + 15 a^{10} b^{10} B + 3\,\text{i}\,a^9 b^{11} B + 3 a^8 b^{12} B) \\
&\quad (c + d x)\ (B + A\,\text{Cot}[c + d x])\ \text{Csc}[c + d x]^2\ (a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x])^3) \Big/ \\
&\ (a^{12}\ (a - \text{i}\,b)^6\ (a + \text{i}\,b)^5\ d\ (b + a\,\text{Cot}[c + d x])^3\ (A\,\text{Cos}[c + d x] + B\,\text{Sin}[c + d x])) - \\
&(\text{i}\ (-15 a^4 A b^4 - 17 a^2 A b^6 - 6 A b^8 + 10 a^5 b^3 B + 9 a^3 b^5 B + 3 a b^7 B)\ \text{ArcTan}[\text{Tan}[c + d x]] \\
&\quad (B + A\,\text{Cot}[c + d x])\ \text{Csc}[c + d x]^2\ (a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x])^3) \Big/ \\
&\ (a^5\ (a^2 + b^2)^3\ d\ (b + a\,\text{Cot}[c + d x])^3\ (A\,\text{Cos}[c + d x] + B\,\text{Sin}[c + d x])) + \\
&((-a^2 A + 6 A b^2 - 3 a b B)\ (B + A\,\text{Cot}[c + d x])\ \text{Csc}[c + d x]^2 \\
&\quad \text{Log}[\text{Sin}[c + d x]]\ (a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x])^3) \Big/ \\
&\ (a^5\ d\ (b + a\,\text{Cot}[c + d x])^3\ (A\,\text{Cos}[c + d x] + B\,\text{Sin}[c + d x])) + \\
&((-15 a^4 A b^4 - 17 a^2 A b^6 - 6 A b^8 + 10 a^5 b^3 B + 9 a^3 b^5 B + 3 a b^7 B)\ (B + A\,\text{Cot}[c + d x]) \\
&\quad \text{Csc}[c + d x]^2\ \text{Log}[(a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x])^2]\ (a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x])^3) \Big/ \\
&\ (2 a^5\ (a^2 + b^2)^3\ d\ (b + a\,\text{Cot}[c + d x])^3\ (A\,\text{Cos}[c + d x] + B\,\text{Sin}[c + d x])) + \\
&((B + A\,\text{Cot}[c + d x])\ \text{Csc}[c + d x]^4\ (a\,\text{Cos}[c + d x] + b\,\text{Sin}[c + d x]) \\
&\quad (-2 a^{10} A - 2 a^8 A b^2 + 6 a^6 A b^4 - 6 a^4 A b^6 - 21 a^2 A b^8 - 9 A b^{10} - 2 a^9 b B - 6 a^7 b^3 B + \\
&\quad 7 a^5 b^5 B + 17 a^3 b^7 B + 6 a b^9 B + 3 a^9 A b\ (c + d x) + 8 a^7 A b^3\ (c + d x) - 3 a^5 A b^5\ (c + d x) - \\
&\quad a^{10} B\ (c + d x) + 9 a^6 b^4 B\ (c + d x) - 2 a^{10} A\,\text{Cos}[2\ (c + d x)] - 4 a^8 A b^2\,\text{Cos}[2\ (c + d x)] + \\
&\quad 26 a^4 A b^6\,\text{Cos}[2\ (c + d x)] + 36 a^2 A b^8\,\text{Cos}[2\ (c + d x)] + 12 A b^{10}\,\text{Cos}[2\ (c + d x)] - \\
&\quad 18 a^5 b^5 B\,\text{Cos}[2\ (c + d x)] - 26 a^3 b^7 B\,\text{Cos}[2\ (c + d x)] - 8 a b^9 B\,\text{Cos}[2\ (c + d x)] - \\
&\quad 12 a^7 A b^3\ (c + d x)\ \text{Cos}[2\ (c + d x)] + 4 a^5 A b^5\ (c + d x)\ \text{Cos}[2\ (c + d x)] + \\
&\quad 4 a^8 b^2 B\ (c + d x)\ \text{Cos}[2\ (c + d x)] - 12 a^6 b^4 B\ (c + d x)\ \text{Cos}[2\ (c + d x)] - \\
&\quad 6 a^8 A b^2\,\text{Cos}[4\ (c + d x)] - 18 a^6 A b^4\,\text{Cos}[4\ (c + d x)] - 24 a^4 A b^6\,\text{Cos}[4\ (c + d x)] - \\
&\quad 15 a^2 A b^8\,\text{Cos}[4\ (c + d x)] - 3 A b^{10}\,\text{Cos}[4\ (c + d x)] + 2 a^9 b B\,\text{Cos}[4\ (c + d x)] + \\
&\quad 6 a^7 b^3 B\,\text{Cos}[4\ (c + d x)] + 11 a^5 b^5 B\,\text{Cos}[4\ (c + d x)] + 9 a^3 b^7 B\,\text{Cos}[4\ (c + d x)] + \\
&\quad 2 a b^9 B\,\text{Cos}[4\ (c + d x)] - 3 a^9 A b\ (c + d x)\ \text{Cos}[4\ (c + d x)] + 4 a^7 A b^3\ (c + d x) \\
&\quad\ \text{Cos}[4\ (c + d x)] - a^5 A b^5\ (c + d x)\ \text{Cos}[4\ (c + d x)] + a^{10} B\ (c + d x)\ \text{Cos}[4\ (c + d x)] - \\
&\quad 4 a^8 b^2 B\ (c + d x)\ \text{Cos}[4\ (c + d x)] + 3 a^6 b^4 B\ (c + d x)\ \text{Cos}[4\ (c + d x)] + \\
&\quad 2 a^9 A b\,\text{Sin}[2\ (c + d x)] + 12 a^7 A b^3\,\text{Sin}[2\ (c + d x)] + 12 a^5 A b^5\,\text{Sin}[2\ (c + d x)] + \\
&\quad 2 a^3 A b^7\,\text{Sin}[2\ (c + d x)] - 2 a^{10} B\,\text{Sin}[2\ (c + d x)] - 8 a^8 b^2 B\,\text{Sin}[2\ (c + d x)] - \\
&\quad 2 a^6 b^4 B\,\text{Sin}[2\ (c + d x)] + 6 a^4 b^6 B\,\text{Sin}[2\ (c + d x)] + 2 a^2 b^8 B\,\text{Sin}[2\ (c + d x)] + \\
&\quad 12 a^8 A b^2\ (c + d x)\ \text{Sin}[2\ (c + d x)] - 4 a^6 A b^4\ (c + d x)\ \text{Sin}[2\ (c + d x)] - \\
&\quad 4 a^9 b B\ (c + d x)\ \text{Sin}[2\ (c + d x)] + 12 a^7 b^3 B\ (c + d x)\ \text{Sin}[2\ (c + d x)] + \\
&\quad 3 a^9 A b\,\text{Sin}[4\ (c + d x)] + 6 a^7 A b^3\,\text{Sin}[4\ (c + d x)] + 6 a^5 A b^5\,\text{Sin}[4\ (c + d x)] + \\
&\quad 3 a^3 A b^7\,\text{Sin}[4\ (c + d x)] - a^{10} B\,\text{Sin}[4\ (c + d x)] - 2 a^8 b^2 B\,\text{Sin}[4\ (c + d x)] - \\
&\quad 5 a^6 b^4 B\,\text{Sin}[4\ (c + d x)] - 5 a^4 b^6 B\,\text{Sin}[4\ (c + d x)] - a^2 b^8 B\,\text{Sin}[4\ (c + d x)] - \\
&\quad 6 a^8 A b^2\ (c + d x)\ \text{Sin}[4\ (c + d x)] + 2 a^6 A b^4\ (c + d x)\ \text{Sin}[4\ (c + d x)] + \\
&\quad 2 a^9 b B\ (c + d x)\ \text{Sin}[4\ (c + d x)] - 6 a^7 b^3 B\ (c + d x)\ \text{Sin}[4\ (c + d x)])) \Big/ \\
&\ (8 a^5\ (a - \text{i}\,b)^3\ (a + \text{i}\,b)^3\ d\ (b + a\,\text{Cot}[c + d x])^3\ (A\,\text{Cos}[c + d x] + B\,\text{Sin}[c + d x]))
\end{aligned}
$$

Problem 290: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{\operatorname{Tan}[c+d x]^4 \left(A+B \operatorname{Tan}[c+d x]\right)}{\left(a+b \operatorname{Tan}[c+d x]\right)^4} \, dx$$

Optimal (type 3, 351 leaves, 7 steps):

$$\frac{\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right) x}{\left(a^2+b^2\right)^4}+\frac{\left(4 a^3 A b-4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right) \operatorname{Log}[\operatorname{Cos}[c+d x]]}{\left(a^2+b^2\right)^4 d}+\frac{1}{b^4 \left(a^2+b^2\right)^4 d} a \left(4 a^2 A b^5-4 A b^7+a^7 B+4 a^5 b^2 B+5 a^3 b^4 B+10 a b^6 B\right) \operatorname{Log}[a+b \operatorname{Tan}[c+d x]]+\frac{a (A b-a B) \operatorname{Tan}[c+d x]^3}{3 b \left(a^2+b^2\right) d \left(a+b \operatorname{Tan}[c+d x]\right)^3}+\frac{a \left(2 A b^3-a \left(a^2+3 b^2\right) B\right) \operatorname{Tan}[c+d x]^2}{2 b^2 \left(a^2+b^2\right)^2 d \left(a+b \operatorname{Tan}[c+d x]\right)^2}+\frac{a^2 \left(a^2 A b^3-3 A b^5+a^5 B+3 a^3 b^2 B+6 a b^4 B\right)}{b^4 \left(a^2+b^2\right)^3 d \left(a+b \operatorname{Tan}[c+d x]\right)}$$

Result (type 3, 1812 leaves):

$$\Big(\Big(4\,\mathrm{i}\,a^{10} A b^8+4 a^9 A b^9+8\,\mathrm{i}\,a^8 A b^{10}+8 a^7 A b^{11}-8\,\mathrm{i}\,a^4 A b^{14}-8 a^3 A b^{15}-4\,\mathrm{i}\,a^2 A b^{16}-4 a A b^{17}+$$
$$\mathrm{i}\,a^{15} b^3 B+a^{14} b^4 B+7\,\mathrm{i}\,a^{13} b^5 B+7 a^{12} b^6 B+20\,\mathrm{i}\,a^{11} b^7 B+20 a^{10} b^8 B+38\,\mathrm{i}\,a^9 b^9 B+$$
$$38 a^8 b^{10} B+49\,\mathrm{i}\,a^7 b^{11} B+49 a^6 b^{12} B+35\,\mathrm{i}\,a^5 b^{13} B+35 a^4 b^{14} B+10\,\mathrm{i}\,a^3 b^{15} B+10 a^2 b^{16} B\Big)$$
$$(c+d x)\,\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\,(A+B\,\text{Tan}[c+d x])\Big)\Big/$$
$$\Big((a-\mathrm{i}\,b)^8\,(a+\mathrm{i}\,b)^7\,b^7\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^4\Big)-$$
$$\Big(\mathrm{i}\,\big(4 a^3 A b^5-4 a A b^7+a^8 B+4 a^6 b^2 B+5 a^4 b^4 B+10 a^2 b^6 B\big)\,\text{ArcTan}[\text{Tan}[c+d x]]$$
$$\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\,(A+B\,\text{Tan}[c+d x])\Big)\Big/$$
$$\Big(b^4\,(a^2+b^2)^4\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^4\Big)-$$
$$\Big(B\,\text{Log}[\text{Cos}[c+d x]]\,\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\,(A+B\,\text{Tan}[c+d x])\Big)\Big/$$
$$\Big(b^4\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^4\Big)+$$
$$\Big(\big(4 a^3 A b^5-4 a A b^7+a^8 B+4 a^6 b^2 B+5 a^4 b^4 B+10 a^2 b^6 B\big)\,\text{Log}\big[(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\big]$$
$$\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^4\,(A+B\,\text{Tan}[c+d x])\Big)\Big/$$
$$\Big(2\,b^4\,(a^2+b^2)^4\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^4\Big)+$$
$$\Big(\text{Sec}[c+d x]^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\,\big(12 a^6 A b^4\,\text{Cos}[c+d x]+48 a^4 A b^6\,\text{Cos}[c+d x]+$$
$$36 a^2 A b^8\,\text{Cos}[c+d x]-12 a^9 b B\,\text{Cos}[c+d x]-60 a^7 b^3 B\,\text{Cos}[c+d x]-108 a^5 b^5 B\,\text{Cos}[c+d x]-$$
$$60 a^3 b^7 B\,\text{Cos}[c+d x]+9 a^7 A b^3\,(c+d x)\,\text{Cos}[c+d x]-45 a^5 A b^5\,(c+d x)\,\text{Cos}[c+d x]-$$
$$45 a^3 A b^7\,(c+d x)\,\text{Cos}[c+d x]+9 a A b^9\,(c+d x)\,\text{Cos}[c+d x]+$$
$$36 a^6 b^4 B\,(c+d x)\,\text{Cos}[c+d x]-36 a^2 b^8 B\,(c+d x)\,\text{Cos}[c+d x]+8 a^6 A b^4\,\text{Cos}[3\,(c+d x)]-$$
$$28 a^4 A b^6\,\text{Cos}[3\,(c+d x)]-36 a^2 A b^8\,\text{Cos}[3\,(c+d x)]+6 a^9 b B\,\text{Cos}[3\,(c+d x)]+$$
$$28 a^7 b^3 B\,\text{Cos}[3\,(c+d x)]+82 a^5 b^5 B\,\text{Cos}[3\,(c+d x)]+60 a^3 b^7 B\,\text{Cos}[3\,(c+d x)]+$$
$$3 a^7 A b^3\,(c+d x)\,\text{Cos}[3\,(c+d x)]-27 a^5 A b^5\,(c+d x)\,\text{Cos}[3\,(c+d x)]+$$
$$57 a^3 A b^7\,(c+d x)\,\text{Cos}[3\,(c+d x)]-9 a A b^9\,(c+d x)\,\text{Cos}[3\,(c+d x)]+$$
$$12 a^6 b^4 B\,(c+d x)\,\text{Cos}[3\,(c+d x)]-48 a^4 b^6 B\,(c+d x)\,\text{Cos}[3\,(c+d x)]+$$
$$36 a^2 b^8 B\,(c+d x)\,\text{Cos}[3\,(c+d x)]+30 a^5 A b^5\,\text{Sin}[c+d x]+84 a^3 A b^7\,\text{Sin}[c+d x]+$$
$$54 a A b^9\,\text{Sin}[c+d x]-3 a^{10} B\,\text{Sin}[c+d x]-33 a^8 b^2 B\,\text{Sin}[c+d x]-123 a^6 b^4 B\,\text{Sin}[c+d x]-$$
$$183 a^4 b^6 B\,\text{Sin}[c+d x]-90 a^2 b^8 B\,\text{Sin}[c+d x]+9 a^6 A b^4\,(c+d x)\,\text{Sin}[c+d x]-$$
$$45 a^4 A b^6\,(c+d x)\,\text{Sin}[c+d x]-45 a^2 A b^8\,(c+d x)\,\text{Sin}[c+d x]+9 A b^{10}\,(c+d x)\,\text{Sin}[c+d x]+$$
$$36 a^5 b^5 B\,(c+d x)\,\text{Sin}[c+d x]-36 a b^9 B\,(c+d x)\,\text{Sin}[c+d x]-4 a^7 A b^3\,\text{Sin}[3\,(c+d x)]+$$
$$18 a^5 A b^5\,\text{Sin}[3\,(c+d x)]+4 a^3 A b^7\,\text{Sin}[3\,(c+d x)]-18 a A b^9\,\text{Sin}[3\,(c+d x)]-$$
$$3 a^{10} B\,\text{Sin}[3\,(c+d x)]-11 a^8 b^2 B\,\text{Sin}[3\,(c+d x)]-27 a^6 b^4 B\,\text{Sin}[3\,(c+d x)]+$$
$$11 a^4 b^6 B\,\text{Sin}[3\,(c+d x)]+30 a^2 b^8 B\,\text{Sin}[3\,(c+d x)]+9 a^6 A b^4\,(c+d x)\,\text{Sin}[3\,(c+d x)]-$$
$$57 a^4 A b^6\,(c+d x)\,\text{Sin}[3\,(c+d x)]+27 a^2 A b^8\,(c+d x)\,\text{Sin}[3\,(c+d x)]-$$
$$3 A b^{10}\,(c+d x)\,\text{Sin}[3\,(c+d x)]+36 a^5 b^5 B\,(c+d x)\,\text{Sin}[3\,(c+d x)]-$$
$$48 a^3 b^7 B\,(c+d x)\,\text{Sin}[3\,(c+d x)]+12 a b^9 B\,(c+d x)\,\text{Sin}[3\,(c+d x)]\big)\,(A+B\,\text{Tan}[c+d x])\Big)\Big/$$
$$\Big(12\,(a-\mathrm{i}\,b)^4\,(a+\mathrm{i}\,b)^4\,b^3\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^4\Big)$$

Problem 291: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 298 leaves, 5 steps):

$$-\frac{\left(4 a^3 A b-4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right) x}{\left(a^2+b^2\right)^4}+\frac{1}{\left(a^2+b^2\right)^4 d}$$
$$\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]+$$
$$\frac{a (A b-a B) \text{Tan}[c+d x]^2}{3 b \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}+\frac{a^2 \left(a^2 A b-5 A b^3+2 a^3 B+8 a b^2 B\right)}{6 b^3 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2}-$$
$$\frac{a \left(a^4 A b+5 a^2 A b^3-8 A b^5+2 a^5 B+7 a^3 b^2 B+17 a b^4 B\right)}{3 b^3 \left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 1586 leaves):

$$
\begin{aligned}
&\Big(\big(i\,a^{13}\,A+a^{12}\,A\,b-3\,i\,a^{11}\,A\,b^2-3\,a^{10}\,A\,b^3-14\,i\,a^9\,A\,b^4-14\,a^8\,A\,b^5-\\
&\quad 14\,i\,a^7\,A\,b^6-14\,a^6\,A\,b^7-3\,i\,a^5\,A\,b^8-3\,a^4\,A\,b^9+i\,a^3\,A\,b^{10}+a^2\,A\,b^{11}+4\,i\,a^{12}\,b\,B+\\
&\quad 4\,a^{11}\,b^2\,B+8\,i\,a^{10}\,b^3\,B+8\,a^9\,b^4\,B-8\,i\,a^6\,b^7\,B-8\,a^5\,b^8\,B-4\,i\,a^4\,b^9\,B-4\,a^3\,b^{10}\,B\big)\\
&\quad (c+d\,x)\,\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\\
&\Big(a^2\,(a-i\,b)^8\,(a+i\,b)^7\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)-\\
&\Big(i\,(a^4\,A-6\,a^2\,A\,b^2+A\,b^4+4\,a^3\,b\,B-4\,a\,b^3\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\\
&\quad \mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\\
&\Big((a^2+b^2)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)+\\
&\Big((a^4\,A-6\,a^2\,A\,b^2+A\,b^4+4\,a^3\,b\,B-4\,a\,b^3\,B)\,\mathrm{Log}\big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\big]\\
&\quad \mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\\
&\Big(2\,(a^2+b^2)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)+\\
&\Big(\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,\big(6\,a^7\,A\,\mathrm{Cos}[c+d\,x]+18\,a^5\,A\,b^2\,\mathrm{Cos}[c+d\,x]-\\
&\quad 6\,a^3\,A\,b^4\,\mathrm{Cos}[c+d\,x]-18\,a\,A\,b^6\,\mathrm{Cos}[c+d\,x]+12\,a^6\,b\,B\,\mathrm{Cos}[c+d\,x]+\\
&\quad 48\,a^4\,b^3\,B\,\mathrm{Cos}[c+d\,x]+36\,a^2\,b^5\,B\,\mathrm{Cos}[c+d\,x]-36\,a^6\,A\,b\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+\\
&\quad 36\,a^2\,A\,b^5\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+9\,a^7\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]-45\,a^5\,b^2\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]-\\
&\quad 45\,a^3\,b^4\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+9\,a\,b^6\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]-26\,a^5\,A\,b^2\,\mathrm{Cos}[3\,(c+d\,x)]-\\
&\quad 8\,a^3\,A\,b^4\,\mathrm{Cos}[3\,(c+d\,x)]+18\,a\,A\,b^6\,\mathrm{Cos}[3\,(c+d\,x)]+8\,a^6\,b\,B\,\mathrm{Cos}[3\,(c+d\,x)]-\\
&\quad 28\,a^4\,b^3\,B\,\mathrm{Cos}[3\,(c+d\,x)]-36\,a^2\,b^5\,B\,\mathrm{Cos}[3\,(c+d\,x)]-12\,a^6\,A\,b\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+\\
&\quad 48\,a^4\,A\,b^3\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-36\,a^2\,A\,b^5\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+\\
&\quad 3\,a^7\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-27\,a^5\,b^2\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+\\
&\quad 57\,a^3\,b^4\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-9\,a\,b^6\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+\\
&\quad 15\,a^6\,A\,b\,\mathrm{Sin}[c+d\,x]+27\,a^4\,A\,b^3\,\mathrm{Sin}[c+d\,x]-15\,a^2\,A\,b^5\,\mathrm{Sin}[c+d\,x]-27\,A\,b^7\,\mathrm{Sin}[c+d\,x]+\\
&\quad 30\,a^5\,b^2\,B\,\mathrm{Sin}[c+d\,x]+84\,a^3\,b^4\,B\,\mathrm{Sin}[c+d\,x]+54\,a\,b^6\,B\,\mathrm{Sin}[c+d\,x]-\\
&\quad 36\,a^5\,A\,b^2\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+36\,a\,A\,b^6\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+9\,a^6\,b\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]-\\
&\quad 45\,a^4\,b^3\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]-45\,a^2\,b^5\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+9\,b^7\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+\\
&\quad 13\,a^6\,A\,b\,\mathrm{Sin}[3\,(c+d\,x)]-9\,a^4\,A\,b^3\,\mathrm{Sin}[3\,(c+d\,x)]-13\,a^2\,A\,b^5\,\mathrm{Sin}[3\,(c+d\,x)]+\\
&\quad 9\,A\,b^7\,\mathrm{Sin}[3\,(c+d\,x)]-4\,a^7\,B\,\mathrm{Sin}[3\,(c+d\,x)]+18\,a^5\,b^2\,B\,\mathrm{Sin}[3\,(c+d\,x)]+\\
&\quad 4\,a^3\,b^4\,B\,\mathrm{Sin}[3\,(c+d\,x)]-18\,a\,b^6\,B\,\mathrm{Sin}[3\,(c+d\,x)]-36\,a^5\,A\,b^2\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+\\
&\quad 48\,a^3\,A\,b^4\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-12\,a\,A\,b^6\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+\\
&\quad 9\,a^6\,b\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-57\,a^4\,b^3\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+\\
&\quad 27\,a^2\,b^5\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-3\,b^7\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]\big)\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\\
&\Big(12\,(a-i\,b)^4\,(a+i\,b)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)
\end{aligned}
$$

Problem 292: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Tan}[c+d\,x]^2\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 261 leaves, 5 steps):

$$-\frac{\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right) x}{\left(a^2+b^2\right)^4}-\frac{1}{\left(a^2+b^2\right)^4 d}$$
$$\left(4 a^3 A b-4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]-$$
$$\frac{a^2 (A b-a B)}{3 b^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}+$$
$$\frac{a \left(2 A b^3-a \left(a^2+3 b^2\right) B\right)}{2 b^2 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2}+\frac{3 a^2 A b-A b^3-a^3 B+3 a b^2 B}{\left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 1336 leaves) :

$$\left(A \operatorname{Sec}[c+d x]^3 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \left(-3 a b \left(a^2+b^2\right) \operatorname{Cos}[c+d x]+\left(-3 a^3 b+a b^3\right) \operatorname{Cos}[3 (c+d x)]+\left(a^2-b^2\right) \left(3 a^2+b^2+\left(3 a^2-b^2\right) \operatorname{Cos}[2 (c+d x)]\right) \operatorname{Sin}[c+d x]\right) (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(24 a \left(a^2+b^2\right)^2 d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (a+b \operatorname{Tan}[c+d x])^4\right)+$$

$$\left(B \operatorname{Sec}[c+d x]^3 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \left(3 a \left(a^2+b^2\right) \operatorname{Cos}[c+d x]+b \left(-4 a b \operatorname{Cos}[3 (c+d x)]+\left(5 a^2+b^2+4 \left(a^2-b^2\right) \operatorname{Cos}[2 (c+d x)]\right) \operatorname{Sin}[c+d x]\right)\right) (A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(24 \left(a^2+b^2\right)^2 d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (a+b \operatorname{Tan}[c+d x])^4\right)-$$

$$\frac{1}{24 \left(a^2+b^2\right)^4 d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (a+b \operatorname{Tan}[c+d x])^4} B \operatorname{Sec}[c+d x]^3 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4$$

$$\left(96 a (a-b) b (a+b) (c+d x)-24 \mathrm{i} \left(a^4-6 a^2 b^2+b^4\right) (c+d x)+24 \mathrm{i} \left(a^4-6 a^2 b^2+b^4\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]]-12 \left(a^4-6 a^2 b^2+b^4\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right]+\frac{4 b \left(a^2-b^2\right) \left(a^2+b^2\right)^2 \operatorname{Sin}[c+d x]}{(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3}-\frac{2 \left(a^2+b^2\right) \left(3 a^4-16 a^2 b^2+b^4\right)}{(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2}+\frac{88 b \left(-a^4+b^4\right) \operatorname{Sin}[c+d x]}{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}-\left(\left(a^2+b^2\right)^2 \left(3 a \left(a^2+b^2\right) \operatorname{Cos}[c+d x]+b \left(-4 a b \operatorname{Cos}[3 (c+d x)]+\left(5 a^2+b^2+4 \left(a^2-b^2\right) \operatorname{Cos}[2 (c+d x)]\right) \operatorname{Sin}[c+d x]\right)\right)\right) \Big/ (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right) (A+B \operatorname{Tan}[c+d x])-$$

$$\frac{1}{24 a \left(a^2+b^2\right)^4 d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (a+b \operatorname{Tan}[c+d x])^4} A \operatorname{Sec}[c+d x]^3 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^4$$

$$\left(96 \mathrm{i} a^2 b \left(a^2-b^2\right) (c+d x)-96 \mathrm{i} a^2 b \left(a^2-b^2\right) \operatorname{ArcTan}[\operatorname{Tan}[c+d x]]+48 a^2 b \left(a^2-b^2\right) \operatorname{Log}\left[(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2\right]+\frac{1}{(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3} \left(6 a \left(a^2+b^2\right) \left(2 a^4 b+8 a^2 b^3-2 b^5+3 a^5 (c+d x)-18 a^3 b^2 (c+d x)+3 a b^4 (c+d x)\right) \operatorname{Cos}[c+d x]+a \left(a^4-6 a^2 b^2+b^4\right) \left(11 a^2 b+11 b^3+6 a^3 (c+d x)-18 a b^2 (c+d x)\right) \operatorname{Cos}[3 (c+d x)]-\left(10 a^8-63 a^6 b^2-105 a^4 b^4-21 a^2 b^6+11 b^8-36 a^7 b (c+d x)+204 a^5 b^3 (c+d x)+36 a^3 b^5 (c+d x)-12 a b^7 (c+d x)+\left(a^4-6 a^2 b^2+b^4\right) \left(11 a^4-11 b^4-36 a^3 b (c+d x)+12 a b^3 (c+d x)\right) \operatorname{Cos}[2 (c+d x)]\right) \operatorname{Sin}[c+d x]\right)+\left(\left(a^2+b^2\right)^2 \left(-3 a b \left(a^2+b^2\right) \operatorname{Cos}[c+d x]-2 a b \left(a^2-b^2\right) \operatorname{Cos}[3 (c+d x)]-3 a^2 b^2 \operatorname{Sin}[c+d x]-3 b^4 \operatorname{Sin}[c+d x]+a^4 \operatorname{Sin}[3 (c+d x)]-2 a^2 b^2 \operatorname{Sin}[3 (c+d x)]+b^4 \operatorname{Sin}[3 (c+d x)]\right)\right) \Big/ (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right) (A+B \operatorname{Tan}[c+d x])$$

Problem 293: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 250 leaves, 5 steps):

$$\frac{\left(4 a^3 A b-4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right) x}{\left(a^2+b^2\right)^4}-\frac{1}{\left(a^2+b^2\right)^4 d}$$
$$\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]+$$
$$\frac{a (A b-a B)}{3 b \left(a^2+b^2\right) d \left(a+b \text{Tan}[c+d x]\right)^3}+$$
$$\frac{a^2 A-A b^2+2 a b B}{2 \left(a^2+b^2\right)^2 d \left(a+b \text{Tan}[c+d x]\right)^2}+\frac{a^3 A-3 a A b^2+3 a^2 b B-b^3 B}{\left(a^2+b^2\right)^3 d \left(a+b \text{Tan}[c+d x]\right)}$$

Result (type 3, 1355 leaves):

$$\left(A\,\mathrm{Sec}[c+d\,x]^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\,\left(3\,a\,\left(a^2+b^2\right)\,\mathrm{Cos}[c+d\,x]+b\,\left(-4\,a\,b\,\mathrm{Cos}\left[3\,\left(c+d\,x\right)\right]+\left(5\,a^2+b^2+4\,\left(a^2-b^2\right)\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\mathrm{Sin}[c+d\,x]\right)\right)\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(24\,\left(a^2+b^2\right)^2\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\left(B\,\mathrm{Sec}[c+d\,x]^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\,\left(-a^2\,\left(a^2-3\,b^2\right)\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{Sin}[c+d\,x]+2\,a\,b\,\mathrm{Cos}[c+d\,x]\,\left(a^2-\left(a^2-3\,b^2\right)\,\mathrm{Sin}[c+d\,x]^2\right)+\mathrm{Sin}[c+d\,x]\,\left(a^4+3\,a^2\,b^2+b^2\,\left(-a^2+3\,b^2\right)\,\mathrm{Sin}[c+d\,x]^2\right)\right)\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\left(12\,a\,\left(a^2+b^2\right)^2\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^4\right)+$$

$$\frac{1}{24\,\left(a^2+b^2\right)^4\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^4}A\,\mathrm{Sec}[c+d\,x]^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4$$

$$\left(96\,a\,\left(a-b\right)\,b\,\left(a+b\right)\,\left(c+d\,x\right)-24\,i\,\left(a^4-6\,a^2\,b^2+b^4\right)\,\left(c+d\,x\right)+24\,i\,\left(a^4-6\,a^2\,b^2+b^4\right)\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]-12\,\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]+\frac{4\,b\,\left(a^2-b^2\right)\,\left(a^2+b^2\right)^2\,\mathrm{Sin}[c+d\,x]}{\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^3}-\frac{2\,\left(a^2+b^2\right)\,\left(3\,a^4-16\,a^2\,b^2+b^4\right)}{\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2}+\frac{88\,b\,\left(-a^4+b^4\right)\,\mathrm{Sin}[c+d\,x]}{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}+\left(\left(a^2+b^2\right)^2\,\left(3\,a\,\left(a^2+b^2\right)\,\mathrm{Cos}[c+d\,x]+b\,\left(-4\,a\,b\,\mathrm{Cos}\left[3\,\left(c+d\,x\right)\right]+\left(5\,a^2+b^2+4\,\left(a^2-b^2\right)\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\mathrm{Sin}[c+d\,x]\right)\right)\right)\Big/\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^3\right)\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)+$$

$$\frac{1}{24\,a\,\left(a^2+b^2\right)^4\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^4}B\,\mathrm{Sec}[c+d\,x]^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^4$$

$$\left(-96\,i\,a^2\,b\,\left(a^2-b^2\right)\,\left(c+d\,x\right)+96\,i\,a^2\,b\,\left(a^2-b^2\right)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]-48\,a^2\,b\,\left(a^2-b^2\right)\,\mathrm{Log}\left[\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\right]+\frac{1}{\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^3}\left(-6\,a\,\left(a^2+b^2\right)\,\left(2\,a^4\,b+8\,a^2\,b^3-2\,b^5+3\,a^5\,\left(c+d\,x\right)-18\,a^3\,b^2\,\left(c+d\,x\right)+3\,a\,b^4\,\left(c+d\,x\right)\right)\mathrm{Cos}[c+d\,x]-a\,\left(a^4-6\,a^2\,b^2+b^4\right)\,\left(11\,a^2\,b+11\,b^3+6\,a^3\,\left(c+d\,x\right)-18\,a\,b^2\,\left(c+d\,x\right)\right)\mathrm{Cos}\left[3\,\left(c+d\,x\right)\right]+\left(10\,a^8-63\,a^6\,b^2-105\,a^4\,b^4-21\,a^2\,b^6+11\,b^8-36\,a^7\,b\,\left(c+d\,x\right)+204\,a^5\,b^3\,\left(c+d\,x\right)+36\,a^3\,b^5\,\left(c+d\,x\right)-12\,a\,b^7\,\left(c+d\,x\right)+\left(a^4-6\,a^2\,b^2+b^4\right)\left(11\,a^4-11\,b^4-36\,a^3\,b\,\left(c+d\,x\right)+12\,a\,b^3\,\left(c+d\,x\right)\right)\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\mathrm{Sin}[c+d\,x]\right)+\left(\left(a^2+b^2\right)^2\,\left(-3\,a\,b\,\left(a^2+b^2\right)\,\mathrm{Cos}[c+d\,x]-2\,a\,b\,\left(a^2-b^2\right)\,\mathrm{Cos}\left[3\,\left(c+d\,x\right)\right]-3\,a^2\,b^2\,\mathrm{Sin}[c+d\,x]-3\,b^4\,\mathrm{Sin}[c+d\,x]+a^4\,\mathrm{Sin}\left[3\,\left(c+d\,x\right)\right]-2\,a^2\,b^2\,\mathrm{Sin}\left[3\,\left(c+d\,x\right)\right]+b^4\,\mathrm{Sin}\left[3\,\left(c+d\,x\right)\right]\right)\right)\Big/\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^3\right)\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)$$

Problem 294: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 247 leaves, 5 steps):

$$\frac{\left(a^4 A - 6 a^2 A b^2 + A b^4 + 4 a^3 b B - 4 a b^3 B\right) x}{\left(a^2 + b^2\right)^4} + \frac{1}{\left(a^2 + b^2\right)^4 d}$$
$$\left(4 a^3 A b - 4 a A b^3 - a^4 B + 6 a^2 b^2 B - b^4 B\right) \operatorname{Log}[a \operatorname{Cos}[c + d x] + b \operatorname{Sin}[c + d x]] -$$
$$\frac{A b - a B}{3 \left(a^2 + b^2\right) d \left(a + b \operatorname{Tan}[c + d x]\right)^3} -$$
$$\frac{2 a A b - a^2 B + b^2 B}{2 \left(a^2 + b^2\right)^2 d \left(a + b \operatorname{Tan}[c + d x]\right)^2} - \frac{3 a^2 A b - A b^3 - a^3 B + 3 a b^2 B}{\left(a^2 + b^2\right)^3 d \left(a + b \operatorname{Tan}[c + d x]\right)}$$

Result (type 3, 1585 leaves):

$$\Big(\big(4\,i\,a^{12}\,A\,b+4\,a^{11}\,A\,b^2+8\,i\,a^{10}\,A\,b^3+8\,a^9\,A\,b^4-8\,i\,a^6\,A\,b^7-8\,a^5\,A\,b^8-4\,i\,a^4\,A\,b^9-4\,a^3\,A\,b^{10}-i\,a^{13}\,B-a^{12}\,b\,B+3\,i\,a^{11}\,b^2\,B+3\,a^{10}\,b^3\,B+14\,i\,a^9\,b^4\,B+14\,a^8\,b^5\,B+14\,i\,a^7\,b^6\,B+14\,a^6\,b^7\,B+3\,i\,a^5\,b^8\,B+3\,a^4\,b^9\,B-i\,a^3\,b^{10}\,B-a^2\,b^{11}\,B\big)\,(c+d\,x)\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big(a^2\,(a-i\,b)^8\,(a+i\,b)^7\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^4\Big)-$$

$$\Big(i\,(4\,a^3\,A\,b-4\,a\,A\,b^3-a^4\,B+6\,a^2\,b^2\,B-b^4\,B)\,\text{ArcTan}[\text{Tan}[c+d\,x]]\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big((a^2+b^2)^4\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^4\Big)+$$

$$\Big((4\,a^3\,A\,b-4\,a\,A\,b^3-a^4\,B+6\,a^2\,b^2\,B-b^4\,B)\,\text{Log}\big[(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\big]\,\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big(2\,(a^2+b^2)^4\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^4\Big)+$$

$$\Big(\text{Sec}[c+d\,x]^3\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\big(12\,a^5\,A\,b^3\,\text{Cos}[c+d\,x]-12\,a\,A\,b^7\,\text{Cos}[c+d\,x]+24\,a^4\,b^4\,B\,\text{Cos}[c+d\,x]+24\,a^2\,b^6\,B\,\text{Cos}[c+d\,x]+9\,a^8\,A\,(c+d\,x)\,\text{Cos}[c+d\,x]-45\,a^6\,A\,b^2\,(c+d\,x)\,\text{Cos}[c+d\,x]-45\,a^4\,A\,b^4\,(c+d\,x)\,\text{Cos}[c+d\,x]+9\,a^2\,A\,b^6\,(c+d\,x)\,\text{Cos}[c+d\,x]+36\,a^7\,b\,B\,(c+d\,x)\,\text{Cos}[c+d\,x]-36\,a^3\,b^5\,B\,(c+d\,x)\,\text{Cos}[c+d\,x]-36\,a^5\,A\,b^3\,\text{Cos}[3\,(c+d\,x)]-28\,a^3\,A\,b^5\,\text{Cos}[3\,(c+d\,x)]+8\,a\,A\,b^7\,\text{Cos}[3\,(c+d\,x)]+18\,a^6\,b^2\,B\,\text{Cos}[3\,(c+d\,x)]-8\,a^4\,b^4\,B\,\text{Cos}[3\,(c+d\,x)]-26\,a^2\,b^6\,B\,\text{Cos}[3\,(c+d\,x)]+3\,a^8\,A\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]-27\,a^6\,A\,b^2\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]+57\,a^4\,A\,b^4\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]-9\,a^2\,A\,b^6\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]+12\,a^7\,b\,B\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]-48\,a^5\,b^3\,B\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]+36\,a^3\,b^5\,B\,(c+d\,x)\,\text{Cos}[3\,(c+d\,x)]+18\,a^6\,A\,b^2\,\text{Sin}[c+d\,x]+48\,a^4\,A\,b^4\,\text{Sin}[c+d\,x]+18\,a^2\,A\,b^6\,\text{Sin}[c+d\,x]-12\,A\,b^8\,\text{Sin}[c+d\,x]-9\,a^7\,b\,B\,\text{Sin}[c+d\,x]-9\,a^5\,b^3\,B\,\text{Sin}[c+d\,x]+33\,a^3\,b^5\,B\,\text{Sin}[c+d\,x]+33\,a\,b^7\,B\,\text{Sin}[c+d\,x]+9\,a^7\,A\,b\,(c+d\,x)\,\text{Sin}[c+d\,x]-45\,a^5\,A\,b^3\,(c+d\,x)\,\text{Sin}[c+d\,x]-45\,a^3\,A\,b^5\,(c+d\,x)\,\text{Sin}[c+d\,x]+9\,a\,A\,b^7\,(c+d\,x)\,\text{Sin}[c+d\,x]+36\,a^6\,b^2\,B\,(c+d\,x)\,\text{Sin}[c+d\,x]-36\,a^2\,b^6\,B\,(c+d\,x)\,\text{Sin}[c+d\,x]+18\,a^6\,A\,b^2\,\text{Sin}[3\,(c+d\,x)]-4\,a^4\,A\,b^4\,\text{Sin}[3\,(c+d\,x)]-18\,a^2\,A\,b^6\,\text{Sin}[3\,(c+d\,x)]+4\,A\,b^8\,\text{Sin}[3\,(c+d\,x)]-9\,a^7\,b\,B\,\text{Sin}[3\,(c+d\,x)]+13\,a^5\,b^3\,B\,\text{Sin}[3\,(c+d\,x)]+9\,a^3\,b^5\,B\,\text{Sin}[3\,(c+d\,x)]-13\,a\,b^7\,B\,\text{Sin}[3\,(c+d\,x)]+9\,a^7\,A\,b\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]-57\,a^5\,A\,b^3\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]+27\,a^3\,A\,b^5\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]-3\,a\,A\,b^7\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]+36\,a^6\,b^2\,B\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]-48\,a^4\,b^4\,B\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]+12\,a^2\,b^6\,B\,(c+d\,x)\,\text{Sin}[3\,(c+d\,x)]\big)\,(A+B\,\text{Tan}[c+d\,x])\Big)\Big/\Big(12\,a\,(a-i\,b)^4\,(a+i\,b)^4\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^4\Big)$$

Problem 295: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 302 leaves, 6 steps):

$$-\frac{\left(4\,a^3\,A\,b-4\,a\,A\,b^3-a^4\,B+6\,a^2\,b^2\,B-b^4\,B\right)\,x}{\left(a^2+b^2\right)^4}+\frac{A\,\text{Log}[\text{Sin}[c+d\,x]]}{a^4\,d}-\frac{1}{a^4\,\left(a^2+b^2\right)^4\,d}$$
$$b\,\left(10\,a^6\,A\,b+5\,a^4\,A\,b^3+4\,a^2\,A\,b^5+A\,b^7-4\,a^7\,B+4\,a^5\,b^2\,B\right)\,\text{Log}[a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]]+$$
$$\frac{b\,\left(A\,b-a\,B\right)}{3\,a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3}+\frac{b\,\left(3\,a^2\,A\,b+A\,b^3-2\,a^3\,B\right)}{2\,a^2\,\left(a^2+b^2\right)^2\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+$$
$$\frac{b\,\left(6\,a^4\,A\,b+3\,a^2\,A\,b^3+A\,b^5-3\,a^5\,B+a^3\,b^2\,B\right)}{a^3\,\left(a^2+b^2\right)^3\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 1818 leaves) :

$$\Big(\big(-10\,i\,a^{19}\,A\,b^2-10\,a^{18}\,A\,b^3-35\,i\,a^{17}\,A\,b^4-35\,a^{16}\,A\,b^5-49\,i\,a^{15}\,A\,b^6-49\,a^{14}\,A\,b^7-38\,i\,a^{13}\,A\,b^8-38\,a^{12}\,A\,b^9-20\,i\,a^{11}\,A\,b^{10}-20\,a^{10}\,A\,b^{11}-7\,i\,a^9\,A\,b^{12}-7\,a^8\,A\,b^{13}-i\,a^7\,A\,b^{14}-a^6\,A\,b^{15}+4\,i\,a^{20}\,b\,B+4\,a^{19}\,b^2\,B+8\,i\,a^{18}\,b^3\,B+8\,a^{17}\,b^4\,B-8\,i\,a^{14}\,b^7\,B-8\,a^{13}\,b^8\,B-4\,i\,a^{12}\,b^9\,B-4\,a^{11}\,b^{10}\,B\big)\,(c+d\,x)\,\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(a^{10}\,(a-i\,b)^8\,(a+i\,b)^7\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)-$$

$$\Big(i\,\big(-10\,a^6\,A\,b^2-5\,a^4\,A\,b^4-4\,a^2\,A\,b^6-A\,b^8+4\,a^7\,b\,B-4\,a^5\,b^3\,B\big)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(a^4\,(a^2+b^2)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)+$$

$$\Big(A\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]\,\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(a^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)+$$

$$\Big(\big(-10\,a^6\,A\,b^2-5\,a^4\,A\,b^4-4\,a^2\,A\,b^6-A\,b^8+4\,a^7\,b\,B-4\,a^5\,b^3\,B\big)\,\mathrm{Log}\big[(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\big]\,\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^4\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(2\,a^4\,(a^2+b^2)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)+$$

$$\Big(\mathrm{Sec}[c+d\,x]^3\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,\big(-30\,a^7\,A\,b^4\,\mathrm{Cos}[c+d\,x]-42\,a^5\,A\,b^6\,\mathrm{Cos}[c+d\,x]-18\,a^3\,A\,b^8\,\mathrm{Cos}[c+d\,x]-6\,a\,A\,b^{10}\,\mathrm{Cos}[c+d\,x]+12\,a^8\,b^3\,B\,\mathrm{Cos}[c+d\,x]-12\,a^4\,b^7\,B\,\mathrm{Cos}[c+d\,x]-36\,a^{10}\,A\,b\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+36\,a^6\,A\,b^5\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+9\,a^{11}\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]-45\,a^9\,b^2\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]-45\,a^7\,b^4\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+9\,a^5\,b^6\,B\,(c+d\,x)\,\mathrm{Cos}[c+d\,x]+60\,a^7\,A\,b^4\,\mathrm{Cos}[3\,(c+d\,x)]+82\,a^5\,A\,b^6\,\mathrm{Cos}[3\,(c+d\,x)]+28\,a^3\,A\,b^8\,\mathrm{Cos}[3\,(c+d\,x)]+6\,a\,A\,b^{10}\,\mathrm{Cos}[3\,(c+d\,x)]-36\,a^8\,b^3\,B\,\mathrm{Cos}[3\,(c+d\,x)]-28\,a^6\,b^5\,B\,\mathrm{Cos}[3\,(c+d\,x)]+8\,a^4\,b^7\,B\,\mathrm{Cos}[3\,(c+d\,x)]-12\,a^{10}\,A\,b\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+48\,a^8\,A\,b^3\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-36\,a^6\,A\,b^5\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+3\,a^{11}\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-27\,a^9\,b^2\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]+57\,a^7\,b^4\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-9\,a^5\,b^6\,B\,(c+d\,x)\,\mathrm{Cos}[3\,(c+d\,x)]-30\,a^8\,A\,b^3\,\mathrm{Sin}[c+d\,x]-105\,a^6\,A\,b^5\,\mathrm{Sin}[c+d\,x]-105\,a^4\,A\,b^7\,\mathrm{Sin}[c+d\,x]-39\,a^2\,A\,b^9\,\mathrm{Sin}[c+d\,x]-9\,A\,b^{11}\,\mathrm{Sin}[c+d\,x]+18\,a^9\,b^2\,B\,\mathrm{Sin}[c+d\,x]+48\,a^7\,b^4\,B\,\mathrm{Sin}[c+d\,x]+18\,a^5\,b^6\,B\,\mathrm{Sin}[c+d\,x]-12\,a^3\,b^8\,B\,\mathrm{Sin}[c+d\,x]-36\,a^9\,A\,b^2\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+36\,a^5\,A\,b^6\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+9\,a^{10}\,b\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]-45\,a^8\,b^3\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]-45\,a^6\,b^5\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]+9\,a^4\,b^7\,B\,(c+d\,x)\,\mathrm{Sin}[c+d\,x]-30\,a^8\,A\,b^3\,\mathrm{Sin}[3\,(c+d\,x)]-11\,a^6\,A\,b^5\,\mathrm{Sin}[3\,(c+d\,x)]+27\,a^4\,A\,b^7\,\mathrm{Sin}[3\,(c+d\,x)]+11\,a^2\,A\,b^9\,\mathrm{Sin}[3\,(c+d\,x)]+3\,A\,b^{11}\,\mathrm{Sin}[3\,(c+d\,x)]+18\,a^9\,b^2\,B\,\mathrm{Sin}[3\,(c+d\,x)]-4\,a^7\,b^4\,B\,\mathrm{Sin}[3\,(c+d\,x)]-18\,a^5\,b^6\,B\,\mathrm{Sin}[3\,(c+d\,x)]+4\,a^3\,b^8\,B\,\mathrm{Sin}[3\,(c+d\,x)]-36\,a^9\,A\,b^2\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+48\,a^7\,A\,b^4\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-12\,a^5\,A\,b^6\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+9\,a^{10}\,b\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-57\,a^8\,b^3\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]+27\,a^6\,b^5\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]-3\,a^4\,b^7\,B\,(c+d\,x)\,\mathrm{Sin}[3\,(c+d\,x)]\big)\,(A+B\,\mathrm{Tan}[c+d\,x])\Big)\Big/\Big(12\,a^4\,(a-i\,b)^4\,(a+i\,b)^4\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^4\Big)$$

Problem 296: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c+d\,x]^2\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^4}\,dx$$

Optimal (type 3, 399 leaves, 7 steps):

$$-\frac{\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right) x}{\left(a^2+b^2\right)^4}-\frac{(4 A b-a B) \text{Log}[\text{Sin}[c+d x]]}{a^5 d}+\frac{1}{a^5 \left(a^2+b^2\right)^4 d}b^2 \left(20 a^6 A b+24 a^4 A b^3+16 a^2 A b^5+4 A b^7-10 a^7 B-5 a^5 b^2 B-4 a^3 b^4 B-a b^6 B\right) \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]-\frac{b \left(3 a^2 A+4 A b^2-a b B\right)}{3 a^2 \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}-\frac{A \text{Cot}[c+d x]}{a d (a+b \text{Tan}[c+d x])^3}-\frac{b \left(2 a^4 A+8 a^2 A b^2+4 A b^4-3 a^3 b B-a b^3 B\right)}{2 a^3 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2}-\frac{b \left(a^6 A+13 a^4 A b^2+12 a^2 A b^4+4 A b^6-6 a^5 b B-3 a^3 b^3 B-a b^5 B\right)}{a^4 \left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])}$$

Result (type 3, 2351 leaves):

$$\Big(\big(20 i a^{20} A b^3+20 a^{19} A b^4+84 i a^{18} A b^5+84 a^{17} A b^6+148 i a^{16} A b^7+148 a^{15} A b^8+144 i a^{14} A b^9+144 a^{13} A b^{10}+84 i a^{12} A b^{11}+84 a^{11} A b^{12}+28 i a^{10} A b^{13}+28 a^9 A b^{14}+4 i a^8 A b^{15}+4 a^7 A b^{16}-10 i a^{21} b^2 B-10 a^{20} b^3 B-35 i a^{19} b^4 B-35 a^{18} b^5 B-49 i a^{17} b^6 B-49 a^{16} b^7 B-38 i a^{15} b^8 B-38 a^{14} b^9 B-20 i a^{13} b^{10} B-20 a^{12} b^{11} B-7 i a^{11} b^{12} B-7 a^{10} b^{13} B-i a^9 b^{14} B-a^8 b^{15} B\big) (c+d x) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^4\Big)\Big/\Big(a^{12} (a-i b)^8 (a+i b)^7 d (b+a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)-$$
$$\Big(i \left(20 a^6 A b^3+24 a^4 A b^5+16 a^2 A b^7+4 A b^9-10 a^7 b^2 B-5 a^5 b^4 B-4 a^3 b^6 B-a b^8 B\right) \text{ArcTan}[\text{Tan}[c+d x]] (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^3 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^4\Big)\Big/\Big(a^5 \left(a^2+b^2\right)^4 d (b+a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)+$$
$$\Big((-4 A b+a B) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^3 \text{Log}[\text{Sin}[c+d x]] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^4\Big)\Big/\Big(a^5 d (b+a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)+$$
$$\Big(\left(20 a^6 A b^3+24 a^4 A b^5+16 a^2 A b^7+4 A b^9-10 a^7 b^2 B-5 a^5 b^4 B-4 a^3 b^6 B-a b^8 B\right) (B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^3 \text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right] (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^4\Big)\Big/\Big(2 a^5 \left(a^2+b^2\right)^4 d (b+a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\Big)+$$
$$\Big((B+A \text{Cot}[c+d x]) \text{Csc}[c+d x]^4 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])$$
$$\big(-9 a^{12} A-45 a^{10} A b^2-45 a^8 A b^4+90 a^6 A b^6+183 a^4 A b^8+111 a^2 A b^{10}+27 A b^{12}-30 a^9 b^3 B-105 a^7 b^5 B-105 a^5 b^7 B-39 a^3 b^9 B-9 a b^{11} B-9 a^{11} A b (c+d x)+45 a^9 A b^3 (c+d x)+45 a^7 A b^5 (c+d x)-9 a^5 A b^7 (c+d x)-36 a^{10} b^2 B (c+d x)+36 a^6 b^6 B (c+d x)-12 a^{12} A \text{Cos}[2 (c+d x)]-48 a^{10} A b^2 \text{Cos}[2 (c+d x)]-72 a^8 A b^4 \text{Cos}[2 (c+d x)]-196 a^6 A b^6 \text{Cos}[2 (c+d x)]-276 a^4 A b^8 \text{Cos}[2 (c+d x)]-152 a^2 A b^{10} \text{Cos}[2 (c+d x)]-36 A b^{12} \text{Cos}[2 (c+d x)]+94 a^7 b^5 B \text{Cos}[2 (c+d x)]+132 a^5 b^7 B \text{Cos}[2 (c+d x)]+50 a^3 b^9 B \text{Cos}[2 (c+d x)]+12 a b^{11} B \text{Cos}[2 (c+d x)]+12 a^9 A b^3 (c+d x) \text{Cos}[2 (c+d x)]-72 a^7 A b^5 (c+d x) \text{Cos}[2 (c+d x)]+12 a^5 A b^7 (c+d x) \text{Cos}[2 (c+d x)]+48 a^8 b^4 B (c+d x) \text{Cos}[2 (c+d x)]-48 a^6 b^6 B (c+d x) \text{Cos}[2 (c+d x)]-3 a^{12} A \text{Cos}[4 (c+d x)]-3 a^{10} A b^2 \text{Cos}[4 (c+d x)]-27 a^8 A b^4 \text{Cos}[4 (c+d x)]+10 a^6 A b^6 \text{Cos}[4 (c+d x)]+69 a^4 A b^8 \text{Cos}[4 (c+d x)]+41 a^2 A b^{10} \text{Cos}[4 (c+d x)]+9 A b^{12} \text{Cos}[4 (c+d x)]+30 a^9 b^3 B \text{Cos}[4 (c+d x)]+11 a^7 b^5 B \text{Cos}[4 (c+d x)]-27 a^5 b^7 B \text{Cos}[4 (c+d x)]-11 a^3 b^9 B \text{Cos}[4 (c+d x)]-3 a b^{11} B \text{Cos}[4 (c+d x)]+$$

$9 a^{11} A b (c+d x) \text{Cos}[4 (c+d x)] - 57 a^9 A b^3 (c+d x) \text{Cos}[4 (c+d x)] + 27 a^7 A b^5 (c+d x) \text{Cos}[4 (c+d x)] - 3 a^5 A b^7 (c+d x) \text{Cos}[4 (c+d x)] + 36 a^{10} b^2 B (c+d x) \text{Cos}[4 (c+d x)] - 48 a^8 b^4 B (c+d x) \text{Cos}[4 (c+d x)] + 12 a^6 b^6 B (c+d x) \text{Cos}[4 (c+d x)] - 18 a^{11} A b \text{Sin}[2 (c+d x)] - 78 a^9 A b^3 \text{Sin}[2 (c+d x)] + 12 a^7 A b^5 \text{Sin}[2 (c+d x)] + 148 a^5 A b^7 \text{Sin}[2 (c+d x)] + 106 a^3 A b^9 \text{Sin}[2 (c+d x)] + 30 a A b^{11} \text{Sin}[2 (c+d x)] - 90 a^8 b^4 B \text{Sin}[2 (c+d x)] - 124 a^6 b^6 B \text{Sin}[2 (c+d x)] - 46 a^4 b^8 B \text{Sin}[2 (c+d x)] - 12 a^2 b^{10} B \text{Sin}[2 (c+d x)] - 6 a^{12} A (c+d x) \text{Sin}[2 (c+d x)] + 18 a^{10} A b^2 (c+d x) \text{Sin}[2 (c+d x)] + 102 a^8 A b^4 (c+d x) \text{Sin}[2 (c+d x)] - 18 a^6 A b^6 (c+d x) \text{Sin}[2 (c+d x)] - 24 a^{11} b B (c+d x) \text{Sin}[2 (c+d x)] - 48 a^9 b^3 B (c+d x) \text{Sin}[2 (c+d x)] + 72 a^7 b^5 B (c+d x) \text{Sin}[2 (c+d x)] - 9 a^{11} A b \text{Sin}[4 (c+d x)] - 33 a^9 A b^3 \text{Sin}[4 (c+d x)] - 132 a^7 A b^5 \text{Sin}[4 (c+d x)] - 172 a^5 A b^7 \text{Sin}[4 (c+d x)] - 79 a^3 A b^9 \text{Sin}[4 (c+d x)] - 15 a A b^{11} \text{Sin}[4 (c+d x)] + 60 a^8 b^4 B \text{Sin}[4 (c+d x)] + 82 a^6 b^6 B \text{Sin}[4 (c+d x)] + 28 a^4 b^8 B \text{Sin}[4 (c+d x)] + 6 a^2 b^{10} B \text{Sin}[4 (c+d x)] - 3 a^{12} A (c+d x) \text{Sin}[4 (c+d x)] + 27 a^{10} A b^2 (c+d x) \text{Sin}[4 (c+d x)] - 57 a^8 A b^4 (c+d x) \text{Sin}[4 (c+d x)] + 9 a^6 A b^6 (c+d x) \text{Sin}[4 (c+d x)] - 12 a^{11} b B (c+d x) \text{Sin}[4 (c+d x)] + 48 a^9 b^3 B (c+d x) \text{Sin}[4 (c+d x)] - 36 a^7 b^5 B (c+d x) \text{Sin}[4 (c+d x)])) \Big/ \left(24 a^5 (a - i b)^4 (a + i b)^4 d (b + a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x] + B \text{Sin}[c+d x])\right)$

Problem 297: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 477 leaves, 8 steps):

$$\frac{(4 a^3 A b - 4 a A b^3 - a^4 B + 6 a^2 b^2 B - b^4 B) x}{(a^2+b^2)^4} - \frac{(a^2 A - 10 A b^2 + 4 a b B) \text{Log}[\text{Sin}[c+d x]]}{a^6 d} - \frac{1}{a^6 (a^2+b^2)^4 d} b^3 (35 a^6 A b + 56 a^4 A b^3 + 39 a^2 A b^5 + 10 A b^7 - 20 a^7 B - 24 a^5 b^2 B - 16 a^3 b^4 B - 4 a b^6 B) \text{Log}[a \text{Cos}[c+d x] + b \text{Sin}[c+d x]] + \frac{b (9 a^2 A b + 10 A b^3 - 3 a^3 B - 4 a b^2 B)}{3 a^3 (a^2+b^2) d (a + b \text{Tan}[c+d x])^3} + \frac{(5 A b - 2 a B) \text{Cot}[c+d x]}{2 a^2 d (a + b \text{Tan}[c+d x])^3} - \frac{A \text{Cot}[c+d x]^2}{2 a d (a + b \text{Tan}[c+d x])^3} + \frac{b (7 a^4 A b + 19 a^2 A b^3 + 10 A b^5 - 2 a^5 B - 8 a^3 b^2 B - 4 a b^4 B)}{2 a^4 (a^2+b^2)^2 d (a + b \text{Tan}[c+d x])^2} + \left(b (4 a^6 A b + 27 a^4 A b^3 + 29 a^2 A b^5 + 10 A b^7 - a^7 B - 13 a^5 b^2 B - 12 a^3 b^4 B - 4 a b^6 B)\right) \Big/ \left(a^5 (a^2+b^2)^3 d (a + b \text{Tan}[c+d x])\right)$$

Result (type 3, 3045 leaves):

$((-35 i a^{21} A b^4 - 35 a^{20} A b^5 - 161 i a^{19} A b^6 - 161 a^{18} A b^7 - 312 i a^{17} A b^8 - 312 a^{16} A b^9 - 330 i a^{15} A b^{10} - 330 a^{14} A b^{11} - 203 i a^{13} A b^{12} - 203 a^{12} A b^{13} - 69 i a^{11} A b^{14} - 69 a^{10} A b^{15} - 10 i a^9 A b^{16} - 10 a^8 A b^{17} + 20 i a^{22} b^3 B + 20 a^{21} b^4 B +$

$$84 i a^{20} b^5 B + 84 a^{19} b^6 B + 148 i a^{18} b^7 B + 148 a^{17} b^8 B + 144 i a^{16} b^9 B + 144 a^{15} b^{10} B + 84 i a^{14} b^{11} B + 84 a^{13} b^{12} B + 28 i a^{12} b^{13} B + 28 a^{11} b^{14} B + 4 i a^{10} b^{15} B + 4 a^9 b^{16} B)$$

$$(c + d x) (B + A \text{Cot}[c + d x]) \text{Csc}[c + d x]^3 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^4) \Big/ \left(a^{14} (a - i b)^8 (a + i b)^7 d (b + a \text{Cot}[c + d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) -$$

$$\Big(i (-35 a^6 A b^4 - 56 a^4 A b^6 - 39 a^2 A b^8 - 10 A b^{10} + 20 a^7 b^3 B + 24 a^5 b^5 B + 16 a^3 b^7 B + 4 a b^9 B) \text{ArcTan}[\text{Tan}[c + d x]] (B + A \text{Cot}[c + d x]) \text{Csc}[c + d x]^3 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^4\Big) \Big/ \left(a^6 (a^2 + b^2)^4 d (b + a \text{Cot}[c + d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$

$$\Big((-a^2 A + 10 A b^2 - 4 a b B) (B + A \text{Cot}[c + d x]) \text{Csc}[c + d x]^3 \text{Log}[\text{Sin}[c + d x]] (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^4\Big) \Big/ \left(a^6 d (b + a \text{Cot}[c + d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$

$$\Big((-35 a^6 A b^4 - 56 a^4 A b^6 - 39 a^2 A b^8 - 10 A b^{10} + 20 a^7 b^3 B + 24 a^5 b^5 B + 16 a^3 b^7 B + 4 a b^9 B) (B + A \text{Cot}[c + d x]) \text{Csc}[c + d x]^3 \text{Log}\left[(a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^2\right] (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])^4\Big) \Big/ \left(2 a^6 (a^2 + b^2)^4 d (b + a \text{Cot}[c + d x])^4 (A \text{Cos}[c + d x] + B \text{Sin}[c + d x])\right) +$$

$$\Big((B + A \text{Cot}[c + d x]) \text{Csc}[c + d x]^5 (a \text{Cos}[c + d x] + b \text{Sin}[c + d x])$$

$$(-18 a^{13} A \text{Cos}[c + d x] - 18 a^{11} A b^2 \text{Cos}[c + d x] + 132 a^9 A b^4 \text{Cos}[c + d x] + 138 a^7 A b^6 \text{Cos}[c + d x] - 82 a^5 A b^8 \text{Cos}[c + d x] - 136 a^3 A b^{10} \text{Cos}[c + d x] - 48 a A b^{12} \text{Cos}[c + d x] - 18 a^{12} b B \text{Cos}[c + d x] - 78 a^{10} b^3 B \text{Cos}[c + d x] + 12 a^8 b^5 B \text{Cos}[c + d x] + 148 a^6 b^7 B \text{Cos}[c + d x] + 106 a^4 b^9 B \text{Cos}[c + d x] + 30 a^2 b^{11} B \text{Cos}[c + d x] + 24 a^{12} A b (c + d x) \text{Cos}[c + d x] + 48 a^{10} A b^3 (c + d x) \text{Cos}[c + d x] - 72 a^8 A b^5 (c + d x) \text{Cos}[c + d x] - 6 a^{13} B (c + d x) \text{Cos}[c + d x] + 18 a^{11} b^2 B (c + d x) \text{Cos}[c + d x] + 102 a^9 b^4 B (c + d x) \text{Cos}[c + d x] - 18 a^7 b^6 B (c + d x) \text{Cos}[c + d x] - 6 a^{13} A \text{Cos}[3 (c + d x)] - 42 a^{11} A b^2 \text{Cos}[3 (c + d x)] - 144 a^9 A b^4 \text{Cos}[3 (c + d x)] + 60 a^7 A b^6 \text{Cos}[3 (c + d x)] + 374 a^5 A b^8 \text{Cos}[3 (c + d x)] + 278 a^3 A b^{10} \text{Cos}[3 (c + d x)] + 72 a A b^{12} \text{Cos}[3 (c + d x)] + 9 a^{12} b B \text{Cos}[3 (c + d x)] + 45 a^{10} b^3 B \text{Cos}[3 (c + d x)] - 144 a^8 b^5 B \text{Cos}[3 (c + d x)] - 320 a^6 b^7 B \text{Cos}[3 (c + d x)] - 185 a^4 b^9 B \text{Cos}[3 (c + d x)] - 45 a^2 b^{11} B \text{Cos}[3 (c + d x)] - 12 a^{12} A b (c + d x) \text{Cos}[3 (c + d x)] - 96 a^{10} A b^3 (c + d x) \text{Cos}[3 (c + d x)] + 108 a^8 A b^5 (c + d x) \text{Cos}[3 (c + d x)] + 3 a^{13} B (c + d x) \text{Cos}[3 (c + d x)] + 9 a^{11} b^2 B (c + d x) \text{Cos}[3 (c + d x)] - 159 a^9 b^4 B (c + d x) \text{Cos}[3 (c + d x)] + 27 a^7 b^6 B (c + d x) \text{Cos}[3 (c + d x)] - 36 a^{11} A b^2 \text{Cos}[5 (c + d x)] - 132 a^9 A b^4 \text{Cos}[5 (c + d x)] - 294 a^7 A b^6 \text{Cos}[5 (c + d x)] - 316 a^5 A b^8 \text{Cos}[5 (c + d x)] - 142 a^3 A b^{10} \text{Cos}[5 (c + d x)] - 24 a A b^{12} \text{Cos}[5 (c + d x)] + 9 a^{12} b B \text{Cos}[5 (c + d x)] + 33 a^{10} b^3 B \text{Cos}[5 (c + d x)] + 132 a^8 b^5 B \text{Cos}[5 (c + d x)] + 172 a^6 b^7 B \text{Cos}[5 (c + d x)] + 79 a^4 b^9 B \text{Cos}[5 (c + d x)] + 15 a^2 b^{11} B \text{Cos}[5 (c + d x)] - 12 a^{12} A b (c + d x) \text{Cos}[5 (c + d x)] + 48 a^{10} A b^3 (c + d x) \text{Cos}[5 (c + d x)] - 36 a^8 A b^5 (c + d x) \text{Cos}[5 (c + d x)] + 3 a^{13} B (c + d x) \text{Cos}[5 (c + d x)] - 27 a^{11} b^2 B (c + d x) \text{Cos}[5 (c + d x)] + 57 a^9 b^4 B (c + d x) \text{Cos}[5 (c + d x)] - 9 a^7 b^6 B (c + d x) \text{Cos}[5 (c + d x)] + 6 a^{12} A b \text{Sin}[c + d x] + 78 a^{10} A b^3 \text{Sin}[c + d x] + 126 a^8 A b^5 \text{Sin}[c + d x] - 412 a^6 A b^7 \text{Sin}[c + d x] - 984 a^4 A b^9 \text{Sin}[c + d x] - 698 a^2 A b^{11} \text{Sin}[c + d x] - 180 A b^{13} \text{Sin}[c + d x] - 6 a^{13} B \text{Sin}[c + d x] - 42 a^{11} b^2 B \text{Sin}[c + d x] - 18 a^9 b^4 B \text{Sin}[c + d x] + 376 a^7 b^6 B \text{Sin}[c + d x] + 642 a^5 b^8 B \text{Sin}[c + d x] + 374 a^3 b^{10} B \text{Sin}[c + d x] + 90 a b^{12} B \text{Sin}[c + d x] + 72 a^{11} A b^2 (c + d x) \text{Sin}[c + d x] + 48 a^9 A b^4 (c + d x) \text{Sin}[c + d x] - 120 a^7 A b^6 (c + d x) \text{Sin}[c + d x] - 18 a^{12} b B (c + d x) \text{Sin}[c + d x] + 78 a^{10} b^3 B (c + d x) \text{Sin}[c + d x] + 162 a^8 b^5 B (c + d x) \text{Sin}[c + d x] - 30 a^6 b^7 B (c + d x) \text{Sin}[c + d x] +$$

$18 a^{12} A b \text{Sin}[3 (c+d x)] + 114 a^{10} A b^3 \text{Sin}[3 (c+d x)] + 213 a^8 A b^5 \text{Sin}[3 (c+d x)] +$
$479 a^6 A b^7 \text{Sin}[3 (c+d x)] + 663 a^4 A b^9 \text{Sin}[3 (c+d x)] + 391 a^2 A b^{11} \text{Sin}[3 (c+d x)] +$
$90 A b^{13} \text{Sin}[3 (c+d x)] - 9 a^{13} B \text{Sin}[3 (c+d x)] - 45 a^{11} b^2 B \text{Sin}[3 (c+d x)] -$
$45 a^9 b^4 B \text{Sin}[3 (c+d x)] - 206 a^7 b^6 B \text{Sin}[3 (c+d x)] - 345 a^5 b^8 B \text{Sin}[3 (c+d x)] -$
$193 a^3 b^{10} B \text{Sin}[3 (c+d x)] - 45 a b^{12} B \text{Sin}[3 (c+d x)] + 36 a^{11} A b^2 (c+d x) \text{Sin}[3 (c+d x)] -$
$96 a^9 A b^4 (c+d x) \text{Sin}[3 (c+d x)] + 60 a^7 A b^6 (c+d x) \text{Sin}[3 (c+d x)] -$
$9 a^{12} b B (c+d x) \text{Sin}[3 (c+d x)] + 69 a^{10} b^3 B (c+d x) \text{Sin}[3 (c+d x)] -$
$99 a^8 b^5 B (c+d x) \text{Sin}[3 (c+d x)] + 15 a^6 b^7 B (c+d x) \text{Sin}[3 (c+d x)] +$
$12 a^{12} A b \text{Sin}[5 (c+d x)] + 12 a^{10} A b^3 \text{Sin}[5 (c+d x)] - 9 a^8 A b^5 \text{Sin}[5 (c+d x)] -$
$109 a^6 A b^7 \text{Sin}[5 (c+d x)] - 177 a^4 A b^9 \text{Sin}[5 (c+d x)] - 95 a^2 A b^{11} \text{Sin}[5 (c+d x)] -$
$18 A b^{13} \text{Sin}[5 (c+d x)] - 3 a^{13} B \text{Sin}[5 (c+d x)] - 3 a^{11} b^2 B \text{Sin}[5 (c+d x)] -$
$27 a^9 b^4 B \text{Sin}[5 (c+d x)] + 10 a^7 b^6 B \text{Sin}[5 (c+d x)] + 69 a^5 b^8 B \text{Sin}[5 (c+d x)] +$
$41 a^3 b^{10} B \text{Sin}[5 (c+d x)] + 9 a b^{12} B \text{Sin}[5 (c+d x)] - 36 a^{11} A b^2 (c+d x) \text{Sin}[5 (c+d x)] +$
$48 a^9 A b^4 (c+d x) \text{Sin}[5 (c+d x)] - 12 a^7 A b^6 (c+d x) \text{Sin}[5 (c+d x)] +$
$9 a^{12} b B (c+d x) \text{Sin}[5 (c+d x)] - 57 a^{10} b^3 B (c+d x) \text{Sin}[5 (c+d x)] +$
$27 a^8 b^5 B (c+d x) \text{Sin}[5 (c+d x)] - 3 a^6 b^7 B (c+d x) \text{Sin}[5 (c+d x)])) \Big/$
$\left(48 a^6 (a-i b)^4 (a+i b)^4 d (b+a \text{Cot}[c+d x])^4 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$

Problem 309: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 48 leaves, 3 steps):

$$\frac{b B x}{a^2+b^2}-\frac{a B \text{Log}[a \text{Cos}[c+d x]+b \text{Sin}[c+d x]]}{(a^2+b^2) d}$$

Result (type 3, 67 leaves):

$$\frac{1}{2 (a^2+b^2) d}$$
$$B \left(2 (-i a+b) (c+d x)+2 i a \text{ArcTan}[\text{Tan}[c+d x]]-a \text{Log}\left[(a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2\right]\right)$$

Problem 314: Result more than twice size of optimal antiderivative.

$$\int \frac{3+\text{Tan}[c+d x]}{2-\text{Tan}[c+d x]} \, dx$$

Optimal (type 3, 25 leaves, 2 steps):

$$x-\frac{\text{Log}[2 \text{Cos}[c+d x]-\text{Sin}[c+d x]]}{d}$$

Result (type 3, 62 leaves):

$$\frac{\text{ArcTan}[\text{Tan}[c+d x]]}{d}+\frac{\text{Log}\left[5-4 (2-\text{Tan}[c+d x])+(2-\text{Tan}[c+d x])^2\right]}{2 d}-\frac{\text{Log}[2-\text{Tan}[c+d x]]}{d}$$

Problem 316: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$-\frac{a\,(a^2-3\,b^2)\,x}{(a^2+b^2)^2}+\frac{b\,(3\,a^2-b^2)\,\mathrm{Log}[b\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]]}{(a^2+b^2)^2\,d}-\frac{a^2-b^2}{(a^2+b^2)\,d\,(b+a\,\mathrm{Tan}[c+d\,x])}$$

Result (type 3, 219 leaves):

$$\frac{1}{2\,b\,(a^2+b^2)^2\,d\,(b+a\,\mathrm{Tan}[c+d\,x])}\Big(b^2\,\big(-2\,(a-i\,b)^3\,(c+d\,x)-b\,(-3\,a^2+b^2)\,\mathrm{Log}\big[(b\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x])^2\big]\big)+$$
$$a\,\Big(2\,(a-i\,b)\,(a^3-a^2\,b\,(-i+c+d\,x)+b^3\,(-i+c+d\,x)+i\,a\,b^2\,(i+2\,c+2\,d\,x))-$$
$$b^2\,(-3\,a^2+b^2)\,\mathrm{Log}\big[(b\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x])^2\big]\Big)\,\mathrm{Tan}[c+d\,x]+$$
$$2\,i\,b^2\,(-3\,a^2+b^2)\,\mathrm{ArcTan}[\mathrm{Tan}[c+d\,x]]\,(b+a\,\mathrm{Tan}[c+d\,x])\Big)$$

Problem 317: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^3\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 233 leaves, 11 steps):

$$\frac{\sqrt{a-i\,b}\,(A-i\,B)\,\mathrm{ArcTanh}\Big[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\Big]}{d}+\frac{\sqrt{a+i\,b}\,(A+i\,B)\,\mathrm{ArcTanh}\Big[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\Big]}{d}-$$
$$\frac{2\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}-\frac{2\,(14\,a\,A\,b-8\,a^2\,B+35\,b^2\,B)\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{105\,b^3\,d}+$$
$$\frac{2\,(7\,A\,b-4\,a\,B)\,\mathrm{Tan}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{35\,b^2\,d}+\frac{2\,B\,\mathrm{Tan}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{7\,b\,d}$$

Result (type 3, 498 leaves):

$$-\left(\left(\left(\mathrm{i}\,(A\,b+a\,B)\left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.\right.\right.$$

$$\left.\operatorname{Cos}[c+d\,x]^2\,(a+b\,\operatorname{Tan}[c+d\,x])\,(A+B\,\operatorname{Tan}[c+d\,x])\right)\Big/$$

$$\left.(d\,(a\,\operatorname{Cos}[c+d\,x]+b\,\operatorname{Sin}[c+d\,x])\,(A\,\operatorname{Cos}[c+d\,x]+B\,\operatorname{Sin}[c+d\,x]))\right)-$$

$$\left((-a\,A+b\,B)\left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.$$

$$\left.\operatorname{Cos}[c+d\,x]^2\,(a+b\,\operatorname{Tan}[c+d\,x])\,(A+B\,\operatorname{Tan}[c+d\,x])\right)\Big/$$

$$(d\,(a\,\operatorname{Cos}[c+d\,x]+b\,\operatorname{Sin}[c+d\,x])\,(A\,\operatorname{Cos}[c+d\,x]+B\,\operatorname{Sin}[c+d\,x]))+$$

$$\left(\operatorname{Cos}[c+d\,x]\,\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}\,(A+B\,\operatorname{Tan}[c+d\,x])\right.$$

$$\left(-\frac{4\,(7\,a^2\,A\,b+63\,A\,b^3-4\,a^3\,B+19\,a\,b^2\,B)}{105\,b^3}+\frac{2\,(7\,A\,b+a\,B)\,\operatorname{Sec}[c+d\,x]^2}{35\,b}-\frac{1}{105\,b^2}\right.$$

$$2\,\operatorname{Sec}[c+d\,x]\,(-7\,a\,A\,b\,\operatorname{Sin}[c+d\,x]+4\,a^2\,B\,\operatorname{Sin}[c+d\,x]+50\,b^2\,B\,\operatorname{Sin}[c+d\,x])+$$

$$\left.\left.\frac{2}{7}\,B\,\operatorname{Sec}[c+d\,x]^2\,\operatorname{Tan}[c+d\,x]\right)\right)\Big/\,(d\,(A\,\operatorname{Cos}[c+d\,x]+B\,\operatorname{Sin}[c+d\,x]))$$

Problem 318: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 186 leaves, 10 steps):

$$\frac{\sqrt{a-\mathrm{i}\,b}\,(\mathrm{i}\,A+B)\,\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}-$$

$$\frac{\sqrt{a+\mathrm{i}\,b}\,(\mathrm{i}\,A-B)\,\operatorname{ArcTanh}\left[\frac{\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}-\frac{2\,B\,\sqrt{a+b\,\operatorname{Tan}[c+d\,x]}}{d}+$$

$$\frac{2\,(5\,A\,b-2\,a\,B)\,(a+b\,\operatorname{Tan}[c+d\,x])^{3/2}}{15\,b^2\,d}+\frac{2\,B\,\operatorname{Tan}[c+d\,x]\,(a+b\,\operatorname{Tan}[c+d\,x])^{3/2}}{5\,b\,d}$$

Result (type 3, 443 leaves):

$$\left(\text{Cos}[c+d\,x]\left(-\frac{2\left(-5\,a\,A\,b+2\,a^2\,B+18\,b^2\,B\right)}{15\,b^2}+\frac{2}{5}\,B\,\text{Sec}[c+d\,x]^2+\frac{2\,\text{Sec}[c+d\,x]\left(5\,A\,b\,\text{Sin}[c+d\,x]+a\,B\,\text{Sin}[c+d\,x]\right)}{15\,b}\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+$$

$$\left(\mathrm{i}\left(a\,A-b\,B\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^2\left(a+b\,\text{Tan}[c+d\,x]\right)\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+$$

$$\left(\left(A\,b+a\,B\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^2\left(a+b\,\text{Tan}[c+d\,x]\right)\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 322: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^2\sqrt{a+b\,\text{Tan}[c+d\,x]}\left(A+B\,\text{Tan}[c+d\,x]\right)\,\mathrm{d}x$$

Optimal (type 3, 167 leaves, 12 steps):

$$-\frac{\left(A\,b+2\,a\,B\right)\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,d}+\frac{\sqrt{a-\mathrm{i}\,b}\left(\mathrm{i}\,A+B\right)\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}-$$

$$\frac{\sqrt{a+\mathrm{i}\,b}\left(\mathrm{i}\,A-B\right)\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}-\frac{A\,\text{Cot}[c+d\,x]\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 23 646 leaves): Display of huge result suppressed!

Problem 323: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^3 \sqrt{a+b \text{Tan}[c+d x]} \, (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 219 leaves, 13 steps):

$$\frac{\left(8 a^2 A+A b^2-4 a b B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{3/2} d}-\frac{\sqrt{a-i b} \, (A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}-\frac{\sqrt{a+i b} \, (A+i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}-\frac{(A b+4 a B) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 a d}-\frac{A \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{2 d}$$

Result (type 4, 25 731 leaves): Display of huge result suppressed!

Problem 324: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^4 \sqrt{a+b \text{Tan}[c+d x]} \, (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 279 leaves, 14 steps):

$$\frac{\left(8 a^2 A b-A b^3+16 a^3 B+2 a b^2 B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{8 a^{5/2} d}-\frac{\sqrt{a-i b} \, (i A+B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}+\frac{\sqrt{a+i b} \, (i A-B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}+\frac{\left(8 a^2 A+A b^2-2 a b B\right) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{8 a^2 d}-\frac{(A b+6 a B) \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{12 a d}-\frac{A \text{Cot}[c+d x]^3 \sqrt{a+b \text{Tan}[c+d x]}}{3 d}$$

Result (type 4, 27 748 leaves): Display of huge result suppressed!

Problem 325: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 214 leaves, 11 steps):

$$\frac{(a-\mathrm{i}\, b)^{3/2}\,(\mathrm{i}\, A+B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\, b}}\right]}{d}-\frac{(a+\mathrm{i}\, b)^{3/2}\,(\mathrm{i}\, A-B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\, b}}\right]}{d}-$$
$$\frac{2\,(A\,b+a\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}-\frac{2\,B\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}+$$
$$\frac{2\,(7\,A\,b-2\,a\,B)\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{35\,b^2\,d}+\frac{2\,B\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{7\,b\,d}$$

Result (type 3, 540 leaves):

$$\left(\mathrm{i}\,(a^2\,A-A\,b^2-2\,a\,b\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\, b}}\right]}{\sqrt{a-\mathrm{i}\, b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\, b}}\right]}{\sqrt{a+\mathrm{i}\, b}}\right)\right.$$
$$\left.\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$
$$\left((2\,a\,A\,b+a^2\,B-b^2\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\, b}}\right]}{\sqrt{a-\mathrm{i}\, b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\, b}}\right]}{\sqrt{a+\mathrm{i}\, b}}\right)\right.$$
$$\left.\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$
$$\left(\text{Cos}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right.$$
$$\left(-\frac{2\,(-21\,a^2\,A\,b+126\,A\,b^3+6\,a^3\,B+164\,a\,b^2\,B)}{105\,b^2}+\frac{2}{35}\,(7\,A\,b+8\,a\,B)\,\text{Sec}[c+d\,x]^2-\frac{1}{105\,b}\right.$$
$$2\,\text{Sec}[c+d\,x]\,(-42\,a\,A\,b\,\text{Sin}[c+d\,x]-3\,a^2\,B\,\text{Sin}[c+d\,x]+50\,b^2\,B\,\text{Sin}[c+d\,x])+$$
$$\left.\left.\frac{2}{7}\,b\,B\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 326: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 175 leaves, 10 steps):

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

Result (type 3, 487 leaves):

$$\left(\text{Cos}[c+d\,x]^2\left(\frac{2\,(20\,a\,A\,b+3\,a^2\,B-18\,b^2\,B)}{15\,b}+\frac{2}{5}\,b\,B\,\text{Sec}[c+d\,x]^2+\frac{2}{15}\,\text{Sec}[c+d\,x]\,(5\,A\,b\,\text{Sin}[c+d\,x]+6\,a\,B\,\text{Sin}[c+d\,x])\right)(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)-\left(\mathrm{i}\,(-2\,a\,A\,b-a^2\,B+b^2\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)-\left((a^2\,A-A\,b^2-2\,a\,b\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\text{Cos}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 327: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 150 leaves, 9 steps):

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

Result (type 3, 442 leaves):

$$-\left(\left(\left(\mathrm{i}\,\left(a^2 A - A b^2 - 2 a b B\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}} - \frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.\right.\right.$$

$$\left.\mathrm{Cos}[c+d\,x]^3\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^2\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left.\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right)\right) -$$

$$\left(\left(2\,a\,A\,b + a^2 B - b^2 B\right)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}} + \frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.$$

$$\left.\mathrm{Cos}[c+d\,x]^3\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^2\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right) +$$

$$\left(\mathrm{Cos}[c+d\,x]^2\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\,\left(\frac{2}{3}\,\left(3\,A\,b+4\,a\,B\right)+\frac{2}{3}\,b\,B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right)$$

Problem 328: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 152 leaves, 12 steps):

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

$$\frac{\left(a+\mathrm{i}\,b\right)^{3/2}\,\left(A+\mathrm{i}\,B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d} + \frac{2\,b\,B\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}$$

Result (type 4, 29 055 leaves): Display of huge result suppressed!

Problem 329: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 169 leaves, 12 steps):

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

Result (type 4, 30 728 leaves): Display of huge result suppressed!

Problem 330: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 219 leaves, 13 steps):

$$\frac{\left(8 a^2 A-3 A b^2-12 a b B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 \sqrt{a} d}-\frac{(a-i b)^{3/2} (A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}-\frac{(a+i b)^{3/2} (A+i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}-\frac{(5 A b+4 a B) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 d}-\frac{a A \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{2 d}$$

Result (type 4, 32 510 leaves): Display of huge result suppressed!

Problem 331: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 278 leaves, 14 steps):

$$\frac{\left(24\,a^2\,A\,b+A\,b^3+16\,a^3\,B-6\,a\,b^2\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{8\,a^{3/2}\,d}-$$

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

$$\frac{\left(8\,a^2\,A-A\,b^2-10\,a\,b\,B\right)\,\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{8\,a\,d}-$$

$$\frac{(7\,A\,b+6\,a\,B)\,\text{Cot}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{12\,d}-\frac{a\,A\,\text{Cot}[c+d\,x]^3\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d}$$

Result (type 4, 34 557 leaves) : Display of huge result suppressed!

Problem 332: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 252 leaves, 12 steps) :

$$\frac{(a-i\,b)^{5/2}\,(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{d}-$$

$$\frac{(a+i\,b)^{5/2}\,(i\,A-B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{d}-\frac{2\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}-$$

$$\frac{2\,(A\,b+a\,B)\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}-\frac{2\,B\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}{5\,d}+$$

$$\frac{2\,(9\,A\,b-2\,a\,B)\,(a+b\,\text{Tan}[c+d\,x])^{7/2}}{63\,b^2\,d}+\frac{2\,B\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{7/2}}{9\,b\,d}$$

Result (type 3, 622 leaves) :

$$\frac{1}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$

$$\text{Cos}[c+d\,x]^3\left(-\frac{2\,(-45\,a^3\,A\,b+870\,a\,A\,b^3+10\,a^4\,B+558\,a^2\,b^2\,B-413\,b^4\,B)}{315\,b^2}+\right.$$

$$\frac{2}{315}\,(135\,a\,A\,b+75\,a^2\,B-133\,b^2\,B)\,\text{Sec}[c+d\,x]^2+\frac{2}{9}\,b^2\,B\,\text{Sec}[c+d\,x]^4+$$

$$\frac{2}{63}\,\text{Sec}[c+d\,x]^3\,(9\,A\,b^2\,\text{Sin}[c+d\,x]+19\,a\,b\,B\,\text{Sin}[c+d\,x])-\frac{1}{315\,b}2\,\text{Sec}[c+d\,x]$$

$$\left.(-135\,a^2\,A\,b\,\text{Sin}[c+d\,x]+150\,A\,b^3\,\text{Sin}[c+d\,x]-5\,a^3\,B\,\text{Sin}[c+d\,x]+326\,a\,b^2\,B\,\text{Sin}[c+d\,x])\right)$$

$$(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])+$$

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

$$\left.\text{Cos}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$

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

$$\left.\text{Cos}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 333: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 213 leaves, 11 steps):

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

Result (type 3, 558 leaves) :

$$-\left(\left(i \left(-3 a^2 A b+A b^3-a^3 B+3 a b^2 B\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \text{Cos}[c+d x]^4 (a+b \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right) \Big/ \left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)\right)-$$

$$\left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \text{Cos}[c+d x]^4 (a+b \text{Tan}[c+d x])^3 (A+B \text{Tan}[c+d x])\right) \Big/$$

$$\left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+$$

$$\left(\text{Cos}[c+d x]^3 (a+b \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x]) \left(\frac{2 \left(161 a^2 A b-126 A b^3+15 a^3 B-290 a b^2 B\right)}{105 b}+\frac{2}{35} b (7 A b+15 a B) \text{Sec}[c+d x]^2+\frac{2}{105} \text{Sec}[c+d x] \left(77 a A b \text{Sin}[c+d x]+45 a^2 B \text{Sin}[c+d x]-50 b^2 B \text{Sin}[c+d x]\right)+\frac{2}{7} b^2 B \text{Sec}[c+d x]^2 \text{Tan}[c+d x]\right)\right) \Big/$$

$$\left(d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$$

Problem 334: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 188 leaves, 10 steps):

$$-\frac{(a - i b)^{5/2} (i A + B) \operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d} + \frac{(a + i b)^{5/2} (i A - B) \operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d} + \frac{2 \left(2 a A b + a^2 B - b^2 B\right) \sqrt{a + b \operatorname{Tan}[c + d x]}}{d} + \frac{2 (A b + a B) (a + b \operatorname{Tan}[c + d x])^{3/2}}{3 d} + \frac{2 B (a + b \operatorname{Tan}[c + d x])^{5/2}}{5 d}$$

Result (type 3, 506 leaves):

$$\left(\operatorname{Cos}[c + d x]^3 \left(\frac{2}{15} \left(35 a A b + 23 a^2 B - 18 b^2 B\right) + \frac{2}{5} b^2 B \operatorname{Sec}[c + d x]^2 + \frac{2}{15} \operatorname{Sec}[c + d x] \left(5 A b^2 \operatorname{Sin}[c + d x] + 11 a b B \operatorname{Sin}[c + d x]\right)\right) (a + b \operatorname{Tan}[c + d x])^{5/2} (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d (a \operatorname{Cos}[c + d x] + b \operatorname{Sin}[c + d x])^2 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])\right) - \left(i \left(a^3 A - 3 a A b^2 - 3 a^2 b B + b^3 B\right) \left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a - i b}} - \frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a + i b}}\right) \operatorname{Cos}[c + d x]^4 (a + b \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d (a \operatorname{Cos}[c + d x] + b \operatorname{Sin}[c + d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])\right) - \left(\left(3 a^2 A b - A b^3 + a^3 B - 3 a b^2 B\right) \left(\frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a - i b}} + \frac{\operatorname{ArcTanh}\left[\frac{\sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a + i b}}\right) \operatorname{Cos}[c + d x]^4 (a + b \operatorname{Tan}[c + d x])^3 (A + B \operatorname{Tan}[c + d x])\right) \Big/ \left(d (a \operatorname{Cos}[c + d x] + b \operatorname{Sin}[c + d x])^3 (A \operatorname{Cos}[c + d x] + B \operatorname{Sin}[c + d x])\right)$$

Problem 335: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 182 leaves, 13 steps):

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

Result (type 4, 36 102 leaves): Display of huge result suppressed!

Problem 336: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 196 leaves, 13 steps):

$$-\frac{a^{3/2}\,(5\,A\,b+2\,a\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{d}+\frac{(a-\mathrm{i}\,b)^{5/2}\,(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}-\frac{(a+\mathrm{i}\,b)^{5/2}\,(\mathrm{i}\,A-B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}+\frac{b\,(a\,A+2\,b\,B)\,\sqrt{a+b\,\text{Tan}[c+d x]}}{d}-\frac{a\,A\,\text{Cot}[c+d x]\,(a+b\,\text{Tan}[c+d x])^{3/2}}{d}$$

Result (type 4, 37 767 leaves): Display of huge result suppressed!

Problem 337: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^3\,(a+b\,\text{Tan}[c+d x])^{5/2}\,(A+B\,\text{Tan}[c+d x])\,dx$$

Optimal (type 3, 220 leaves, 13 steps):

$$\frac{\sqrt{a}\ \left(8 a^2 A-15 A b^2-20 a b B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 d}-\frac{(a-i b)^{5/2} (A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}-\frac{(a+i b)^{5/2} (A+i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}-\frac{a (7 A b+4 a B) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 d}-\frac{a A \text{Cot}[c+d x]^2 (a+b \text{Tan}[c+d x])^{3/2}}{2 d}$$

Result (type 4, 39 536 leaves): Display of huge result suppressed!

Problem 338: Humongous result has more than 200000 leaves.

$$\int \text{Cot}[c+d x]^4 (a+b \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 277 leaves, 14 steps):

$$\frac{\left(40 a^2 A b-5 A b^3+16 a^3 B-30 a b^2 B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{8 \sqrt{a}\ d}-\frac{(a-i b)^{5/2} (i A+B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{d}+\frac{(a+i b)^{5/2} (i A-B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{d}+\frac{\left(8 a^2 A-11 A b^2-18 a b B\right) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{8 d}-\frac{a (3 A b+2 a B) \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{4 d}-\frac{a A \text{Cot}[c+d x]^3 (a+b \text{Tan}[c+d x])^{3/2}}{3 d}$$

Result (type ?, 240 294 leaves): Display of huge result suppressed!

Problem 339: Humongous result has more than 200000 leaves.

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

Optimal (type 3, 342 leaves, 15 steps):

$$-\frac{1}{64\,a^{3/2}\,d}\left(128\,a^4\,A-240\,a^2\,A\,b^2-5\,A\,b^4-320\,a^3\,b\,B+40\,a\,b^3\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\frac{(a-\mathrm{i}\,b)^{5/2}\,(A-\mathrm{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{d}+\frac{(a+\mathrm{i}\,b)^{5/2}\,(A+\mathrm{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{d}+\frac{1}{64\,a\,d}\left(144\,a^2\,A\,b-5\,A\,b^3+64\,a^3\,B-88\,a\,b^2\,B\right)\,\text{Cot}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}+\frac{\left(48\,a^2\,A-59\,A\,b^2-104\,a\,b\,B\right)\,\text{Cot}[c+d\,x]^2\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{96\,d}-\frac{a\,(11\,A\,b+8\,a\,B)\,\text{Cot}[c+d\,x]^3\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{24\,d}-\frac{a\,A\,\text{Cot}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{4\,d}$$

Result (type ?, 258 206 leaves) : Display of huge result suppressed!

Problem 340: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 151 leaves, 10 steps) :

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

Result (type 3, 479 leaves) :

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

$$\left((a^2+b^2) (-a+b \text{Tan}[c+d x]) (a+b \text{Tan}[c+d x])^{5/2} \left(-\left(\left(i (a^2-b^2) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left(2 a b \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right) \Big/ \left(d \text{Sec}[c+d x]^{7/2} (a \text{Cos}[c+d x]-b \text{Sin}[c+d x]) (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^{5/2}\right)$$

Problem 341: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 408 leaves, 13 steps):

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

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

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

Result (type 3, 180 leaves):

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

Problem 342: Result unnecessarily involves imaginary or complex numbers.

$$\int(-a+b\,\text{Tan}[c+d\,x])\sqrt{a+b\,\text{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 422 leaves, 13 steps):

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

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

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

$$\left(2\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)-$$

$$\left(b\sqrt{a^2+b^2}\,\text{Log}\left[a+\sqrt{a^2+b^2}+b\,\text{Tan}[c+d\,x]+\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right]\right)\Big/$$

$$\left(2\sqrt{2}\,\sqrt{a+\sqrt{a^2+b^2}}\,d\right)+\frac{2\,b\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 3, 120 leaves) :

$$\frac{1}{d}$$

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

Problem 348: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 169 leaves, 12 steps) :

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

Result (type 4, 17 098 leaves):

$$-\frac{A\,(B+A\,\text{Cot}[c+d x])\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}{a\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,\sqrt{a+b\,\text{Tan}[c+d x]}}+$$

$$\Bigg(2\,(B+A\,\text{Cot}[c+d x])\,\Bigg(-A\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+(A b-2 a B)\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,\mathrm{i}\,a\,A$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,\mathrm{i}\,a\,A$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

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

$$A\,b\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\Bigg(-\frac{A\,b\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\,a\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{B\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{B\,\text{Cos}[2(c+d\,x)]\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{A\,\text{Csc}[c+d\,x]\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[2(c+d\,x)]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)$$

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

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

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

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

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

$$\Bigg(a\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}$$

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

$$\Bigg(-\Bigg(\Bigg(2\Bigg(-A\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

$$2\,\mathrm{i}\,a\,A\,\operatorname{EllipticPi}\Bigg[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[$$

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

$$2\,a\,B\,\operatorname{EllipticPi}\Bigg[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[$$

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

$$2\,\mathrm{i}\,a\,A\,\operatorname{EllipticPi}\Bigg[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[$$

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

$$2\,a\,B\,\operatorname{EllipticPi}\Bigg[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+A\,b\,\operatorname{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,a\,B\,\operatorname{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\Bigg[$$

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

$$\frac{1}{2}(c+d x)\Bigg]\Bigg)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

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

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

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

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

$$\left.\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\right)\right)+$$

$$\left(\left(-A\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+A\,b\,\text{EllipticPi}\Bigg[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-2\,a\,B\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

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

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

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

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

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

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(-A\,b\,\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+$$

$$(A\,b-2\,a\,B)\ \text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+2\,\mathrm{i}\,a\,A\,\text{EllipticPi}\Bigg[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,i\,a\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+A\,b\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)$$

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

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

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

$$\left(a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)\right)-$$

$$\left(\left(-A\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,i\,a\,A\,\text{EllipticPi}\left[\right.$$

$$-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,i\,a\,A\,\text{EllipticPi}\left[\right.$$

$$\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+A\,b\,\text{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

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

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

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

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

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

$$\Bigg(\Bigg(-A\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+A\,b\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

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

$$\left.\left.\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(b-\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{2\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2}\right)\right)\Bigg/$$

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\left(-A\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(A\,b-2\,a\,B\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathbb{i}\,a\,A\,\text{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-2\,\mathbb{i}\,a\,A\,\text{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+A\,b\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\right)$$

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\Bigg(\Bigg(-A\,b\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+A\,b\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

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

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.\right.$$

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(-A\,b\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$(A\,b-2\,a\,B)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,\mathrm{i}\,a\,A\,\text{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+2\,a\,B\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+2\,a\,B\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+A\,b\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-2\,a\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

$$\Bigg(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}-$$

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

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg/\left(a\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

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

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

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

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

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

$$\left(-\left(\left(A\,b\,\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\,\mathrm{Sec}\left[\right.\right.\right.\right.\right.\right.$$

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

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

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\sqrt{\left(1-\right.}$$

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

$$\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\,\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)+$$

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

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

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

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

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

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

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

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

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

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

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

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

$$\left((A b-2 a B)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right) \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right) \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\right)\Big/$$

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

$$\left(a \sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\left(-2 b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right) \sqrt{a+b \operatorname{Tan}[c+d x]}\right)$$

Problem 349: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]^3\,(A+B \operatorname{Tan}[c+d x])}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\, dx$$

Optimal (type 3, 224 leaves, 13 steps):

$$\frac{\left(8 a^2 A-3 A b^2+4 a b B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{5/2} d}-$$
$$\frac{(A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}\; d}-\frac{(A+i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}\; d}+$$
$$\frac{(3 A b-4 a B) \text{Cot}[c+d x] \sqrt{a+b \text{Tan}[c+d x]}}{4 a^2 d}-\frac{A \text{Cot}[c+d x]^2 \sqrt{a+b \text{Tan}[c+d x]}}{2 a d}$$

Result (type 4, 19 139 leaves):

$$\Bigg((B+A \text{Cot}[c+d x])$$
$$\Bigg(b (3 A b-4 a B) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$
$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8 a^2 A-3 A b^2+4 a b B\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$
$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 A$$
$$\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$
$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8 i a^2 B \text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$
$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 a^2 A$$
$$\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$
$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8 i a^2 B \text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$
$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+8 a^2 A \text{EllipticPi}\Bigg[$$

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

$$3\,A\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}\text{, ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big]\text{,}$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+4\,a\,b\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}\text{,}$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big]\text{, }\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\Bigg(-\frac{A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{3\,A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{8\,a^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,a\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{A\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)$$

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

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

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

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

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

$$\Bigg(2\,a^2\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}$$

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

$$\left(-\left(\left(\left(b\,(3\,A\,b-4\,a\,B)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.\right.\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$8\,a^2\,A\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8\,i\,a^2\,B\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$8\,a^2\,A\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$8\,i\,a^2\,B\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8\,a^2\,A\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-$$

$$3\,A\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$4\,a\,b\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\Big(-1+\text{Tan}\Big[$$

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

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

$$\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

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

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

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(\Bigg(b\,(3\,A\,b-4\,a\,B)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a^2\,B\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a^2\,B\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

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

$$8\,a^2\,A\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+4\,a\,b\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

$$\left(4\,a^2\,\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right.$$

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\Bigg(\Bigg(b\,(3\,A\,b-4\,a\,B)\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\,\mathrm{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\mathrm{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a^2\,B\,\mathrm{EllipticPi}\Big[-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\Big],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\mathrm{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a^2\,B\,\mathrm{EllipticPi}\Big[\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

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

$$8 a^2 A\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - 3 A b^2\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 4 a b B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

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

$$\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg) -$$

$$\Bigg(\Bigg(b\,(3 A b-4 a B)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + \left(8 a^2 A-3 A b^2+4 a b B\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,\mathbb{i}\,a^2\,B\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,\mathbb{i}\,a^2\,B\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-3\,A\,b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+4\,a\,b\,B\,\text{EllipticPi}\Big[$$

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

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

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

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

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

$$\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.$$

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

$$\left.\left(2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\right)\Bigg)\Big/$$

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

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left(\left(b\,(3 A b-4 a B)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8 a^2 A-3 A b^2+4 a b B\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\right[$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8 a^2 A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,\mathrm{i}\,a^2 B\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,a^2\,A\,\text{EllipticPi}\Bigg[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-8\,\mathbb{i}\,a^2\,B\,\text{EllipticPi}\Bigg[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

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

$$8\,a^2\,A\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Bigg[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-3\,A\,b^2\,\text{EllipticPi}\Bigg[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+4\,a\,b\,B\,\text{EllipticPi}\Bigg[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

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

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\left(b\left(3\,A\,b-4\,a\,B\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\right[$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a^2\,B\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\right[$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a^2\,B\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

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

$$8\,a^2\,A\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,A\,b^2\,\text{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+4\,a\,b\,B\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

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

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(\left(b\,(3\,A\,b-4\,a\,B)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\right.\right.\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,A\,\mathrm{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+8\,i\,a^2\,B\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,a^2\,A\,\mathrm{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-8\,i\,a^2\,B\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+$$

$$8\,a^2\,A\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-3\,A\,b^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + 4\,a\,b\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

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

$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\Bigg(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)\Bigg)\Bigg/$$

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

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(\Bigg(b\,(3\,A\,b-4\,a\,B)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+8\,i\,a^2\,B\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,a^2\,A\,\text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-8\,i\,a^2\,B\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},$$

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

$$8\,a^2\,A\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+4\,a\,b\,B\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)$$

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

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

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

$$\left(\frac{b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}-\right.$$

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

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

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

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

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

$$\left(\left(b\,(3\,A\,b-4\,a\,B)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\right.\right.\right.$$

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

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

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

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

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

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

$$\left(4\,a^2\,A\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

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

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

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

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

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

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

$$\left(3\,A\,b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

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

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

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

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

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

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

$$\left(2\,a\,b\,B\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

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

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

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

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

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

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

$$\left(4\,a^2\,A\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\bigg)\bigg/$$

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

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

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

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\bigg/\right.}$$

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

$$\left(4\, i\, a^2 B\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\bigg/$$

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

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

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

$$\sqrt{\left(1-\left(\left(a+\sqrt{a^2+b^2}\right)\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\bigg/\right.}$$

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

$$\left(4 a^2 A\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Bigg)\Bigg/$$

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

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

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

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

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

$$\left(4\,i\,a^2\,B\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\right.\right.$$

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

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

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

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

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

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

$$\left(\left(8\,a^2\,A-3\,A\,b^2+4\,a\,b\,B\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}-\right.\right.$$

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

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

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

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

$$\left.\sqrt{a+b \text{Tan}[c+d x]}\right) + \left(\left(B+A \text{Cot}[c+d x]\right)\right.$$

$$\left(\frac{A}{2 a}+\frac{\left(3 A b \text{Cos}[c+d x]-4 a B \text{Cos}[c+d x]\right) \text{Csc}[c+d x]}{4 a^2}-\frac{A \text{Csc}[c+d x]^2}{2 a}\right)$$

$$\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right) \text{Tan}[$$

$$c +$$

$$d$$

$$\left.x]\right)\Big/\left(d\,(A\,Cos[c+d\,x]+B\,Sin[c+d\,x])\,\sqrt{a+b\,Tan[c+d\,x]}\right)$$

Problem 350: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 264 leaves, 10 steps):

$$\frac{(A-\mathrm{i}\,B)\,ArcTanh\left[\frac{\sqrt{a+b\,Tan[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{(a-\mathrm{i}\,b)^{3/2}\,d}+\frac{(A+\mathrm{i}\,B)\,ArcTanh\left[\frac{\sqrt{a+b\,Tan[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{(a+\mathrm{i}\,b)^{3/2}\,d}+$$
$$\frac{2\,a\,(A\,b-a\,B)\,Tan[c+d\,x]^2}{b\,(a^2+b^2)\,d\,\sqrt{a+b\,Tan[c+d\,x]}}+\frac{2\,(6\,a^2\,A\,b+3\,A\,b^3-8\,a^3\,B-5\,a\,b^2\,B)\,\sqrt{a+b\,Tan[c+d\,x]}}{3\,b^3\,(a^2+b^2)\,d}-$$
$$\frac{2\,(3\,a\,A\,b-4\,a^2\,B-b^2\,B)\,Tan[c+d\,x]\,\sqrt{a+b\,Tan[c+d\,x]}}{3\,b^2\,(a^2+b^2)\,d}$$

Result (type 3, 575 leaves):

$$\left(\text{Sec}[c+d x]\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\,(A+B\,\text{Tan}[c+d x])\left(-\frac{2\left(-6 a^2 A b-3 A b^3+8 a^3 B+5 a b^2 B\right)}{3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^3}+\frac{2\left(-a^2 A b\,\text{Sin}[c+d x]+a^3 B\,\text{Sin}[c+d x]\right)}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}+\frac{2 B\,\text{Tan}[c+d x]}{3 b^2}\right)\right)\Big/\left(d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^{3/2}\right)-$$

$$\left(\sqrt{\text{Sec}[c+d x]}\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^{3/2}\,(A+B\,\text{Tan}[c+d x])\left(-\left(\left(\mathrm{i}\,(A b-a B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)-\left((a A+b B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)\right)\Big/\left((a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^{3/2}\right)$$

Problem 351: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 167 leaves, 9 steps):

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

Result (type 3, 547 leaves):

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

$$\left(\sqrt{\text{Sec}[c+d x]}\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^{3/2}\,(A+B\,\text{Tan}[c+d x])\right.$$

$$\left(-\left(\left(i\,(a A+b B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)-$$

$$\left((-A b+a B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/$$

$$\left.\left.\left(\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)\right)\Big/$$

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

Problem 352: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 141 leaves, 8 steps):

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

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

Result (type 3, 531 leaves):

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

$$\left(\sqrt{\text{Sec}[c+d x]} (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^{3/2} (A+B \text{Tan}[c+d x]) \left(-\left(\left(\mathbb{i} (A b-a B) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathbb{i} b}}\right]}{\sqrt{a-\mathbb{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathbb{i} b}}\right]}{\sqrt{a+\mathbb{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left((a A+b B) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathbb{i} b}}\right]}{\sqrt{a-\mathbb{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathbb{i} b}}\right]}{\sqrt{a+\mathbb{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right) \Big/ \left((a-\mathbb{i} b) (a+\mathbb{i} b) d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^{3/2}\right)$$

Problem 353: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 138 leaves, 8 steps):

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

Result (type 3, 537 leaves):

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

$$\left(\sqrt{\text{Sec}[c+d x]} (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^{3/2} (A+B \text{Tan}[c+d x])\right.$$
$$\left(-\left(\left(\mathrm{i} (a A+b B) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\right.\right.$$
$$\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-$$
$$\left((-A b+a B) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/$$
$$\left.\left.\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/$$
$$\left((a-\mathrm{i} b) (a+\mathrm{i} b) d (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) (a+b \text{Tan}[c+d x])^{3/2}\right)$$

Problem 354: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 171 leaves, 12 steps):

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

Result (type 4, 24 431 leaves) : Display of huge result suppressed!

Problem 355: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 219 leaves, 13 steps) :

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

Result (type 4, 27 988 leaves) : Display of huge result suppressed!

Problem 356: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 285 leaves, 14 steps) :

$$\frac{(8 a^2 A-15 A b^2+12 a b B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{7/2} d}-\frac{(A-i B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{3/2} d}-\frac{(A+i B)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{3/2} d}+\frac{b\,(7 a^2 A b+15 A b^3-4 a^3 B-12 a b^2 B)}{4 a^3\,(a^2+b^2)\,d\,\sqrt{a+b\,\text{Tan}[c+d x]}}+\frac{(5 A b-4 a B)\,\text{Cot}[c+d x]}{4 a^2 d\,\sqrt{a+b\,\text{Tan}[c+d x]}}-\frac{A\,\text{Cot}[c+d x]^2}{2 a d\,\sqrt{a+b\,\text{Tan}[c+d x]}}$$

Result (type 4, 29 982 leaves) : Display of huge result suppressed!

Problem 358: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^3\,(A+B\,\text{Tan}[c+d x])}{(a+b\,\text{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 261 leaves, 10 steps) :

$$\frac{(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{(a-\mathrm{i}\,b)^{5/2}\,d}+$$

$$\frac{(A+\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{(a+\mathrm{i}\,b)^{5/2}\,d}+\frac{2\,a\,(A\,b-a\,B)\,\mathrm{Tan}[c+d\,x]^2}{3\,b\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}-$$

$$\frac{2\,a^2\,(a^2\,A\,b+7\,A\,b^3-4\,a^3\,B-10\,a\,b^2\,B)}{3\,b^3\,(a^2+b^2)^2\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}-\frac{2\,(a\,A\,b-4\,a^2\,B-3\,b^2\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,b^3\,(a^2+b^2)\,d}$$

Result (type 3, 677 leaves):

$$\left(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\left(\frac{2\,(-2\,a^3\,A\,b-9\,a\,A\,b^3+8\,a^4\,B+18\,a^2\,b^2\,B+3\,b^4\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b^3}-\right.\right.$$

$$\frac{2\,a^3\,(-A\,b+a\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}-$$

$$(2\,(-a^3\,A\,b\,\mathrm{Sin}[c+d\,x]-9\,a\,A\,b^3\,\mathrm{Sin}[c+d\,x]+4\,a^4\,B\,\mathrm{Sin}[c+d\,x]+12\,a^2\,b^2\,B\,\mathrm{Sin}[c+d\,x]))\Big/$$

$$\left.\left(3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\right)\right)(A+B\,\mathrm{Tan}[c+d\,x])\Bigg)\Big/$$

$$\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)-$$

$$\left(\mathrm{Sec}[c+d\,x]^{3/2}\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])\right.$$

$$\left(-\left(\left(\mathrm{i}\,(2\,a\,A\,b-a^2\,B+b^2\,B)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.\right.\right.$$

$$\left.\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Bigg)-$$

$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\left(\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\mathrm{ArcTanh}\left[\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.$$

$$\left.\left.\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)\Bigg)\Big/$$

$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)$$

Problem 359: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 198 leaves, 9 steps):

$$\frac{(\text{i} A+B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\text{i} b}}\right]}{(a-\text{i} b)^{5/2} d}-\frac{(\text{i} A-B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\text{i} b}}\right]}{(a+\text{i} b)^{5/2} d}-\frac{2 a^2 (A b-a B)}{3 b^2 \left(a^2+b^2\right) d \left(a+b \text{Tan}[c+d x]\right)^{3/2}}+\frac{2 a \left(2 A b^3-a \left(a^2+3 b^2\right) B\right)}{b^2 \left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 660 leaves):

$$\left(\text{Sec}[c+d x]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3\right.$$
$$\left(-\frac{2\left(a^2 A b-6 A b^3+2 a^3 B+9 a b^2 B\right)}{3\left(a-i b\right)^2\left(a+i b\right)^2 b^2}+\frac{2 a^2\left(-A b+a B\right)}{3\left(a-i b\right)^2\left(a+i b\right)^2\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\right.$$
$$\left(2\left(2 a^2 A b \text{Sin}[c+d x]-6 A b^3 \text{Sin}[c+d x]+a^3 B \text{Sin}[c+d x]+9 a b^2 B \text{Sin}[c+d x]\right)\right)\Big/$$
$$\left.\left(3\left(a-i b\right)^2\left(a+i b\right)^2 b\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)\right)\right)\left(A+B \text{Tan}[c+d x]\right)\Bigg)\Big/$$
$$\left(d\left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right)\left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)-$$
$$\left(\text{Sec}[c+d x]^{3/2}\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{5/2}\left(A+B \text{Tan}[c+d x]\right)\right.$$
$$\left(-\left(\left(i\left(a^2 A-A b^2+2 a b B\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\right.\right.\right.$$
$$\left.\sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)-$$
$$\left(\left(-2 a A b+a^2 B-b^2 B\right)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right)\right.$$
$$\left.\left.\left.\sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/$$
$$\left(\left(a-i b\right)^2\left(a+i b\right)^2 d\left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right)\left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 360: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 188 leaves, 9 steps):

$$-\frac{\left(A-i B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\left(a-i b\right)^{5/2} d}-\frac{\left(A+i B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\left(a+i b\right)^{5/2} d}+$$
$$\frac{2 a\left(A b-a B\right)}{3 b\left(a^2+b^2\right) d\left(a+b \text{Tan}[c+d x]\right)^{3/2}}+\frac{2\left(a^2 A-A b^2+2 a b B\right)}{\left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 3, 662 leaves):

$$\left(\text{Sec}[c+d x]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(-\frac{2 \left(-4 a^2 A b+3 A b^3+a^3 B-6 a b^2 B\right)}{3 a (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 b}-\frac{2 a b (-A b+a B)}{3 (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\left(2 \left(-5 a^2 A b \text{Sin}[c+d x]+3 A b^3 \text{Sin}[c+d x]+2 a^3 B \text{Sin}[c+d x]-6 a b^2 B \text{Sin}[c+d x]\right)\right)\Big/\left(3 a (a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)\right)\right) \left(A+B \text{Tan}[c+d x]\right)\right)\Big/\left(d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)+\left(\text{Sec}[c+d x]^{3/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{5/2} \left(A+B \text{Tan}[c+d x]\right) \left(-\left(\left(\mathrm{i} \left(2 a A b-a^2 B+b^2 B\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left(\left(a^2 A-A b^2+2 a b B\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\mathrm{i} b}}\right]}{\sqrt{a-\mathrm{i} b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+\mathrm{i} b}}\right]}{\sqrt{a+\mathrm{i} b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right)\Big/\left((a-\mathrm{i} b)^2 (a+\mathrm{i} b)^2 d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 361: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 185 leaves, 9 steps):

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

Result (type 3, 640 leaves):

$$\left(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\left(\frac{2\,(-7\,a\,A\,b+4\,a^2\,B-3\,b^2\,B)}{3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{2\,b^2\,(-A\,b+a\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}-\left(2\,(-8\,a\,A\,b^2\,\text{Sin}[c+d\,x]+5\,a^2\,b\,B\,\text{Sin}[c+d\,x]-3\,b^3\,B\,\text{Sin}[c+d\,x])\right)\Big/\left(3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)\right)(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)+$$

$$\left(\text{Sec}[c+d\,x]^{3/2}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right.$$

$$\left(-\left(\left(\mathrm{i}\,(a^2\,A-A\,b^2+2\,a\,b\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.\right.\right.$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left((-2\,a\,A\,b+a^2\,B-b^2\,B)\left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-\mathrm{i}\,b}}\right]}{\sqrt{a-\mathrm{i}\,b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+\mathrm{i}\,b}}\right]}{\sqrt{a+\mathrm{i}\,b}}\right)\right.$$

$$\left.\left.\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\right)\Big/$$

$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 362: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 224 leaves, 13 steps):

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

Result (type 4, 33 211 leaves): Display of huge result suppressed!

Problem 363: Humongous result has more than 200000 leaves.

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

Optimal (type 3, 289 leaves, 14 steps):

$$\frac{\left(5\,A\,b-2\,a\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{7/2}\,d}+\frac{\left(i\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a-i\,b}}\right]}{\left(a-i\,b\right)^{5/2}\,d}-\frac{\left(i\,A-B\right)\,\text{ArcTanh}\left[\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}}{\sqrt{a+i\,b}}\right]}{\left(a+i\,b\right)^{5/2}\,d}-\frac{b\,\left(3\,a^2\,A+5\,A\,b^2-2\,a\,b\,B\right)}{3\,a^2\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}-\frac{A\,\text{Cot}[c+d\,x]}{a\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}-\frac{b\,\left(a^4\,A+10\,a^2\,A\,b^2+5\,A\,b^4-6\,a^3\,b\,B-2\,a\,b^3\,B\right)}{a^3\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type ?, 234 114 leaves): Display of huge result suppressed!

Problem 364: Humongous result has more than 200000 leaves.

$$\int \frac{\text{Cot}[c+d\,x]^3\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 364 leaves, 15 steps):

$$\frac{\left(8 a^2 A-35 A b^2+20 a b B\right) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a}}\right]}{4 a^{9/2} d}-$$
$$\frac{(A-i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{(a-i b)^{5/2} d}-\frac{(A+i B) \text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{(a+i b)^{5/2} d}+$$
$$\frac{b\left(27 a^2 A b+35 A b^3-12 a^3 B-20 a b^2 B\right)}{12 a^3\left(a^2+b^2\right) d(a+b \text{Tan}[c+d x])^{3/2}}+\frac{(7 A b-4 a B) \text{Cot}[c+d x]}{4 a^2 d(a+b \text{Tan}[c+d x])^{3/2}}-$$
$$\frac{A \text{Cot}[c+d x]^2}{2 a d(a+b \text{Tan}[c+d x])^{3/2}}+\frac{b\left(11 a^4 A b+62 a^2 A b^3+35 A b^5-4 a^5 B-40 a^3 b^2 B-20 a b^4 B\right)}{4 a^4\left(a^2+b^2\right)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type ?, 251 836 leaves) : Display of huge result suppressed!

Problem 365: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 362 leaves, 12 steps) :

$$\frac{b B \text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}-\sqrt{2} \sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2} \sqrt{a-\sqrt{a^2+b^2}} d}-\frac{b B \text{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}}+\sqrt{2} \sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2} \sqrt{a-\sqrt{a^2+b^2}} d}+$$
$$\left(b B \text{Log}\left[a+\sqrt{a^2+b^2}+b \text{Tan}[c+d x]-\sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} \sqrt{a+b \text{Tan}[c+d x]}\right]\right) \Big/$$
$$\left(2 \sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} d\right)-$$
$$\left(b B \text{Log}\left[a+\sqrt{a^2+b^2}+b \text{Tan}[c+d x]+\sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} \sqrt{a+b \text{Tan}[c+d x]}\right]\right) \Big/$$
$$\left(2 \sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} d\right)$$

Result (type 3, 88 leaves) :

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

Problem 366: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 406 leaves, 12 steps):

$$\frac{b B \operatorname{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}} - \sqrt{2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2} \sqrt{a^2+b^2} \sqrt{a-\sqrt{a^2+b^2}} \, d} - \frac{b B \operatorname{ArcTanh}\left[\frac{\sqrt{a+\sqrt{a^2+b^2}} + \sqrt{2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{\sqrt{a-\sqrt{a^2+b^2}}}\right]}{\sqrt{2} \sqrt{a^2+b^2} \sqrt{a-\sqrt{a^2+b^2}} \, d} -$$

$$\left(b B \operatorname{Log}\left[a + \sqrt{a^2+b^2} + b \operatorname{Tan}[c+d x] - \sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} \sqrt{a+b \operatorname{Tan}[c+d x]}\right]\right) \Big/$$

$$\left(2 \sqrt{2} \sqrt{a^2+b^2} \sqrt{a+\sqrt{a^2+b^2}} \, d\right) +$$

$$\left(b B \operatorname{Log}\left[a + \sqrt{a^2+b^2} + b \operatorname{Tan}[c+d x] + \sqrt{2} \sqrt{a+\sqrt{a^2+b^2}} \sqrt{a+b \operatorname{Tan}[c+d x]}\right]\right) \Big/$$

$$\left(2 \sqrt{2} \sqrt{a^2+b^2} \sqrt{a+\sqrt{a^2+b^2}} \, d\right)$$

Result (type 3, 88 leaves):

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

Problem 369: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 154 leaves, 13 steps):

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

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

Result (type 4, 17418 leaves) :

$$B\left(\left(\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\left(\frac{2 b^2}{a^2 (a-\mathbb{i} b)(a+\mathbb{i} b)}-\right.\right.\right.$$

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

$$\left(4\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\Big[$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathbb{i}\,a\,b\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

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

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,a\,b\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\right.$$

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

$$a^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\right.$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\right.$$

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

$$\text{Sec}[c+d x]^{3/2}\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^{3/2}$$

$$\left(\frac{a\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}}{2\,(a-i b)(a+i b)\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.$$

$$\frac{b^2\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}}{a\,(a-i b)(a+i b)\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+$$

$$\frac{a\,\text{Cos}[2(c+d x)]\,\text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}}{2\,(a-i b)(a+i b)\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-$$

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

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

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

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

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

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

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

$$\left(\left(4\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]-i\,a\,b\,\text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+i\,a\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

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

$$\left(-b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

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

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

$$\left.\left(-2 b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)^2\right)-$$

$$\left(2\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{i}\,a\,b\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,a\,b\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg] + b^2 \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\right[$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\Bigg) \text{Sec}\left[\frac{1}{2}\right.$$

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

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

$$\left.\sqrt{\frac{a+2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right) \Bigg/$$

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

$$\left.\left(-2 b \text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right) -$$

$$\left(2 \left(-b^2 \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right) \text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}}, \text{ArcSin}\right[$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right] - a^2 \text{EllipticPi}\Big[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] - i\, a\, b\, \text{EllipticPi}\Big[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + i\, a\, b\, \text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big] + b^2\, \text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\Big[$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Big], \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]\Bigg)\, \text{Sec}\Big[$$

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

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

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

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

$$\left.\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(2\left(-b^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\mathrm{EllipticPi}\left[\right.$$

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+i\,a\,b\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+a^2\,\mathrm{EllipticPi}\left[\right.$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],$$

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\left.\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)-$$

$$\left(2\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-\text{i}\,a\,b\,\text{EllipticPi}\left[-\frac{\text{i}\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+i\,a\,b\,\text{EllipticPi}\Big[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(2\,\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}}\,\right],\,\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i\,a\,b\,\text{EllipticPi}\left[-\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+i\,a\,b\,\text{EllipticPi}\left[\frac{i\,\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

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

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

$$\left.\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+b^2\,\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\right.\right.$$

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

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

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

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

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

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

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

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

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\Bigg(2\,\Bigg(-b^2\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\,\Big],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+$$

$$\left(a^2+b^2\right)\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-i\,a\,b\,\mathrm{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Bigg[\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]-a^2\,\mathrm{EllipticPi}\Bigg[$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+i\,a\,b\,\mathrm{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Bigg[\right.$$

$$\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+a^2\,\mathrm{EllipticPi}\Bigg[$$

$$\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],$$

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]+b^2\,\mathrm{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\Bigg[\right.$$

$$\left.\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\Bigg],\ \frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Bigg]\right)$$

$$\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

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

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

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

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

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

$$\left(2\left(-b^2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(a^2+b^2\right)\text{EllipticPi}\left[\frac{a+b+\sqrt{a^2+b^2}}{a-b-\sqrt{a^2+b^2}},\text{ArcSin}\left[\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right],\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-a^2\,\text{EllipticPi}\left[\right.$$

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]-i a b\,\text{EllipticPi}\left[-\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\right]+i a b\,\text{EllipticPi}\left[\frac{i\left(a+b+\sqrt{a^2+b^2}\right)}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.$$

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

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

$$\frac{a+\sqrt{a^2+b^2}}{a-\sqrt{a^2+b^2}}\Big]+b^2\,\text{EllipticPi}\Big[\frac{a+b+\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[$$

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

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

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

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

$$\Bigg(\left(b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.$$

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

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

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

$$\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\left(4\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(-a-b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

$$\sqrt{-\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\sqrt{\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\sqrt{\frac{a+2 b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(-\left(\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.\right.\right.$$

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

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

$$\left(2\sqrt{\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}\right.$$

$$\sqrt{1-\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}}$$

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

$$\left.\left.\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\right)+$$

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$

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

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

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

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

$$\left(b^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Bigg/$$

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

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

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

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

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Bigg/$$

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

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

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

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

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

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

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)\Bigg/$$

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

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

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

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

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

$$\left(a^2\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\left(\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)\Bigg/$$

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

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

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

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

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\Bigg) -$$

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

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg/$$

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

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

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

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

$$\left.\left(\left(a-\sqrt{a^2+b^2}\right)\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\Bigg) +$$

$$\left(\left(a^2+b^2\right)\left(\frac{\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(a+b+\sqrt{a^2+b^2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\right.\right.$$

$$\left(\left(-a+b+\sqrt{a^2+b^2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Bigg/$$

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

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

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

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

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

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

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

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

Problem 372: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 174 leaves, 9 steps):

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

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

Result (type 3, 606 leaves):

$$\left(\text{Sec}[c+d x]^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3 \left(-\frac{2 b \left(11 a^2-3 b^2\right)}{3 a (a-i b)^2 (a+i b)^2}-\frac{4 a b^3}{3 (a-i b)^2 (a+i b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\frac{2 \left(13 a^2 b^2 \text{Sin}[c+d x]-3 b^4 \text{Sin}[c+d x]\right)}{3 a (a-i b)^2 (a+i b)^2 \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right) \left(-a+b \text{Tan}[c+d x]\right)\right) \Big/ \left(d \left(a \text{Cos}[c+d x]-b \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)+$$

$$\left(\text{Sec}[c+d x]^{3/2} \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^{5/2} \left(-a+b \text{Tan}[c+d x]\right) \left(-\left(\left(i \left(a^3-3 a b^2\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)-\left(\left(-3 a^2 b+b^3\right) \left(\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a-i b}}\right]}{\sqrt{a-i b}}+\frac{\text{ArcTanh}\left[\frac{\sqrt{a+b \text{Tan}[c+d x]}}{\sqrt{a+i b}}\right]}{\sqrt{a+i b}}\right) \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right)\right)\right) \Big/ \left((a-i b)^2 (a+i b)^2 d \left(a \text{Cos}[c+d x]-b \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 373: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 45 leaves, 3 steps):

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

Result (type 3, 128 leaves):

$$-\frac{1}{\sqrt{a-i\,b}\;d}\,i\,\text{Log}\Big[\frac{1}{\sqrt{a-i\,b}}$$

$$2\left(-i\,b\,e^{2\,i\,(c+d\,x)}+a\left(1+e^{2\,i\,(c+d\,x)}\right)+\sqrt{a-i\,b}\;\left(1+e^{2\,i\,(c+d\,x)}\right)\sqrt{a-\frac{i\,b\left(-1+e^{2\,i\,(c+d\,x)}\right)}{1+e^{2\,i\,(c+d\,x)}}}\right)\Big]$$

Problem 375: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{3+\text{Tan}[x]}{\sqrt{4+3\,\text{Tan}[x]}}\,dx$$

Optimal (type 3, 30 leaves, 2 steps):

$$-\sqrt{2}\;\text{ArcTan}\Big[\frac{1-3\,\text{Tan}[x]}{\sqrt{2}\;\sqrt{4+3\,\text{Tan}[x]}}\Big]$$

Result (type 3, 69 leaves):

$$\left(\frac{1}{5}-\frac{3\,i}{5}\right)\sqrt{4-3\,i}\;\text{ArcTanh}\Big[\frac{\sqrt{4+3\,\text{Tan}[x]}}{\sqrt{4-3\,i}}\Big]+\left(\frac{1}{5}+\frac{3\,i}{5}\right)\sqrt{4+3\,i}\;\text{ArcTanh}\Big[\frac{\sqrt{4+3\,\text{Tan}[x]}}{\sqrt{4+3\,i}}\Big]$$

Problem 376: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1-3\,\text{Tan}[x]}{\sqrt{4+3\,\text{Tan}[x]}}\,dx$$

Optimal (type 3, 27 leaves, 2 steps):

$$\sqrt{2}\;\text{ArcTanh}\Big[\frac{3+\text{Tan}[x]}{\sqrt{2}\;\sqrt{4+3\,\text{Tan}[x]}}\Big]$$

Result (type 3, 65 leaves):

$$\frac{1}{5}\left((3+i)\sqrt{4-3\,i}\;\text{ArcTanh}\Big[\frac{\sqrt{4+3\,\text{Tan}[x]}}{\sqrt{4-3\,i}}\Big]+(3-i)\sqrt{4+3\,i}\;\text{ArcTanh}\Big[\frac{\sqrt{4+3\,\text{Tan}[x]}}{\sqrt{4+3\,i}}\Big]\right)$$

Problem 377: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{4-3\,\text{Tan}[a+b\,x]}{\sqrt{4+3\,\text{Tan}[a+b\,x]}}\,dx$$

Optimal (type 3, 85 leaves, 5 steps):

$$-\frac{9\,\text{ArcTan}\Big[\frac{1-3\,\text{Tan}[a+b\,x]}{\sqrt{2}\;\sqrt{4+3\,\text{Tan}[a+b\,x]}}\Big]}{5\,\sqrt{2}\;b}+\frac{13\,\text{ArcTanh}\Big[\frac{3+\text{Tan}[a+b\,x]}{\sqrt{2}\;\sqrt{4+3\,\text{Tan}[a+b\,x]}}\Big]}{5\,\sqrt{2}\;b}$$

Result (type 3, 76 leaves):

$$\frac{1}{25\,b}\left((24-7\,i)\,\sqrt{4-3\,i}\,\text{ArcTanh}\left[\frac{\sqrt{4+3\,\text{Tan}[a+b\,x]}}{\sqrt{4-3\,i}}\right]+(24+7\,i)\,\sqrt{4+3\,i}\,\text{ArcTanh}\left[\frac{\sqrt{4+3\,\text{Tan}[a+b\,x]}}{\sqrt{4+3\,i}}\right]\right)$$

Problem 398: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 325 leaves, 16 steps):

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

Result (type 3, 744 leaves):

$$\left(\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right.$$

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

$$\frac{1}{2\,b^2\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

$$\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A+B\,\text{Tan}[c+d\,x]\right)$$

$$\left(\left(2\,\left(2\,a\,A\,b-2\,a^2\,B+b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\right.\right.$$

$$\left.\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^2\right)+$$

$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)}$$

$$A\,b^2\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,\left(a+b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,\left(a+b\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$\left(a-b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\right.\right.$$

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

$$\left(1\Big/\left(2\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1-\text{Tan}[c+d\,x]^2\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)$$

$$b^2\,B\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\left(\frac{4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$

$$\sqrt{2}\,\left(2\,\left(a-b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,\left(a-b\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$\left(a+b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 403: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 325 leaves, 16 steps):

$$-\frac{\left(b\ (A-B)\ -a\ (A+B)\right)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\ \left(a^2+b^2\right)\ d}+$$

$$\frac{\left(b\ (A-B)\ -a\ (A+B)\right)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\ \left(a^2+b^2\right)\ d}+\frac{2\ b^{5/2}\ \left(A\,b-a\,B\right)\ \text{ArcTan}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{a^{5/2}\ \left(a^2+b^2\right)\ d}+$$

$$\frac{\left(a\ (A-B)\ +b\ (A+B)\right)\ \text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Tan}[c+d\,x]}\ +\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\ \left(a^2+b^2\right)\ d}-$$

$$\frac{\left(a\ (A-B)\ +b\ (A+B)\right)\ \text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Tan}[c+d\,x]}\ +\text{Tan}[c+d\,x]\right]}{2\,\sqrt{2}\ \left(a^2+b^2\right)\ d}-$$

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

Result (type 3, 773 leaves) :

$$\left(\left(\frac{2\,A}{3\,a}-\frac{2\,\left(-A\,b\,Cos[c+d\,x]+a\,B\,Cos[c+d\,x]\right)\,Csc[c+d\,x]}{a^2}-\frac{2\,A\,Csc[c+d\,x]^2}{3\,a}\right)\left(a\,Cos[c+d\,x]+b\,Sin[c+d\,x]\right)\,\sqrt{Tan[c+d\,x]}\,\left(A+B\,Tan[c+d\,x]\right)\right)\Big/$$
$$\left(d\,\left(A\,Cos[c+d\,x]+B\,Sin[c+d\,x]\right)\,\left(a+b\,Tan[c+d\,x]\right)\right)+$$
$$\frac{1}{2\,a^2\,d\,\left(A\,Cos[c+d\,x]+B\,Sin[c+d\,x]\right)\,\left(a+b\,Tan[c+d\,x]\right)}\left(a\,Cos[c+d\,x]+b\,Sin[c+d\,x]\right)\,\left(A+B\,Tan[c+d\,x]\right)$$
$$\left(\left(2\,\left(-a^2\,A+2\,A\,b^2-2\,a\,b\,B\right)\,ArcTan\left[\frac{\sqrt{b}\,\sqrt{Tan[c+d\,x]}}{\sqrt{a}}\right]\,Csc[c+d\,x]\,Sec[c+d\,x]^3\right.\right.$$
$$\left.\left(a+b\,Tan[c+d\,x]\right)\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,Cot[c+d\,x]\right)\,\left(1+Tan[c+d\,x]^2\right)^2\right)-$$
$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,Cot[c+d\,x]\right)\,\left(1+Tan[c+d\,x]^2\right)}$$
$$a^2\,B\,Csc[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,ArcTan\left[\frac{\sqrt{b}\,\sqrt{Tan[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\,ArcTan\left[1-\sqrt{2}\,\sqrt{Tan[c+d\,x]}\right]+2\,(a+b)\,ArcTan\left[1+\sqrt{2}\,\sqrt{Tan[c+d\,x]}\right]+\right.$$
$$(a-b)\,\left(Log\left[1-\sqrt{2}\,\sqrt{Tan[c+d\,x]}+Tan[c+d\,x]\right]-Log\left[1+\sqrt{2}\,\sqrt{Tan[c+d\,x]}+\right.\right.$$
$$\left.\left.\left.Tan[c+d\,x]\right]\right)\right)\right)\,Sec[c+d\,x]^2\,Sin\left[2\,(c+d\,x)\right]\,\left(a+b\,Tan[c+d\,x]\right)+$$
$$\left(1\Big/\left(2\,\left(a^2+b^2\right)\,\left(b+a\,Cot[c+d\,x]\right)\,\left(1-Tan[c+d\,x]^2\right)\,\left(1+Tan[c+d\,x]^2\right)\right)\right)$$
$$a^2\,A\,Cos\left[2\,(c+d\,x)\right]\,Csc[c+d\,x]\,\left(\frac{4\,\left(a^2-b^2\right)\,ArcTan\left[\frac{\sqrt{b}\,\sqrt{Tan[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\right.$$
$$\sqrt{2}\,\left(2\,(a-b)\,ArcTan\left[1-\sqrt{2}\,\sqrt{Tan[c+d\,x]}\right]-2\,(a-b)\,ArcTan\left[1+\sqrt{2}\,\sqrt{Tan[c+d\,x]}\right]+\right.$$
$$(a+b)\,\left(Log\left[1-\sqrt{2}\,\sqrt{Tan[c+d\,x]}+Tan[c+d\,x]\right]-Log\left[\right.\right.$$
$$\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{Tan[c+d\,x]}+Tan[c+d\,x]\right]\right)\right)\right)\,Sec[c+d\,x]^3\,\left(a+b\,Tan[c+d\,x]\right)\right)$$

Problem 404: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 436 leaves, 16 steps):

$$\frac{\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+$$

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

$$\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-$$

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

Result (type 3, 882 leaves) :

$$\left(\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(\frac{-a\,A\,b+3\,a^2\,B+2\,b^2\,B}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^2}+\frac{a\,A\,b\,\text{Sin}[c+d\,x]-a^2\,B\,\text{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\sqrt{\text{Tan}[c+d\,x]}\right.$$

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

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

$$\left(\left(2\,\left(-a^2\,A\,b-A\,b^3+3\,a^3\,B+3\,a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\right.\right.$$

$$\left.\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^2\right)+$$

$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)}\,\left(a\,A\,b^2+b^3\,B\right)\,\text{Csc}[c+d\,x]^2$$

$$\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\right.\right.$$

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

$$\left(1\Big/\left(2\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1-\text{Tan}[c+d\,x]^2\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)$$

$$\left(A\,b^3-a\,b^2\,B\right)\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\left(\frac{4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\right.$$

$$\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\right.$$

$$(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)\Big/$$

$$\left(2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^2\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)$$

Problem 405: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 391 leaves, 15 steps):

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

Result (type 3, 849 leaves):

$$\left(\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(-\frac{-A\,b+a\,B}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b}+\frac{-A\,b\,\text{Sin}[c+d\,x]+a\,B\,\text{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\bigg/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)-$$

$$\Bigg(\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)$$

$$\Bigg(\left(2\,\left(-a^2\,B-b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\bigg/$$

$$\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^2\right)+$$

$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)}$$

$$\left(-A\,b^2+a\,b\,B\right)\,\text{Csc}[c+d\,x]^2\,\Bigg(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\sqrt{2}$$

$$\Big(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+$$

$$(a-b)\,\Big(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\Big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+$$

$$\text{Tan}[c+d\,x]\Big]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,(c+d\,x)\right]\,\left(a+b\,\text{Tan}[c+d\,x]\right)-$$

$$\left(1\Big/\left(2\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1-\text{Tan}[c+d\,x]^2\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)$$

$$\left(a\,A\,b+b^2\,B\right)\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\Bigg(\frac{4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}$$

$$\Big(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+$$

$$(a+b)\,\Big(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\Big[$$

$$1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\Big]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg)\bigg/$$

$$\left(2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)$$

Problem 406: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 391 leaves, 15 steps):

$$-\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-\frac{\left(3\,a^2\,A\,b-A\,b^3-a^3\,B+3\,a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)^2 d}-\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\frac{(A\,b-a\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 750 leaves):

$$\left(\text{Sec}[c+d x] \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2 \left(\frac{-A b+a B}{a (a-\text{i} b) (a+\text{i} b)}+\frac{A b^2 \text{Sin}[c+d x]-a b B \text{Sin}[c+d x]}{a (a-\text{i} b) (a+\text{i} b) \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right) \sqrt{\text{Tan}[c+d x]} \left(A+B \text{Tan}[c+d x]\right)\right) \Big/ \left(d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^2\right)+$$

$$\left(\text{Sec}[c+d x] \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2 \left(A+B \text{Tan}[c+d x]\right) \left(\frac{1}{4 \left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1+\text{Tan}[c+d x]^2\right)} (a A+b B) \text{Csc}[c+d x]^2 \left(-8 \sqrt{a} \sqrt{b} \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2} \left(-2 (a+b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2 (a+b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a-b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^2 \text{Sin}\left[2 (c+d x)\right] \left(a+b \text{Tan}[c+d x]\right)-\left(1 \Big/ \left(2 \left(a^2+b^2\right) \left(b+a \text{Cot}[c+d x]\right) \left(1-\text{Tan}[c+d x]^2\right) \left(1+\text{Tan}[c+d x]^2\right)\right)\right) (A b-a B) \text{Cos}\left[2 (c+d x)\right] \text{Csc}[c+d x] \left(\frac{4 \left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\sqrt{2} \left(2 (a-b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2 (a-b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+(a+b) \left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^3 \left(a+b \text{Tan}[c+d x]\right)\right)\right) \Big/ \left(2 (a-\text{i} b) (a+\text{i} b) d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^2\right)$$

Problem 407: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 391 leaves, 15 steps):

$$\frac{\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+$$

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

$$\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+$$

$$\frac{b\,(A\,b-a\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 856 leaves) :

$$\left(\text{Sec}[c+d x] \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2 \left(-\frac{b \left(-A b+a B\right)}{a^2 \left(a-\mathbb{i} b\right) \left(a+\mathbb{i} b\right)}+\frac{-A b^3 \text{Sin}[c+d x]+a b^2 B \text{Sin}[c+d x]}{a^2 \left(a-\mathbb{i} b\right) \left(a+\mathbb{i} b\right) \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)}\right) \sqrt{\text{Tan}[c+d x]} \left(A+B \text{Tan}[c+d x]\right)\right) \Big/ \left(d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^2\right)+$$

$$\left(\text{Sec}[c+d x] \left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2 \left(A+B \text{Tan}[c+d x]\right) \left(\left(2 \left(a^2 A+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/ \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(-a A b+a^2 B\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 \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]+\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]}+\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) \left(a^2 A+a b B\right) \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}}+\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]+\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]}+\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)\right) \Big/ \left(2 a \left(a-\mathbb{i} b\right) \left(a+\mathbb{i} b\right) d \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \left(a+b \text{Tan}[c+d x]\right)^2\right)$$

Problem 408: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{A + B \operatorname{Tan}[c + d x]}{\operatorname{Tan}[c + d x]^{3/2} \left(a + b \operatorname{Tan}[c + d x]\right)^2} \, dx$$

Optimal (type 3, 439 leaves, 16 steps):

$$\frac{\left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{ArcTan}\left[1 - \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]}\right]}{\sqrt{2} \left(a^2 + b^2\right)^2 d} -$$
$$\frac{1}{\sqrt{2} \left(a^2 + b^2\right)^2 d} \left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{ArcTan}\left[1 + \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]}\right] -$$
$$\frac{b^{3/2} \left(7 a^2 A b + 3 A b^3 - 5 a^3 B - a b^2 B\right) \operatorname{ArcTan}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{5/2} \left(a^2 + b^2\right)^2 d} + \frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d}$$
$$\left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{Log}\left[1 - \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]} + \operatorname{Tan}[c + d x]\right] -$$
$$\frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d} \left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{Log}\left[1 + \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]} + \operatorname{Tan}[c + d x]\right] -$$
$$\frac{2 a^2 A + 3 A b^2 - a b B}{a^2 \left(a^2 + b^2\right) d \sqrt{\operatorname{Tan}[c + d x]}} + \frac{b (A b - a B)}{a \left(a^2 + b^2\right) d \sqrt{\operatorname{Tan}[c + d x]} \left(a + b \operatorname{Tan}[c + d x]\right)}$$

Result (type 3, 880 leaves):

$$\left(\text{Sec}[c+d x]\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\left(\frac{b^2\,(-A\,b+a\,B)}{a^3\,(a^2+b^2)}-\frac{2\,A\,\text{Cot}[c+d x]}{a^2}+\frac{A\,b^4\,\text{Sin}[c+d x]-a\,b^3\,B\,\text{Sin}[c+d x]}{a^3\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}\right)\sqrt{\text{Tan}[c+d x]}\,(A+B\,\text{Tan}[c+d x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^2\right)-$$

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

$$\left(\left(2\,(3\,a^2\,A\,b+3\,A\,b^3-a^3\,B-a\,b^2\,B)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\text{Csc}[c+d x]\,\text{Sec}[c+d x]^3\right.\right.$$

$$\left.(a+b\,\text{Tan}[c+d x])\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)^2\right)+$$

$$\frac{1}{4\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1+\text{Tan}[c+d x]^2)}\,(a^3\,A+a^2\,b\,B)\,\text{Csc}[c+d x]^2$$

$$\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a-b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\right.\right.$$

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

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d x])\,(1-\text{Tan}[c+d x]^2)\,(1+\text{Tan}[c+d x]^2)\right)\right)$$

$$(a^2\,A\,b-a^3\,B)\,\text{Cos}[2\,(c+d x)]\,\text{Csc}[c+d x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\right.$$

$$\left(2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]-2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a+b)\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^3\,(a+b\,\text{Tan}[c+d x])\right)\right)\Big/$$

$$\left(2\,a^2\,(a-\text{i}\,b)\,(a+\text{i}\,b)\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^2\right)$$

Problem 409: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{A + B \operatorname{Tan}[c + d x]}{\operatorname{Tan}[c + d x]^{5/2} \left(a + b \operatorname{Tan}[c + d x]\right)^2} \, dx$$

Optimal (type 3, 493 leaves, 17 steps):

$$-\frac{1}{\sqrt{2} \left(a^2 + b^2\right)^2 d} \left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{ArcTan}\left[1 - \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]}\right] +$$
$$\frac{1}{\sqrt{2} \left(a^2 + b^2\right)^2 d} \left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{ArcTan}\left[1 + \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]}\right] +$$
$$\frac{b^{5/2} \left(9 a^2 A b + 5 A b^3 - 7 a^3 B - 3 a b^2 B\right) \operatorname{ArcTan}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a}}\right]}{a^{7/2} \left(a^2 + b^2\right)^2 d} + \frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d}$$
$$\left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{Log}\left[1 - \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]} + \operatorname{Tan}[c + d x]\right] -$$
$$\frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d} \left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{Log}\left[1 + \sqrt{2} \sqrt{\operatorname{Tan}[c + d x]} + \operatorname{Tan}[c + d x]\right] -$$
$$\frac{2 a^2 A + 5 A b^2 - 3 a b B}{3 a^2 \left(a^2 + b^2\right) d \operatorname{Tan}[c + d x]^{3/2}} + \frac{4 a^2 A b + 5 A b^3 - 2 a^3 B - 3 a b^2 B}{a^3 \left(a^2 + b^2\right) d \sqrt{\operatorname{Tan}[c + d x]}} +$$
$$\frac{b (A b - a B)}{a \left(a^2 + b^2\right) d \operatorname{Tan}[c + d x]^{3/2} \left(a + b \operatorname{Tan}[c + d x]\right)}$$

Result (type 3, 956 leaves):

$$\left(\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(\frac{2\,a^4\,A+2\,a^2\,A\,b^2+3\,A\,b^4-3\,a\,b^3\,B}{3\,a^4\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}-\frac{2\,\left(-2\,A\,b\,\text{Cos}[c+d\,x]+a\,B\,\text{Cos}[c+d\,x]\right)\,\text{Csc}[c+d\,x]}{a^3}-\frac{2\,A\,\text{Csc}[c+d\,x]^2}{3\,a^2}+\frac{-A\,b^5\,\text{Sin}[c+d\,x]+a\,b^4\,B\,\text{Sin}[c+d\,x]}{a^4\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)+$$

$$\left(\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(A+B\,\text{Tan}[c+d\,x]\right)\left(\left(2\,\left(-a^4\,A+4\,a^2\,A\,b^2+5\,A\,b^4-3\,a^3\,b\,B-3\,a\,b^3\,B\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)+\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(a^3\,A\,b-a^4\,B\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(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(-a^4\,A-a^3\,b\,B\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}}+\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)\right)\right)\Big/$$

$$\left(2\,a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2\right)$$

Problem 410: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d x]^{7/2}\,(A+B\,\text{Tan}[c+d x])}{(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 600 leaves, 17 steps):

$$\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}\left(3 a^2 b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3 a b^2\,(A+B)\right)\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]-\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}\left(3 a^2 b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3 a b^2\,(A+B)\right)\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\right]+\frac{1}{4 b^{7/2}\,(a^2+b^2)^3\,d}a^{3/2}\left(3 a^4 A b+6 a^2 A b^3+35 A b^5-15 a^5 B-46 a^3 b^2 B-63 a b^4 B\right)\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]-\frac{1}{2\sqrt{2}\,(a^2+b^2)^3\,d}\left(a^3\,(A-B)-3 a b^2\,(A-B)+3 a^2 b\,(A+B)-b^3\,(A+B)\right)\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]+\frac{1}{2\sqrt{2}\,(a^2+b^2)^3\,d}\left(a^3\,(A-B)-3 a b^2\,(A-B)+3 a^2 b\,(A+B)-b^3\,(A+B)\right)\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\frac{\left(3 a^3 A b+11 a A b^3-15 a^4 B-31 a^2 b^2 B-8 b^4 B\right)\sqrt{\text{Tan}[c+d x]}}{4 b^3\,(a^2+b^2)^2\,d}+\frac{a\,(A b-a B)\,\text{Tan}[c+d x]^{5/2}}{2 b\,(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d x])^2}+\frac{a\,(a^2 A b+9 A b^3-5 a^3 B-13 a b^2 B)\,\text{Tan}[c+d x]^{3/2}}{4 b^2\,(a^2+b^2)^2\,d\,(a+b\,\text{Tan}[c+d x])}$$

Result (type 3, 1034 leaves):

$$\left(\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\left(\frac{-3 a^3 A b-13 a A b^3+15 a^4 B+33 a^2 b^2 B+8 b^4 B}{4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b^3}-\frac{a^3\,(-A b+a B)}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\left(a^3 A b\,\text{Sin}[c+d x]+13 a A b^3\,\text{Sin}[c+d x]-5 a^4 B\,\text{Sin}[c+d x]-17 a^2 b^2 B\,\text{Sin}[c+d x]\right)\Big/\left(4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right)\sqrt{\text{Tan}[c+d x]}\,(A+B\,\text{Tan}[c+d x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^3\right)-$$

$$\left(\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\,(A+B\,\text{Tan}[c+d x])\right.$$

$$\left(\left(2\left(-3 a^4 A b-7 a^2 A b^3-4 A b^5+15 a^5 B+31 a^3 b^2 B+16 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\right.\right.$$

$$\left.\text{Csc}[c+d x] \text{Sec}[c+d x]^3 (a+b \text{Tan}[c+d x])\right) \Big/ \left(\sqrt{a} \sqrt{b} (b+a \text{Cot}[c+d x])\right.$$

$$\left.\left(1+\text{Tan}[c+d x]^2\right)^2\right)+\frac{1}{4\left(a^2+b^2\right)(b+a \text{Cot}[c+d x])\left(1+\text{Tan}[c+d x]^2\right)}$$

$$\left(8 a A b^4-4 a^2 b^3 B+4 b^5 B\right) \text{Csc}[c+d x]^2\left(-8 \sqrt{a} \sqrt{b} \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2(a+b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+2(a+b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a-b)\left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\right.\right.$$

$$\left.\left.\left.\left.\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^2 \text{Sin}[2(c+d x)](a+b \text{Tan}[c+d x])-$$

$$\left(1 \Big/\left(2\left(a^2+b^2\right)(b+a \text{Cot}[c+d x])\left(1-\text{Tan}[c+d x]^2\right)\left(1+\text{Tan}[c+d x]^2\right)\right)\right)$$

$$\left(-4 a^2 A b^3+4 A b^5-8 a b^4 B\right) \text{Cos}[2(c+d x)]$$

$$\text{Csc}[c+d x]\left(\frac{4\left(a^2-b^2\right) \text{ArcTan}\left[\frac{\sqrt{b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]}{\sqrt{a} \sqrt{b}}+\sqrt{2}\right.$$

$$\left(2(a-b) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]-2(a-b) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}\right]+\right.$$

$$(a+b)\left(\text{Log}\left[1-\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[\right.\right.$$

$$\left.\left.\left.\left.\left.1+\sqrt{2} \sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right) \text{Sec}[c+d x]^3(a+b \text{Tan}[c+d x])\right)\right) \Big/$$

$$\left(8(a-i b)^2(a+i b)^2 b^3 d(A \text{Cos}[c+d x]+B \text{Sin}[c+d x])(a+b \text{Tan}[c+d x])^3\right)$$

Problem 411: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Tan}[c+d x]^{5/2}(A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^3} \, dx$$

Optimal (type 3, 534 leaves, 16 steps):

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\frac{1}{4\,b^{5/2}\,\left(a^2+b^2\right)^3 d}\sqrt{a}\,\left(a^4\,A\,b+18\,a^2\,A\,b^3-15\,A\,b^5+3\,a^5\,B+6\,a^3\,b^2\,B+35\,a\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\frac{a\,(A\,b-a\,B)\,\text{Tan}[c+d\,x]^{3/2}}{2\,b\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}-\frac{a\,\left(a^2\,A\,b-7\,A\,b^3+3\,a^3\,B+11\,a\,b^2\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{4\,b^2\,\left(a^2+b^2\right)^2 d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 1007 leaves):

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\left(-\frac{a^2\,A\,b-9\,A\,b^3+3\,a^3\,B+13\,a\,b^2\,B}{4\,(a-i\,b)^2\,(a+i\,b)^2\,b^2}+\frac{a^2\,(-A\,b+a\,B)}{2\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+\left(3\,a^2\,A\,b\,\text{Sin}[c+d\,x]-9\,A\,b^3\,\text{Sin}[c+d\,x]+a^3\,B\,\text{Sin}[c+d\,x]+13\,a\,b^2\,B\,\text{Sin}[c+d\,x]\right)\Big/\left(4\,(a-i\,b)^2\,(a+i\,b)^2\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right)\right)\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right.$$

$$\left(\left(2\,\left(a^3\,A\,b+a\,A\,b^3+3\,a^4\,B+7\,a^2\,b^2\,B+4\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\,\text{Csc}[c+d\,x]\,\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^2\right)+\frac{1}{4\,\left(a^2+b^2\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)}\left(-4\,a^2\,A\,b^2+4\,A\,b^4-8\,a\,b^3\,B\right)\right.$$

$$\text{Csc}[c+d x]^2 \left(-8\sqrt{a}\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\left(-2(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]+2(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]+(a-b)\left(\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]\right)\right)\right)\text{Sec}[c+d x]^2\,\text{Sin}\left[2(c+d x)\right](a+b\,\text{Tan}[c+d x])-$$

$$\left(1\Big/\left(2\left(a^2+b^2\right)(b+a\,\text{Cot}[c+d x])\left(1-\text{Tan}[c+d x]^2\right)\left(1+\text{Tan}[c+d x]^2\right)\right)\right)$$

$$\left(-8 a A b^3+4 a^2 b^2 B-4 b^4 B\right)\text{Cos}\left[2(c+d x)\right]$$

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

$$\left(8(a-i b)^2(a+i b)^2 b^2 d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])(a+b\,\text{Tan}[c+d x])^3\right)$$

Problem 412: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 533 leaves, 16 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right)$$
$$\text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]+\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}$$
$$\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right)\text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]+$$
$$\left(\left(3 a^4 A b-26 a^2 A b^3+3 A b^5+a^5 B+18 a^3 b^2 B-15 a b^4 B\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\right)\Big/$$
$$\left(4\sqrt{a}\, b^{3/2}\left(a^2+b^2\right)^3 d\right)+\frac{1}{2\sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right)$$
$$\text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\frac{1}{2\sqrt{2}\left(a^2+b^2\right)^3 d}$$
$$\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right)\text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]+$$
$$\frac{a (A b-a B)\sqrt{\text{Tan}[c+d x]}}{2 b\left(a^2+b^2\right) d\,(a+b\,\text{Tan}[c+d x])^2}+\frac{\left(3 a^2 A b-5 A b^3+a^3 B+9 a b^2 B\right)\sqrt{\text{Tan}[c+d x]}}{4 b\left(a^2+b^2\right)^2 d\,(a+b\,\text{Tan}[c+d x])}$$

Result (type 3, 997 leaves):

$$\Bigg(\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3$$
$$\left(-\frac{-5 a^2 A b+5 A b^3+a^3 B-9 a b^2 B}{4 a (a-i b)^2 (a+i b)^2 b}-\frac{a b (-A b+a B)}{2 (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$\left(-7 a^2 A b\,\text{Sin}[c+d x]+5 A b^3\,\text{Sin}[c+d x]+3 a^3 B\,\text{Sin}[c+d x]-9 a b^2 B\,\text{Sin}[c+d x]\right)\Big/$$
$$\left.\left(4 a (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right)\sqrt{\text{Tan}[c+d x]}$$
$$(A+B\,\text{Tan}[c+d x])\Bigg)\Big/\left(d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,(a+b\,\text{Tan}[c+d x])^3\right)+$$
$$\Bigg(\text{Sec}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\,(A+B\,\text{Tan}[c+d x])$$
$$\left(\left(2\left(-a^2 A b-A b^3+a^3 B+a b^2 B\right)\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\text{Csc}[c+d x]\,\text{Sec}[c+d x]^3\right.\right.$$
$$\left.(a+b\,\text{Tan}[c+d x])\right)\Big/\left(\sqrt{a}\sqrt{b}\,(b+a\,\text{Cot}[c+d x])\left(1+\text{Tan}[c+d x]^2\right)^2\right)+$$
$$\frac{1}{4\left(a^2+b^2\right)(b+a\,\text{Cot}[c+d x])\left(1+\text{Tan}[c+d x]^2\right)}\left(8 a A b^2-4 a^2 b B+4 b^3 B\right)$$
$$\text{Csc}[c+d x]^2\left(-8\sqrt{a}\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,(c+d\,x)]\,(a+b\,\text{Tan}[c+d\,x])-$$

$$\left(1\Big/\left(2\,(a^2+b^2)\,(b+a\,\text{Cot}[c+d\,x])\,(1-\text{Tan}[c+d\,x]^2)\,(1+\text{Tan}[c+d\,x]^2)\right)\right)$$

$$\left(-4\,a^2\,A\,b+4\,A\,b^3-8\,a\,b^2\,B\right)\,\text{Cos}[2\,(c+d\,x)]$$

$$\text{Csc}[c+d\,x]\left(\frac{4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\right.$$

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

$$\left(8\,(a-\text{i}\,b)^2\,(a+\text{i}\,b)^2\,b\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^3\right)$$

Problem 413: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\sqrt{\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 531 leaves, 16 steps):

$$-\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-$$

$$\left(\left(15\,a^4\,A\,b-18\,a^2\,A\,b^3-A\,b^5-3\,a^5\,B+26\,a^3\,b^2\,B-3\,a\,b^4\,B\right)\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]\right)\Big/\left(4\,a^{3/2}\,\sqrt{b}\,(a^2+b^2)^3\,d\right)-\frac{1}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)$$

$$\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\frac{1}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]-$$

$$\frac{(A\,b-a\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a^2+b^2)\,d\,(a+b\,\text{Tan}[c+d\,x])^2}-\frac{\left(7\,a^2\,A\,b-A\,b^3-3\,a^3\,B+5\,a\,b^2\,B\right)\sqrt{\text{Tan}[c+d\,x]}}{4\,a\,(a^2+b^2)^2\,d\,(a+b\,\text{Tan}[c+d\,x])}$$

Result (type 3, 998 leaves):

$$\Bigg(\text{Sec}[c+d x]^2\, (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3 \left(\frac{-9 a^2 A b+A b^3+5 a^3 B-5 a b^2 B}{4 a^2 (a-i b)^2 (a+i b)^2}+\frac{b^2 (-A b+a B)}{2 (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$

$$\left.(11 a^2 A b^2 \text{Sin}[c+d x]-A b^4 \text{Sin}[c+d x]-7 a^3 b B\,\text{Sin}[c+d x]+5 a b^3 B\,\text{Sin}[c+d x]) \Big/ \left(4 a^2 (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right) \sqrt{\text{Tan}[c+d x]}$$

$$(A+B\,\text{Tan}[c+d x])\Bigg) \Big/ \left(d\, (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\, (a+b\,\text{Tan}[c+d x])^3\right)+$$

$$\Bigg(\text{Sec}[c+d x]^2\, (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\, (A+B\,\text{Tan}[c+d x])$$

$$\Bigg(\Bigg(2\, (a^2 A b+A b^3-a^3 B-a b^2 B)\, \text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\Big]\, \text{Csc}[c+d x]\, \text{Sec}[c+d x]^3$$

$$(a+b\,\text{Tan}[c+d x])\Bigg) \Big/ \left(\sqrt{a}\,\sqrt{b}\, (b+a\,\text{Cot}[c+d x])\, (1+\text{Tan}[c+d x]^2)^2\right)+$$

$$\frac{1}{4\, (a^2+b^2)\, (b+a\,\text{Cot}[c+d x])\, (1+\text{Tan}[c+d x]^2)}\, (4 a^3 A-4 a A b^2+8 a^2 b B)$$

$$\text{Csc}[c+d x]^2 \Bigg(-8\sqrt{a}\,\sqrt{b}\, \text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\Big]+\sqrt{2}$$

$$\Big(-2\, (a+b)\, \text{ArcTan}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\big]+2\, (a+b)\, \text{ArcTan}\big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\big]+$$

$$(a-b)\, \Big(\text{Log}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\big]-\text{Log}\big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+$$

$$\text{Tan}[c+d x]\big]\Big)\Big)\Bigg)\, \text{Sec}[c+d x]^2\, \text{Sin}\big[2\, (c+d x)\big]\, (a+b\,\text{Tan}[c+d x])-$$

$$\left(1 \Big/ \left(2\, (a^2+b^2)\, (b+a\,\text{Cot}[c+d x])\, (1-\text{Tan}[c+d x]^2)\, (1+\text{Tan}[c+d x]^2)\right)\right)$$

$$(8 a^2 A b-4 a^3 B+4 a b^2 B)\, \text{Cos}\big[2\, (c+d x)\big]\, \text{Csc}[c+d x] \Bigg(\frac{4\, (a^2-b^2)\, \text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\Big]}{\sqrt{a}\,\sqrt{b}}+$$

$$\sqrt{2}\, \Big(2\, (a-b)\, \text{ArcTan}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\big]-2\, (a-b)\, \text{ArcTan}\big[1+$$

$$\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}\big]+(a+b)\, \Big(\text{Log}\big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\big]-\text{Log}\big[$$

$$1+\sqrt{2}\,\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\big]\Big)\Big)\Bigg)\, \text{Sec}[c+d x]^3\, (a+b\,\text{Tan}[c+d x])\Bigg)\Bigg) \Big/$$

$$\left(8 a\, (a-i b)^2\, (a+i b)^2\, d\, (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\, (a+b\,\text{Tan}[c+d x])^3\right)$$

Problem 414: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 534 leaves, 16 steps):

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]-\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\right]+\frac{1}{4\,a^{5/2}\,\left(a^2+b^2\right)^3 d}\sqrt{b}\,\left(35\,a^4\,A\,b+6\,a^2\,A\,b^3+3\,A\,b^5-15\,a^5\,B+18\,a^3\,b^2\,B+a\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\right]-\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\right]+\frac{b\,(A\,b-a\,B)\,\sqrt{\text{Tan}[c+d\,x]}}{2\,a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^2}+\frac{b\,\left(11\,a^2\,A\,b+3\,A\,b^3-7\,a^3\,B+a\,b^2\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{4\,a^2\,\left(a^2+b^2\right)^2 d\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$

Result (type 3, 1018 leaves):

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\,\left(-\frac{b\,\left(-13\,a^2\,A\,b-3\,A\,b^3+9\,a^3\,B-a\,b^2\,B\right)}{4\,a^3\,(a-i\,b)^2\,(a+i\,b)^2}-\frac{b^3\,(-A\,b+a\,B)}{2\,a\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+\left(-15\,a^2\,A\,b^3\,\text{Sin}[c+d\,x]-3\,A\,b^5\,\text{Sin}[c+d\,x]+11\,a^3\,b^2\,B\,\text{Sin}[c+d\,x]-a\,b^4\,B\,\text{Sin}[c+d\,x]\right)\Big/\left(4\,a^3\,(a-i\,b)^2\,(a+i\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right)\right)\,\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3\right)+$$

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right.$$

$$\Bigg(\bigg(2\,(4\,a^4\,A+7\,a^2\,A\,b^2+3\,A\,b^4+a^3\,b\,B+a\,b^3\,B)\,\mathrm{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\Big]\,\mathrm{Csc}[c+d\,x]$$

$$\mathrm{Sec}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])\bigg)\Big/\left(\sqrt{a}\,\sqrt{b}\,(b+a\,\mathrm{Cot}[c+d\,x])\,(1+\mathrm{Tan}[c+d\,x]^2)^2\right)+$$

$$\frac{1}{4\,(a^2+b^2)\,(b+a\,\mathrm{Cot}[c+d\,x])\,(1+\mathrm{Tan}[c+d\,x]^2)}\,(-8\,a^3\,A\,b+4\,a^4\,B-4\,a^2\,b^2\,B)$$

$$\mathrm{Csc}[c+d\,x]^2\,\bigg(-8\,\sqrt{a}\,\sqrt{b}\,\mathrm{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\Big]+\sqrt{2}$$

$$\Big(-2\,(a+b)\,\mathrm{ArcTan}\big[1-\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}\big]+2\,(a+b)\,\mathrm{ArcTan}\big[1+\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}\big]+$$

$$(a-b)\,\Big(\mathrm{Log}\big[1-\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\mathrm{Tan}[c+d\,x]\big]-\mathrm{Log}\big[1+\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}+$$

$$\mathrm{Tan}[c+d\,x]\big]\Big)\Big)\bigg)\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Sin}[2\,(c+d\,x)]\,(a+b\,\mathrm{Tan}[c+d\,x])-$$

$$\Big(1\Big/\big(2\,(a^2+b^2)\,(b+a\,\mathrm{Cot}[c+d\,x])\,(1-\mathrm{Tan}[c+d\,x]^2)\,(1+\mathrm{Tan}[c+d\,x]^2)\big)\Big)$$

$$(4\,a^4\,A-4\,a^2\,A\,b^2+8\,a^3\,b\,B)\,\mathrm{Cos}[2\,(c+d\,x)]$$

$$\mathrm{Csc}[c+d\,x]\,\left(\frac{4\,(a^2-b^2)\,\mathrm{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a}}\Big]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\right.$$

$$\Big(2\,(a-b)\,\mathrm{ArcTan}\big[1-\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}\big]-2\,(a-b)\,\mathrm{ArcTan}\big[1+\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}\big]+$$

$$(a+b)\,\Big(\mathrm{Log}\big[1-\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\mathrm{Tan}[c+d\,x]\big]-\mathrm{Log}\big[$$

$$\left.1+\sqrt{2}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\mathrm{Tan}[c+d\,x]\big]\Big)\Big)\right)\,\mathrm{Sec}[c+d\,x]^3\,(a+b\,\mathrm{Tan}[c+d\,x])\Bigg)\Bigg)\Big/$$

$$\left(8\,a^2\,(a-i\,b)^2\,(a+i\,b)^2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^3\right)$$

Problem 415: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{A+B\,\mathrm{Tan}[c+d\,x]}{\mathrm{Tan}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 601 leaves, 17 steps):

$$\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}\right]-\frac{1}{4 a^{7/2}\left(a^2+b^2\right)^3 d} b^{3/2}\left(63 a^4 A b+46 a^2 A b^3+15 A b^5-35 a^5 B-6 a^3 b^2 B-3 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]+\frac{1}{2\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{Log}\left[1-\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\frac{1}{2\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{Log}\left[1+\sqrt{2}\sqrt{\text{Tan}[c+d x]}+\text{Tan}[c+d x]\right]-\frac{8 a^4 A+31 a^2 A b^2+15 A b^4-11 a^3 b B-3 a b^3 B}{4 a^3\left(a^2+b^2\right)^2 d\sqrt{\text{Tan}[c+d x]}}+\frac{b (A b-a B)}{2 a\left(a^2+b^2\right) d\sqrt{\text{Tan}[c+d x]}\left(a+b \text{Tan}[c+d x]\right)^2}+\frac{b\left(13 a^2 A b+5 A b^3-9 a^3 B-a b^2 B\right)}{4 a^2\left(a^2+b^2\right)^2 d\sqrt{\text{Tan}[c+d x]}\left(a+b \text{Tan}[c+d x]\right)}$$

Result (type 3, 1043 leaves):

$$\left(\text{Sec}[c+d x]^2\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3\left(\frac{b^2\left(-17 a^2 A b-7 A b^3+13 a^3 B+3 a b^2 B\right)}{4 a^4 (a-i b)^2 (a+i b)^2}-\frac{2 A \text{Cot}[c+d x]}{a^3}+\frac{b^4 (-A b+a B)}{2 a^2 (a-i b)^2 (a+i b)^2\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^2}+\left(19 a^2 A b^4 \text{Sin}[c+d x]+7 A b^6 \text{Sin}[c+d x]-15 a^3 b^3 B \text{Sin}[c+d x]-3 a b^5 B \text{Sin}[c+d x]\right)\Big/\left(4 a^4 (a-i b)^2 (a+i b)^2\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)\right)\right)\sqrt{\text{Tan}[c+d x]}\left(A+B \text{Tan}[c+d x]\right)\right)\Big/\left(d\left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right)\left(a+b \text{Tan}[c+d x]\right)^3\right)-$$

$$\left(\text{Sec}[c+d x]^2\left(a \text{Cos}[c+d x]+b \text{Sin}[c+d x]\right)^3\left(A+B \text{Tan}[c+d x]\right)\right.$$

$$\left(\left(2\left(16 a^4 A b+31 a^2 A b^3+15 A b^5-4 a^5 B-7 a^3 b^2 B-3 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{b}\sqrt{\text{Tan}[c+d x]}}{\sqrt{a}}\right]\right.\right.$$

$$\left.\text{Csc}[c+d x] \text{Sec}[c+d x]^3\left(a+b \text{Tan}[c+d x]\right)\right)\Big/\left(\sqrt{a}\sqrt{b}\left(b+a \text{Cot}[c+d x]\right)\right)$$

$$\left(1+\text{Tan}[c+d\,x]^2\right)^2\Big)+\frac{1}{4\left(a^2+b^2\right)\left(b+a\,\text{Cot}[c+d\,x]\right)\left(1+\text{Tan}[c+d\,x]^2\right)}$$
$$\left(4\,a^5\,A-4\,a^3\,A\,b^2+8\,a^4\,b\,B\right)\text{Csc}[c+d\,x]^2\Bigg(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\Big]+\sqrt{2}$$
$$\Big(-2\,(a+b)\,\text{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\Big]+2\,(a+b)\,\text{ArcTan}\Big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\Big]+$$
$$(a-b)\Big(\text{Log}\Big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\Big]-\text{Log}\Big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+$$
$$\text{Tan}[c+d\,x]\Big]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\big[2\,(c+d\,x)\big]\,\left(a+b\,\text{Tan}[c+d\,x]\right)-$$
$$\Big(1\Big/\Big(2\left(a^2+b^2\right)\left(b+a\,\text{Cot}[c+d\,x]\right)\left(1-\text{Tan}[c+d\,x]^2\right)\left(1+\text{Tan}[c+d\,x]^2\right)\Big)\Big)$$
$$\left(8\,a^4\,A\,b-4\,a^5\,B+4\,a^3\,b^2\,B\right)\text{Cos}\big[2\,(c+d\,x)\big]$$
$$\text{Csc}[c+d\,x]\left(\frac{4\left(a^2-b^2\right)\text{ArcTan}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a}}\Big]}{\sqrt{a}\,\sqrt{b}}+\sqrt{2}\right.$$
$$\Big(2\,(a-b)\,\text{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\Big]-2\,(a-b)\,\text{ArcTan}\Big[1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}\Big]+$$
$$(a+b)\Big(\text{Log}\Big[1-\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\Big]-\text{Log}\Big[$$
$$\left.1+\sqrt{2}\,\sqrt{\text{Tan}[c+d\,x]}+\text{Tan}[c+d\,x]\Big]\Big)\Big)\right)\text{Sec}[c+d\,x]^3\,\left(a+b\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg)\Bigg/$$
$$\left(8\,a^3\,(a-i\,b)^2\,(a+i\,b)^2\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^3\right)$$

Problem 427: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 264 leaves, 14 steps):

$$\frac{\sqrt{i\,a-b}\,(i\,A-B)\,\text{ArcTan}\Big[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{d}+$$
$$\frac{\left(4\,a\,A\,b-a^2\,B-8\,b^2\,B\right)\text{ArcTanh}\Big[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{4\,b^{3/2}\,d}+\frac{\sqrt{i\,a+b}\,(i\,A+B)\,\text{ArcTanh}\Big[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{d}+$$
$$\frac{(4\,A\,b-a\,B)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,b\,d}+\frac{B\,\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{2\,b\,d}$$

Result (type 4, 85 695 leaves): Display of huge result suppressed!

Problem 428: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \sqrt{\text{Tan}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}\ (A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 201 leaves, 13 steps):

$$\frac{\sqrt{i\,a-b}\ (A+i\,B)\ \text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{(2\,A\,b+a\,B)\ \text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{b}\ d}-\frac{\sqrt{i\,a+b}\ (A-i\,B)\ \text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{B\sqrt{\text{Tan}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 69 837 leaves): Display of huge result suppressed!

Problem 429: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}\ (A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 169 leaves, 12 steps):

$$-\frac{\sqrt{i\,a-b}\ (i\,A-B)\ \text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{2\sqrt{b}\ B\,\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{\sqrt{i\,a+b}\ (i\,A+B)\ \text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}$$

Result (type 4, 12 343 leaves):

$$\left(4\,a\,\text{Cos}[c+d\,x]\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left.\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\, A\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathrm{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathrm{i}\, a\, A\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\, \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$\left.b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{A\,\text{Csc}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}}+\right.$$

$$\left.B\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)$$

$$\left.\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\;\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\;d\,\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)$$

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

$$2\,a\left(A\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\;\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\;\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\mathbb{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(\mathbb{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

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

$$\Bigg(a^2\Bigg(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+$$

$$\Bigg(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\Bigg(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

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

$$\Bigg(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right) - \left(a\,B\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\mathrm{i}\,b\,B\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) - \left(\mathrm{i}\,a\,A\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(A\,b\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\mathrm{i}\, b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right) \Big/$$

$$\left(\sqrt{a^2+b^2}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(2\,a\,\Bigg(A\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\;\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]+$$

$$\Bigg(b\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\Bigg(A\,b\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

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

$$\Bigg(a\,A\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\Bigg(a\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},$$

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

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(\mathrm{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\Bigg(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,a\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\mathbb{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(\mathbb{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}[c+d\,x]^{3/2}$$

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

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

$$2\,a\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(\text{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\text{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(\text{i}\, a\, A\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

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

$$\left(\text{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

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

$$\left(\text{i}\, a+b+\sqrt{a^2+b^2}\right) + \left(\text{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

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

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,a\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

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

$$\left(-\left(\left(a\,A\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.\right.$$

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

$$\left(a\,b\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)$$

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

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

$$\left(a\,A\,b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-i\,a+b+\sqrt{a^2+b^2}\right)$$

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

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

$$\left(a^2\,A\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)$$

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

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

$$\left(a^2\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-i\,a+b+\sqrt{a^2+b^2}\right)$$

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

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

$$\left(\mathrm{i}\,a\,b\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

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

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

$$\left(\mathrm{i}\,a^2\,A\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

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

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

$$\left(a\,A\,b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

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

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

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

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

$$\left(a b B \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(a+b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \left(1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\Bigg) \Bigg) \sqrt{\operatorname{Tan}[c+d x]}$$

Problem 430: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 154 leaves, 8 steps):

$$-\frac{\sqrt{i\,a-b}\,\left(A+i\,B\right)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{\sqrt{i\,a+b}\,\left(A-i\,B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4869 leaves):

$$-\frac{2\,A\,\mathrm{Cos}[c+d\,x]\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)}{d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\sqrt{\mathrm{Tan}[c+d\,x]}}+$$

$$\Bigg(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,\left(A\,b+a\,B\right)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)\,\left(A+i\,B\right)$$

$$\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)$$

$$\left(A-i\,B\right)\,\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\Bigg(\frac{A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{A\,b\,\mathrm{Cos}\left[2\,(c+d\,x)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a\,B\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

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

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,(A-\text{i}\,B)$$

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

$$\text{Sec}[c+d x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,(A b+a B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)\,(A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)\,(A-i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\right)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right.$$

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

$$\left(i\,(A b+a B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left((a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\,(A\,b+a\,B)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\ (A+i\,B)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\ (A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\,(A\,b+a\,B)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a + i\, b\right)\left(A + i\, B\right) \text{EllipticPi}\left[-\frac{i\left(b + \sqrt{a^2 + b^2}\right)}{a},\right.$$

$$\left. i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] + \left(a - i\, b\right)\left(A - i\, B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b + \sqrt{a^2 + b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c + d\, x]}\; \text{Sin}\left[\frac{1}{2}\left(c + d\, x\right)\right] \text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; \sqrt{a\, \text{Cos}[c + d\, x] + b\, \text{Sin}[c + d\, x]}\; \sqrt{\text{Tan}[c + d\, x]}}$$

$$2\, \text{Cos}\left[\frac{1}{2}\left(c + d\, x\right)\right]^2 \sqrt{\frac{b + \sqrt{a^2 + b^2} + a\, \text{Cot}\left[\frac{1}{2}\left(c + d\, x\right)\right]}{b + \sqrt{a^2 + b^2}}}\; \sqrt{1 + \frac{a\, \text{Cot}\left[\frac{1}{2}\left(c + d\, x\right)\right]}{b - \sqrt{a^2 + b^2}}}$$

$$\left(i\left(A\, b + a\, B\right) \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] -\right.$$

$$\left(a + i\, b\right)\left(A + i\, B\right) \text{EllipticPi}\left[-\frac{i\left(b + \sqrt{a^2 + b^2}\right)}{a},\right.$$

$$\left. i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] + \left(a - i\, b\right)\left(A - i\, B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b + \sqrt{a^2 + b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right)$$

$$\text{Sec}[c + d\, x]^{3/2}\, \text{Sin}[c + d\, x]\; \text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]^{3/2} +$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A\,b+a\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\text{i}\,(a+\text{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\text{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\text{i}\,(a-\text{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\text{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\right)\right)\sqrt{\text{Tan}[c+d\,x]}\right)$$

Problem 431: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 199 leaves, 9 steps):

$$\frac{\sqrt{\mathrm{i}\,a-b}\,\left(\mathrm{i}\,A-B\right)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{\sqrt{\mathrm{i}\,a+b}\,\left(\mathrm{i}\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,A\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d\,\text{Tan}[c+d\,x]^{3/2}}-\frac{2\,\left(A\,b+3\,a\,B\right)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4932 leaves):

$$-\left(\left(4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(-\frac{a\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a\,A\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\left(b\,B\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\right.$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(a\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left(2\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right)$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\mathrm{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,i\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A-b\,B)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\,(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)\,(A-i\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+\left(i\,a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a A-b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)(A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)(A-i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\sqrt{\text{Tan}[c+d x]}\right)+\left(i\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left((a A-b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)(A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-i b)(A-i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\right.$$

$$\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,i\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a\,A-b\,B)\ \text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+i\,b)\ (A+i\,B)\ \text{EllipticPi}\Big[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-i\,b)\ (A-i\,B)\ \text{EllipticPi}\Big[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ +$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,A-b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\,\left(A-\mathrm{i}\,B\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}\left[c+d\,x\right]}\,\left(b\,\mathrm{Cos}\left[c+d\,x\right]-a\,\mathrm{Sin}\left[c+d\,x\right]\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}\,\sqrt{\mathrm{Tan}\left[c+d\,x\right]}}$$

$$4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,A-b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\,\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A-b\,B)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\ (A+i\,B)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)\ (A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\operatorname{Sec}[c+d x]}\left(-\left(\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a A-b B)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)+\right.$$

$$\left(\mathrm{i}(a+\mathrm{i} b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i} B)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}(a-\mathrm{i} b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i} B)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left.\sqrt{\operatorname{Tan}[c+d x]}\right)\right)+$$

$$\left(\operatorname{Cos}[c+d x]\left(\frac{2A}{3}-\frac{2\left(A b\operatorname{Cos}[c+d x]+3 a B\operatorname{Cos}[c+d x]\right)\operatorname{Csc}[c+d x]}{3a}-\frac{2}{3}A\operatorname{Csc}[c+d x]^2\right)\sqrt{\operatorname{Tan}[c+d x]}\sqrt{a+b\operatorname{Tan}[c+d x]}\left(A+B\operatorname{Tan}[c+d x]\right)\right)\Big/\left(d\left(A\operatorname{Cos}[c+d x]+B\operatorname{Sin}[c+d x]\right)\right)$$

Problem 432: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\operatorname{Tan}[c+d x]}\,\left(A+B\operatorname{Tan}[c+d x]\right)}{\operatorname{Tan}[c+d x]^{7/2}}\,dx$$

Optimal (type 3, 250 leaves, 10 steps):

$$\frac{\sqrt{\mathrm{i}\,a-b}\,\left(A+\mathrm{i}\,B\right)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{\sqrt{\mathrm{i}\,a+b}\,\left(A-\mathrm{i}\,B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}-\frac{2\,\left(A\,b+5\,a\,B\right)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,a\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+\frac{2\,\left(15\,a^2\,A+2\,A\,b^2-5\,a\,b\,B\right)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,a^2\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4972 leaves):

$$-\left(\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(\mathrm{i}\,\left(A\,b+a\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\,\left(A-\mathrm{i}\,B\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(-\frac{A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left(A\,b\,\mathrm{Cos}\left[2\,(c+d\,x)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-\left(a\,B\,\mathrm{Cos}\left[2\,(c+d\,x)\right]\,\mathrm{Csc}[c+d\,x]\right.$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+$$

$$\left(a\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\left(b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Bigg)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\Bigg)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

$$\Bigg(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,(A b+a B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\sqrt{\text{Tan}[c+d x]}\right)+\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,(A b+a B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right) -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,(A\,b+a\,B)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\;+$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\text{i ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\text{i}\,b)\,(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\ \text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,(A\,b+a\,B)\ \text{EllipticF}\Big[\text{i ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a+\text{i}\,b)\,(A+\text{i}\,B)\ \text{EllipticPi}\Big[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\text{i ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\text{i}\,b)\,(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\ \text{Sin}[c+d\,x]\ \text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A\,b+a\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(i\,(a-i\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\,\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)+$$

$$\left(\text{Cos}[c+d\,x]\,\left(\frac{2\,(A\,b+5\,a\,B)}{15\,a}+\frac{1}{15\,a^2}2\,\left(18\,a^2\,A\,\text{Cos}[c+d\,x]+2\,A\,b^2\,\text{Cos}[c+d\,x]-5\,a\,b\,B\,\text{Cos}[c+d\,x]\right)\right.\right.$$

$$\text{Csc}[c+d\,x]-\frac{2\,(A\,b+5\,a\,B)\,\text{Csc}[c+d\,x]^2}{15\,a}-\frac{2}{5}\,A\,\text{Cot}[c+d\,x]$$

$$\left.\text{Csc}[c+d\,x]^2\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left.\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 433: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)}{\mathrm{Tan}[c+d\,x]^{9/2}}\,dx$$

Optimal (type 3, 314 leaves, 11 steps):

$$-\frac{\sqrt{i\,a-b}\,\left(i\,A-B\right)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{\sqrt{i\,a+b}\,\left(i\,A+B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{7\,d\,\mathrm{Tan}[c+d\,x]^{7/2}}-\frac{2\,\left(A\,b+7\,a\,B\right)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{35\,a\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}+\frac{2\,\left(35\,a^2\,A+4\,A\,b^2-7\,a\,b\,B\right)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a^2\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+\frac{2\,\left(35\,a^2\,A\,b-8\,A\,b^3+105\,a^3\,B+14\,a\,b^2\,B\right)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a^3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 5051 leaves):

$$\left(4\,i\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a\,A-b\,B\right)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)\,\left(A+i\,B\right)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)$$

$$\left.\left(A-i\,B\right)\,\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(\frac{a\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-\right.$$

$$\frac{b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a\,A\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b\,B\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{a\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,A-b\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+i\,b\right)\,\left(A+i\,B\right)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)\,\left(A-i\,B\right)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-\left(i\,a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-\left(i\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\sqrt{\text{Tan}\left[c+d\,x\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\sqrt{\text{Tan}\left[c+d\,x\right]}}$$

$$3\,\mathrm{i}\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,A-b\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]\right)^{3/2}\sqrt{\operatorname{Tan}[c+d\,x]}}$$

$$2\,\mathrm{i}\operatorname{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A-b\,B)\operatorname{EllipticF}\left[\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\right.$$

$$\operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\operatorname{Sec}[c+d\,x]}\,\left(b\operatorname{Cos}[c+d\,x]-a\operatorname{Sin}[c+d\,x]\right)\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}}\,4\,\mathrm{i}\operatorname{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a A - b B)\ \text{EllipticF}\Big[i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+i b)\ (A+i B)$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a-i b)\ (A-i B)\ \text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}\Big[\frac{1}{2}(c+d x)\Big]\ \text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}\ 2\,i\ \text{Cos}\Big[\frac{1}{2}(c+d x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a A - b B)\ \text{EllipticF}\Big[i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+i b)\ (A+i B)$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a-i b)\ (A-i B)\ \text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\sqrt{\text{Tan}[c+d x]}} 4 \mathrm{i} \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(a A-b B) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\right/\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}(a+\mathrm{i} b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(A+\mathrm{i} B) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i} \text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}(a-\mathrm{i} b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(A-\mathrm{i} B) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i} \text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d x]}\Bigg)+$$

$$\left(\text{Cos}[c+d x]\left(-\frac{2\left(50 a^2 A+4 A b^2-7 a b B\right)}{105 a^2}+\frac{1}{105 a^3}4\left(19 a^2 A b \text{Cos}[c+d x]-\right.\right.\right.$$
$$\left.4 A b^3 \text{Cos}[c+d x]+63 a^3 B \text{Cos}[c+d x]+7 a b^2 B \text{Cos}[c+d x]\right)$$

$$\text{Csc}[c+d\,x]+\frac{2\left(65\,a^2\,A+4\,A\,b^2-7\,a\,b\,B\right)\text{Csc}[c+d\,x]^2}{105\,a^2}-\frac{2\left(A\,b\,\text{Cos}[c+d\,x]+7\,a\,B\,\text{Cos}[c+d\,x]\right)\text{Csc}[c+d\,x]^3}{35\,a}-\frac{2}{7}\,A\,\text{Csc}[c+d\,x]^4\Bigg)$$

$$\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg/\left(d\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 434: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 3, 323 leaves, 15 steps):

$$\frac{(i\,a-b)^{3/2}\,(A+i\,B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{\left(6\,a^2\,A\,b-16\,A\,b^3-a^3\,B-24\,a\,b^2\,B\right)\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{8\,b^{3/2}\,d}+\frac{(i\,a+b)^{3/2}\,(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{\left(6\,a\,A\,b-a^2\,B-8\,b^2\,B\right)\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{8\,b\,d}+\frac{(6\,A\,b-a\,B)\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{12\,b\,d}+\frac{B\,\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}{3\,b\,d}$$

Result (type 4, 122 510 leaves): Display of huge result suppressed!

Problem 435: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 3, 268 leaves, 14 steps):

$$\frac{(a+i b)^2 (i A-B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{\sqrt{i a-b} d}+\frac{\left(12 a A b+3 a^2 B-8 b^2 B\right) \operatorname{ArcTanh}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{4 \sqrt{b} d}+$$
$$\frac{(i a+b)^{3/2} (i A+B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}+$$
$$\frac{(4 A b+5 a B) \sqrt{\operatorname{Tan}[c+d x]} \sqrt{a+b \operatorname{Tan}[c+d x]}}{4 d}+\frac{b B \operatorname{Tan}[c+d x]^{3/2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{2 d}$$

Result (type 4, 106 626 leaves): Display of huge result suppressed!

Problem 436: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \operatorname{Tan}[c+d x])^{3/2} (A+B \operatorname{Tan}[c+d x])}{\sqrt{\operatorname{Tan}[c+d x]}} \, dx$$

Optimal (type 3, 204 leaves, 13 steps):

$$-\frac{(i a-b)^{3/2} (A+i B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}+\frac{\sqrt{b} (2 A b+3 a B) \operatorname{ArcTanh}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}-$$
$$\frac{(i a+b)^{3/2} (A-i B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}+\frac{b B \sqrt{\operatorname{Tan}[c+d x]} \sqrt{a+b \operatorname{Tan}[c+d x]}}{d}$$

Result (type 4, 96 488 leaves): Display of huge result suppressed!

Problem 437: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \operatorname{Tan}[c+d x])^{3/2} (A+B \operatorname{Tan}[c+d x])}{\operatorname{Tan}[c+d x]^{3/2}} \, dx$$

Optimal (type 3, 209 leaves, 13 steps):

$$-\frac{(a+i b)^2 (i A-B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{\sqrt{i a-b} d}+\frac{2 b^{3/2} B \operatorname{ArcTanh}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}-$$
$$\frac{(i a+b)^{3/2} (i A+B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}-\frac{2 a A \sqrt{a+b \operatorname{Tan}[c+d x]}}{d \sqrt{\operatorname{Tan}[c+d x]}}$$

Result (type 4, 86 483 leaves): Display of huge result suppressed!

Problem 438: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 196 leaves, 9 steps):

$$\frac{(i\,a-b)^{3/2}\,(A+i\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{(i\,a+b)^{3/2}\,(A-i\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}-\frac{2\,(4\,A\,b+3\,a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 5254 leaves):

$$-\Bigg(\Bigg(4\,i\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a^2\,A-A\,b^2-2\,a\,b\,B)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)^2\,(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\,(A-i\,B)$$

$$\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg(-\frac{a^2\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{A\,b^2\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a\,b\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left(a^2\,A\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+$$

$$\left(A\,b^2\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+\left(a\,b\,B\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-$$

$$\left(a\,A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-\left(a^2\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+$$

$$\left(b^2\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Bigg)\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Bigg]\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right)$$

$$\Bigg(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]^{3/2}}$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}+\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2\,A-A\,b^2-2\,a\,b\,B)\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a+\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}$$

$$\left.\left.\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\Big(b-\sqrt{a^2+b^2}\Big)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+\left(\mathbb{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$\left(a + i b\right)^2 \left(A + i B\right) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a - i b\right)^2 \left(A - i B\right) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]} \sqrt{\text{Tan}[c+d x]}\right) -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}}$$

$$3 i \sqrt{\frac{b+\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$\left(a + i b\right)^2 \left(A + i B\right) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a-\mathrm{i}\,b\right)^2 \left(A-\mathrm{i}\,B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\,\text{ArcSinh}\Big[$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ +$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a-\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+i b\right)^2 \left(A+i B\right) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a-i b\right)^2 \left(A-i B\right) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d x\right)\right] \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}$$

$$2\, i\, \text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a+i b\right)^2 \left(A+i B\right) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a-i b\right)^2 \left(A-i B\right)\right.$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\,\Bigg(-\Bigg(\Bigg(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a^2 A-A b^2-2 a b B\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg/$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\Bigg)+$$

$$\left(i\,(a+i b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/$$

$$\Bigg(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)+\left(i\,(a-i b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/$$

$$\Bigg(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\sqrt{\text{Tan}[c+d x]}\Bigg)\Bigg)+$$

$$\Bigg(\text{Cos}[c+d x]^2\left(\frac{2 a A}{3}-\frac{2}{3}\left(4 A b\,\text{Cos}[c+d x]+3 a B\,\text{Cos}[c+d x]\right)\text{Csc}[c+d x]-\right.$$

$$\frac{2}{3} a A \operatorname{Csc}[c+d x]^2\Big)\sqrt{\operatorname{Tan}[c+d x]}\,(a+b \operatorname{Tan}[c+d x])^{3/2}\,(A+B \operatorname{Tan}[c+d x])\Big)\Big/\Big(d\,(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])\,(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])\Big)$$

Problem 439: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \operatorname{Tan}[c+d x])^{3/2}\,(A+B \operatorname{Tan}[c+d x])}{\operatorname{Tan}[c+d x]^{7/2}}\,dx$$

Optimal (type 3, 259 leaves, 10 steps):

$$\frac{(a+i b)^2\,(i A-B) \operatorname{ArcTan}\Big[\frac{\sqrt{i a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\Big]}{\sqrt{i a-b}\,d}+\frac{(i a+b)^{3/2}\,(i A+B) \operatorname{ArcTanh}\Big[\frac{\sqrt{i a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\Big]}{d}-\frac{2 a A \sqrt{a+b \operatorname{Tan}[c+d x]}}{5 d \operatorname{Tan}[c+d x]^{5/2}}-\frac{2\,(6 A b+5 a B)\,\sqrt{a+b \operatorname{Tan}[c+d x]}}{15 d \operatorname{Tan}[c+d x]^{3/2}}+\frac{2\,(15 a^2 A-3 A b^2-20 a b B)\,\sqrt{a+b \operatorname{Tan}[c+d x]}}{15 a d \sqrt{\operatorname{Tan}[c+d x]}}$$

Result (type 4, 5302 leaves):

$$-\Bigg(\Bigg(4 \operatorname{Cos}\Big[\frac{1}{2}(c+d x)\Big]^2 \operatorname{Cos}[c+d x]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\big[\frac{1}{2}(c+d x)\big]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a \operatorname{Cot}\big[\frac{1}{2}(c+d x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,(2 a A b+a^2 B-b^2 B) \operatorname{EllipticF}\Big[i \operatorname{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\big[\frac{1}{2}(c+d x)\big]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+i b)^2\,(A+i B) \operatorname{EllipticPi}\Big[-\frac{i\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\left(-\frac{a\,A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a\,A\,b\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\left(a^2\,B\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\right.$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(b^2\,B\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(a^2\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(a\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \mathrm{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + \left(a - \mathrm{i}\, b\right)^2 \left(A - \mathrm{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c+d\,x]}\Bigg) \Bigg/$$

$$\Bigg(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]} \sqrt{\text{Tan}[c+d\,x]}\Bigg) + \Bigg(a \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right) \text{EllipticF}\Big[\mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$\left(a+\mathrm{i}\, b\right)^2 \left(A+\mathrm{i}\, B\right) \text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + \left(a - \mathrm{i}\, b\right)^2 \left(A - \mathrm{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c+d\,x]}\Bigg) \Bigg/$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]} \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]} \sqrt{\text{Tan}[c+d\,x]}\Bigg) -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ +$$

$$\left(1\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)^2 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\,(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x])\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}[c+d x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\left(2 a A b+a^2 B-b^2 B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)^2 (A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i b)^2 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}[c+d x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^2\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\right.$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\right|\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left|\sqrt{\mathrm{Tan}[c+d x]}\right)\right)+$$

$$\left(\mathrm{Cos}[c+d x]^2\left(\frac{2}{15}(6 A b+5 a B)+\frac{1}{15 a}2\left(18 a^2 A\,\mathrm{Cos}[c+d x]-3 A b^2\,\mathrm{Cos}[c+d x]-\right.\right.\right.$$
$$\left.20 a b B\,\mathrm{Cos}[c+d x]\right)\mathrm{Csc}[c+d x]-$$
$$\left.\frac{2}{15}(6 A b+5 a B)\,\mathrm{Csc}[c+d x]^2-\frac{2}{5}a A\,\mathrm{Cot}[c+d x]\,\mathrm{Csc}[c+d x]^2\right)$$
$$\sqrt{\mathrm{Tan}[c+d x]}\,(a+b\,\mathrm{Tan}[c+d x])^{3/2}$$
$$\left.(A+B\,\mathrm{Tan}[c+d x])\right)\Big/$$
$$\left(d\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\right)$$

Problem 440: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Tan}[c+d x])^{3/2}\,(A+B\,\mathrm{Tan}[c+d x])}{\mathrm{Tan}[c+d x]^{9/2}}\,dx$$

Optimal (type 3, 311 leaves, 11 steps):

$$-\frac{(\mathrm{i}\,a-b)^{3/2}(A+\mathrm{i}\,B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{(\mathrm{i}\,a+b)^{3/2}(A-\mathrm{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,A\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{7\,d\,\text{Tan}[c+d\,x]^{7/2}}-\frac{2\,(8\,A\,b+7\,a\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{35\,d\,\text{Tan}[c+d\,x]^{5/2}}+\frac{2\,(35\,a^2\,A-3\,A\,b^2-42\,a\,b\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{105\,a\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{2\,(140\,a^2\,A\,b+6\,A\,b^3+105\,a^3\,B-21\,a\,b^2\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{105\,a^2\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 5373 leaves) :

$$\Bigg(4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Cos}[c+d\,x]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a^2\,A-A\,b^2-2\,a\,b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg(\frac{a^2\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^2 A \operatorname{Cos}\left[2\left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\frac{A b^2 \operatorname{Cos}\left[2\left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\frac{a b B \operatorname{Cos}\left[2\left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\frac{a A b \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2\left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\frac{a^2 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2\left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\left.\frac{b^2 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2\left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}\right)$$

$$\left.\left(a+b \operatorname{Tan}[c+d x]\right)^{3/2} \left(A+B \operatorname{Tan}[c+d x]\right)\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2 \left(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \operatorname{Tan}[c+d x]^{3/2}}\right.$$

$$2 \, i \operatorname{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A-A b^2-2 a b B\right) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+i b\right)^2 \left(A+i B\right) \operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-\left(\mathrm{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2\,A-A\,b^2-2\,a\,b\,B)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-\left(\mathrm{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$(a + i b)^2 (A + i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a - i b)^2 (A - i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x] + b\,\text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\text{Tan}[c+d x]}\right) +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a\,\text{Cos}[c+d x] + b\,\text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}}$$

$$3 i \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$(a + i b)^2 (A + i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\mathrm{i}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\ -$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\mathrm{i}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a + i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a - i b)^2 (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]} \text{Sin}\left[\frac{1}{2}(c+d x)\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x] + b \text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}}$$

$$2 i \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2} + a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a + i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a - i b)^2 (A - i B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a^2 A-A\,b^2-2\,a\,b\,B\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\left(\text{Cos}[c+d\,x]^2\left(-\frac{2\left(50\,a^2 A-3\,A\,b^2-42\,a\,b\,B\right)}{105\,a}+\frac{1}{105\,a^2}2\left(164\,a^2 A\,b\,\text{Cos}[c+d\,x]+\right.\right.\right.$$

$$6\,A\,b^3\,\mathrm{Cos}[c+d\,x]+126\,a^3\,B\,\mathrm{Cos}[c+d\,x]-21\,a\,b^2\,B\,\mathrm{Cos}[c+d\,x]\Big)$$
$$\mathrm{Csc}[c+d\,x]+\frac{2\left(65\,a^2\,A-3\,A\,b^2-42\,a\,b\,B\right)\mathrm{Csc}[c+d\,x]^2}{105\,a}-$$
$$\frac{2}{35}\left(8\,A\,b\,\mathrm{Cos}[c+d\,x]+7\,a\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]^3-$$
$$\frac{2}{7}\,a\,A\,\mathrm{Csc}[c+d\,x]^4\Bigg)$$
$$\sqrt{\mathrm{Tan}[c+d\,x]}\;\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}$$
$$\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Bigg)\Big/$$
$$\Big(d\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)$$
$$\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Big)$$

Problem 441: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\mathrm{Tan}[c+d\,x]\right)}{\mathrm{Tan}[c+d\,x]^{11/2}}\,dx$$

Optimal (type 3, 382 leaves, 12 steps):

$$\frac{(i\,a-b)^{3/2}\,(i\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-$$
$$\frac{(i\,a+b)^{3/2}\,(i\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{9\,d\,\mathrm{Tan}[c+d\,x]^{9/2}}-$$
$$\frac{2\,(10\,A\,b+9\,a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{63\,d\,\mathrm{Tan}[c+d\,x]^{7/2}}+\frac{2\left(21\,a^2\,A-A\,b^2-24\,a\,b\,B\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}+$$
$$\frac{2\left(126\,a^2\,A\,b+4\,A\,b^3+105\,a^3\,B-9\,a\,b^2\,B\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{315\,a^2\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}-$$
$$\left(2\left(315\,a^4\,A-63\,a^2\,A\,b^2+8\,A\,b^4-420\,a^3\,b\,B-18\,a\,b^3\,B\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(315\,a^3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 4, 5445 leaves):

$$\Bigg(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(\frac{a\,A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a\,A\,b\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,B\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b^2\,B\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{a\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\,(2\,a\,A\,b+a^2\,B-b^2\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^2\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,(2\,a\,A\,b+a^2\,B-b^2\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,(2\,a\,A\,b+a^2\,B-b^2\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+i\,b\right)^2\left(A+i\,B\right)\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^2\left(A-i\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right/$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.\right.$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\right)\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)}$$

$$\text{Cos}[c+d\,x]^2$$

$$\left(-\frac{2\,\left(176\,a^2\,A\,b+4\,A\,b^3+150\,a^3\,B-9\,a\,b^2\,B\right)}{315\,a^2}-\right.$$

$$\frac{1}{315\,a^3}$$

$$2\,\left(413\,a^4\,A\,\text{Cos}[c+d\,x]-66\,a^2\,A\,b^2\,\text{Cos}[c+d\,x]+8\,A\,b^4\,\text{Cos}[c+d\,x]-\right.$$

$$\left.492\,a^3\,b\,B\,\text{Cos}[c+d\,x]-18\,a\,b^3\,B\,\text{Cos}[c+d\,x]\right)\,\text{Csc}[c+d\,x]+$$

$$\frac{2\,\left(226\,a^2\,A\,b+4\,A\,b^3+195\,a^3\,B-9\,a\,b^2\,B\right)\,\text{Csc}[c+d\,x]^2}{315\,a^2}+$$

$$\frac{1}{315\,a}$$

$$2\,\left(133\,a^2\,A\,\text{Cos}[c+d\,x]-3\,A\,b^2\,\text{Cos}[c+d\,x]-72\,a\,b\,B\,\text{Cos}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3-$$

$$\frac{2}{63}\,\left(10\,A\,b+9\,a\,B\right)\,\text{Csc}[c+d\,x]^4-$$

$$\frac{2}{9} a A \operatorname{Cot}[c+d x] \operatorname{Csc}[c+d x]^4\Big)$$
$$\sqrt{\operatorname{Tan}[c+d x]}\ (a+b \operatorname{Tan}[c+d x])^{3/2}$$
$$(A+$$
$$B \operatorname{Tan}[c+d x])$$

Problem 442: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \operatorname{Tan}[c+d x]^{3/2} (a+b \operatorname{Tan}[c+d x])^{5/2} (A+B \operatorname{Tan}[c+d x])\, dx$$

Optimal (type 3, 397 leaves, 16 steps):

$$-\frac{(i a-b)^{5/2} (i A-B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}+\frac{1}{64 b^{3/2} d}$$
$$\left(40 a^3 A b-320 a A b^3-5 a^4 B-240 a^2 b^2 B+128 b^4 B\right) \operatorname{ArcTanh}\left[\frac{\sqrt{b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]-$$
$$\frac{(i a+b)^{5/2} (i A+B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{d}+\frac{1}{64 b d}$$
$$\left(40 a^2 A b-64 A b^3-5 a^3 B-112 a b^2 B\right) \sqrt{\operatorname{Tan}[c+d x]} \sqrt{a+b \operatorname{Tan}[c+d x]}+$$
$$\frac{\left(40 a A b-5 a^2 B-48 b^2 B\right) \sqrt{\operatorname{Tan}[c+d x]} (a+b \operatorname{Tan}[c+d x])^{3/2}}{96 b d}+$$
$$\frac{(8 A b-a B) \sqrt{\operatorname{Tan}[c+d x]} (a+b \operatorname{Tan}[c+d x])^{5/2}}{24 b d}+\frac{B \sqrt{\operatorname{Tan}[c+d x]} (a+b \operatorname{Tan}[c+d x])^{7/2}}{4 b d}$$

Result (type 4, 159 271 leaves): Display of huge result suppressed!

Problem 443: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\operatorname{Tan}[c+d x]}\ (a+b \operatorname{Tan}[c+d x])^{5/2} (A+B \operatorname{Tan}[c+d x])\, dx$$

Optimal (type 3, 316 leaves, 15 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,(A+\mathrm{i}\,B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{\left(30\,a^2\,A\,b-16\,A\,b^3+5\,a^3\,B-40\,a\,b^2\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{8\,\sqrt{b}\,d}+$$

$$\frac{(\mathrm{i}\,a+b)^{5/2}\,(A-\mathrm{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{\left(14\,a\,A\,b+5\,a^2\,B-8\,b^2\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{8\,d}+$$

$$\frac{(2\,A\,b+3\,a\,B)\,\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{4\,d}+\frac{b\,B\,\text{Tan}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}$$

Result (type 4, 143 376 leaves) : Display of huge result suppressed!

Problem 444: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 260 leaves, 14 steps) :

$$\frac{(\mathrm{i}\,a-b)^{5/2}\,(\mathrm{i}\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{\sqrt{b}\,\left(20\,a\,A\,b+15\,a^2\,B-8\,b^2\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{4\,d}+$$

$$\frac{(\mathrm{i}\,a+b)^{5/2}\,(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{b\,(4\,A\,b+7\,a\,B)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,d}+\frac{b\,B\,\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{2\,d}$$

Result (type 4, 133 239 leaves) : Display of huge result suppressed!

Problem 445: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 241 leaves, 14 steps):

$$\frac{(\mathrm{i}\,a-b)^{5/2}\,(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{b^{3/2}\,(2\,A\,b+5\,a\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{(\mathrm{i}\,a+b)^{5/2}\,(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{b\,(2\,a\,A+b\,B)\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}-\frac{2\,a\,A\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 123 092 leaves): Display of huge result suppressed!

Problem 446: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 240 leaves, 14 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+\frac{2\,b^{5/2}\,B\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{(\mathrm{i}\,a+b)^{5/2}\,(\mathrm{i}\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,(2\,A\,b+a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d\,\sqrt{\mathrm{Tan}[c+d\,x]}}-\frac{2\,a\,A\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{3\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}$$

Result (type 4, 113 126 leaves): Display of huge result suppressed!

Problem 447: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Tan}[c+d\,x]^{7/2}}\,dx$$

Optimal (type 3, 247 leaves, 10 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}+$$

$$\frac{(\mathrm{i}\,a+b)^{5/2}\,(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{2\,a\,(8\,A\,b+5\,a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+$$

$$\frac{2\,(15\,a^2\,A-23\,A\,b^2-35\,a\,b\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}-\frac{2\,a\,A\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{5\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}$$

Result (type 4, 5580 leaves):

$$-\left(\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]^3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(\mathrm{i}\,(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(-\frac{3\,a^2\,A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+\right.$$

$$\frac{A\,b^3\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a^3\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{3\,a\,b^2\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left(3\,a^2\,A\,b\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(A\,b^3\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\left(a^3\,B\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(3\,a\,b^2\,B\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(a^3\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(3\,a\,A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(3\,a^2\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(b^3\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left(2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^3\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}$$

$$\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\left(i\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^3\left(A+i\,B\right)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-i\,b\right)^3\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\left(i\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-i\,b)^3\,(A-i\,B)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ +$$

$$\left(1\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}\ +a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(i\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^3\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(i\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)^3\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\Bigg(\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\Bigg(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-\left(\mathrm{i}\,(a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)+$$

$$\left(\mathrm{Cos}[c+d\,x]^3\left(\frac{2}{15}a\,(11\,A\,b+5\,a\,B)+\frac{2}{15}\left(18\,a^2\,A\,\mathrm{Cos}[c+d\,x]-23\,A\,b^2\,\mathrm{Cos}[c+d\,x]-\right.\right.\right.$$

$$\left.35\,a\,b\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]-$$

$$\left.\frac{2}{15}a\,(11\,A\,b+5\,a\,B)\,\mathrm{Csc}[c+d\,x]^2-\frac{2}{5}a^2\,A\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2\right)$$

$$\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}$$

$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

Problem 448: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Tan}[c+d\,x]^{9/2}}\,dx$$

Optimal (type 3, 309 leaves, 11 steps):

$$\frac{(\mathrm{i}\,a-b)^{5/2}\,(\mathrm{i}\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}+\frac{(\mathrm{i}\,a+b)^{5/2}\,(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-$$

$$\frac{2\,a\,(10\,A\,b+7\,a\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{35\,d\,\text{Tan}[c+d\,x]^{5/2}}+\frac{2\,(35\,a^2\,A-45\,A\,b^2-77\,a\,b\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{105\,d\,\text{Tan}[c+d\,x]^{3/2}}+$$

$$\frac{2\,(245\,a^2\,A\,b-15\,A\,b^3+105\,a^3\,B-161\,a\,b^2\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{105\,a\,d\,\sqrt{\text{Tan}[c+d\,x]}}-\frac{2\,a\,A\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{7\,d\,\text{Tan}[c+d\,x]^{7/2}}$$

Result (type 4, 5641 leaves):

$$\left(4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\left((a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B)\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3$$

$$\left.(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\left(\frac{a^3\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{3\,a\,A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{3\,a^2\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^3 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\frac{a^3 A \operatorname{Cos}\left[2 \left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\left(3 a A b^2 \operatorname{Cos}\left[2 \left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)-$$

$$\left(3 a^2 b B \operatorname{Cos}\left[2 \left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)+$$

$$\frac{b^3 B \operatorname{Cos}\left[2 \left(c+d x\right)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\left(3 a^2 A b \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)-$$

$$\frac{A b^3 \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\frac{a^3 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\left(3 a b^2 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/$$

$$\left.\left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)\right) \left(a+b \operatorname{Tan}[c+d x]\right)^{5/2} \left(A+B \operatorname{Tan}[c+d x]\right)\Bigg) \Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3 \left(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \operatorname{Tan}[c+d x]^{3/2}}\right.$$

$$2 \mathrm{i} \operatorname{Cos}\left[\frac{1}{2} \left(c+d x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2} \left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} \left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^3 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^3 (A-i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{5/2} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-\left(i a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^3 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^3 (A-i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\left.\sqrt{\text{Sec}[c+d\,x]}\right)\right/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\mathrm{i}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^3\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^3\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\right/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3 A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\right.$$

$$\left.\left.\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}$$

$$\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3 A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^3\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\Bigg(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^3\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\Bigg(-\Bigg(\left(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg)+$$

$$\left(i\,(a+i\,b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\Bigg(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\frac{1}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$

$$\text{Cos}[c+d\,x]^3\Bigg(-\frac{2}{105}\left(50\,a^2\,A-45\,A\,b^2-77\,a\,b\,B\right)+\frac{1}{105\,a}$$

$$2\left(290\,a^2\,A\,b\,\text{Cos}[c+d\,x]-15\,A\,b^3\,\text{Cos}[c+d\,x]+126\,a^3\,B\,\text{Cos}[c+d\,x]-161\,a\,b^2\,B\,\text{Cos}[c+d\,x]\right)$$

$$\text{Csc}[c+d\,x]+\frac{2}{105}\left(65\,a^2\,A-45\,A\,b^2-77\,a\,b\,B\right)\text{Csc}[c+d\,x]^2-$$

$$\frac{2}{35}\left(15\,a\,A\,b\,\text{Cos}[c+d\,x]+7\,a^2\,B\,\text{Cos}[c+d\,x]\right)\text{Csc}[c+d\,x]^3-\frac{2}{7}\,a^2\,A\,\text{Csc}[c+d\,x]^4\Bigg)$$

$$\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 449: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{11/2}}\,dx$$

Optimal (type 3, 378 leaves, 12 steps):

$$\frac{(\mathrm{i}\, a-b)^{5/2}\,(A+\mathrm{i}\, B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-\frac{(\mathrm{i}\, a+b)^{5/2}\,(A-\mathrm{i}\, B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{d}-$$
$$\frac{2\, a\,(4 A b+3 a B)\,\sqrt{a+b\,\text{Tan}[c+d x]}}{21\, d\,\text{Tan}[c+d x]^{7/2}}+\frac{2\,(21 a^2 A-25 A b^2-45 a b B)\,\sqrt{a+b\,\text{Tan}[c+d x]}}{105\, d\,\text{Tan}[c+d x]^{5/2}}+$$
$$\frac{2\,(231 a^2 A b-5 A b^3+105 a^3 B-135 a b^2 B)\,\sqrt{a+b\,\text{Tan}[c+d x]}}{315\, a\, d\,\text{Tan}[c+d x]^{3/2}}-$$
$$\left(2\,(315 a^4 A-483 a^2 A b^2-10 A b^4-735 a^3 b B+45 a b^3 B)\,\sqrt{a+b\,\text{Tan}[c+d x]}\right)\Big/$$
$$\left(315 a^2 d\,\sqrt{\text{Tan}[c+d x]}\right)-\frac{2\, a\, A\,(a+b\,\text{Tan}[c+d x])^{3/2}}{9\, d\,\text{Tan}[c+d x]^{9/2}}$$

Result (type 4, 5725 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Cos}[c+d x]^3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\left(\mathrm{i}\,(3 a^2 A b-A b^3+a^3 B-3 a b^2 B)\right.$$
$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\, b)^3\,(A+\mathrm{i}\, B)$$
$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\, b)^3$$
$$\left.(A-\mathrm{i}\, B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(\frac{3 a^2 A b\,\text{Csc}[c+d x]\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\right.$$
$$\frac{A b^3\,\text{Csc}[c+d x]\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+$$

$$\frac{a^3 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\frac{3 a b^2 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\left(3 a^2 A b \operatorname{Cos}\left[2 (c+d x)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)-$$

$$\frac{A b^3 \operatorname{Cos}\left[2 (c+d x)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\frac{a^3 B \operatorname{Cos}\left[2 (c+d x)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-$$

$$\left(3 a b^2 B \operatorname{Cos}\left[2 (c+d x)\right] \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)-$$

$$\frac{a^3 A \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 (c+d x)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}+$$

$$\left(3 a A b^2 \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 (c+d x)\right] \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)+$$

$$\left(3 a^2 b B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 (c+d x)\right] \sqrt{\operatorname{Tan}[c+d x]}\right) \Big/ \left(2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right)-$$

$$\left.\frac{b^3 B \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[2 (c+d x)\right] \sqrt{\operatorname{Tan}[c+d x]}}{2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}\right)$$

$$\left.(a+b \operatorname{Tan}[c+d x])^{5/2} (A+B \operatorname{Tan}[c+d x])\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\; (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right.$$

$$(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])$$

$$\left(-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \operatorname{Tan}[c+d x]^{3/2}}\right.$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^3\left(A+\mathbb{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^3\left(A-\mathbb{i}\,B\right)$$

$$\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\mathrm{Sec}\left[c+d\,x\right]^{5/2}\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\Bigg(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^3\left(A+\mathbb{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]+\left(a-\mathbb{i}\,b\right)^3\left(A-\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \left(\mathrm{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^3\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\,b\right)^3\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Bigg[$$

$$\left.\left.\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$4\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \Bigg(\mathbb{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)\ \text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\Bigg(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Big/\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right.\right.$$

$$\left.\left.\sqrt{\mathrm{Tan}[c+d\,x]}\right)\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\frac{1}{d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}$$

$$\mathrm{Cos}[c+d\,x]^3$$

$$\left(-\frac{2\left(326\,a^2\,A\,b-5\,A\,b^3+150\,a^3\,B-135\,a\,b^2\,B\right)}{315\,a}-\right.$$

$$\frac{1}{315\,a^2}$$

$$2\left(413\,a^4\,A\,\mathrm{Cos}[c+d\,x]-558\,a^2\,A\,b^2\,\mathrm{Cos}[c+d\,x]-10\,A\,b^4\,\mathrm{Cos}[c+d\,x]-\right.$$

$$\left.870\,a^3\,b\,B\,\mathrm{Cos}[c+d\,x]+45\,a\,b^3\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]+$$

$$\frac{2\left(421\,a^2\,A\,b-5\,A\,b^3+195\,a^3\,B-135\,a\,b^2\,B\right)\mathrm{Csc}[c+d\,x]^2}{315\,a}+$$

$$\frac{2}{315}\left(133\,a^2\,A\,\mathrm{Cos}[c+d\,x]-75\,A\,b^2\,\mathrm{Cos}[c+d\,x]-135\,a\,b\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]^3-$$

$$\frac{2}{63}\,a\,(19\,A\,b+9\,a\,B)\,\mathrm{Csc}[c+d\,x]^4-$$

$$\left.\frac{2}{9}\,a^2\,A\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^4\right)$$

$$\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}$$

$$(A+$$

$$B\,\mathrm{Tan}[c+d\,x])$$

Problem 450: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Tan}[c+d\,x]^{13/2}}\,dx$$

Optimal (type 3, 460 leaves, 13 steps):

$$-\frac{(\mathrm{i}\,a-b)^{5/2}\,(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-\frac{(\mathrm{i}\,a+b)^{5/2}\,(\mathrm{i}\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{d}-$$
$$\frac{2\,a\,(14\,A\,b+11\,a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{99\,d\,\mathrm{Tan}[c+d\,x]^{9/2}}+\frac{2\,(99\,a^2\,A-113\,A\,b^2-209\,a\,b\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{693\,d\,\mathrm{Tan}[c+d\,x]^{7/2}}+$$
$$\frac{2\,(495\,a^2\,A\,b-5\,A\,b^3+231\,a^3\,B-275\,a\,b^2\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{1155\,a\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}-$$
$$\left(2\,(1155\,a^4\,A-1485\,a^2\,A\,b^2-20\,A\,b^4-2541\,a^3\,b\,B+55\,a\,b^3\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(3465\,a^2\,d\,\mathrm{Tan}[c+d\,x]^{3/2}\right)-$$
$$\left(2\,(8085\,a^4\,A\,b-495\,a^2\,A\,b^3+40\,A\,b^5+3465\,a^5\,B-5313\,a^3\,b^2\,B-110\,a\,b^4\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(3465\,a^3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-\frac{2\,a\,A\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}{11\,d\,\mathrm{Tan}[c+d\,x]^{11/2}}$$

Result (type 4, 5809 leaves):

$$-\left(\left(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Cos}[c+d\,x]^3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$
$$\left((a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$
$$(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$
$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(-\frac{a^3\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{3\,a\,A\,b^2\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{3\,a^2\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b^3\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a^3\,A\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\left(3\,a\,A\,b^2\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\right.$$
$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(3\,a^2\,b\,B\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-\left(b^3\,B\,\text{Cos}\left[2\left(c+d\,x\right)\right]\,\text{Csc}[c+d\,x]\right.$$
$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(3\,a^2\,A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(A\,b^3\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(a^3\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(3\,a\,b^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\left(c+d\,x\right)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left(2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\Bigg)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\right.$$

$$\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\Bigg(\big(b-\sqrt{a^2+b^2}\big)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg) +$$

$$\Bigg(\mathrm{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\Bigg(\big(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\big)$$

$$\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}$$

$$\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^3\left(A+\mathrm{i}\,B\right)$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^3\left(A-\mathrm{i}\,B\right)\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}+$$

$$\left(1\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x])\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \Bigg(\left(a^3 A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+i\,b)^3\,(A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-i\,b)^3\,(A-i\,B)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Sec}[c+d\,x]}$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a^3 A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\mathrm{i}\,(a+\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)+\Bigg(\mathrm{i}\,(a-\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\ \sqrt{\text{Tan}[c+d\,x]}\Bigg)\Bigg)+$$

$$\frac{1}{d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}$$

$$\text{Cos}[c+d\,x]^3\Bigg(\frac{2\left(1965\,a^4 A-2050\,a^2 A\,b^2-20\,A\,b^4-3586\,a^3\,b\,B+55\,a\,b^3\,B\right)}{3465\,a^2}-$$

$$\frac{1}{3465\,a^3}\,2\,\big(10\,375\,a^4 A\,b\,\text{Cos}[c+d\,x]-510\,a^2 A\,b^3\,\text{Cos}[c+d\,x]+40\,A\,b^5\,\text{Cos}[c+d\,x]+4543\,a^5\,B\,\text{Cos}[c+d\,x]-6138\,a^3\,b^2\,B\,\text{Cos}[c+d\,x]-110\,a\,b^4\,B\,\text{Cos}[c+d\,x]\big)\,\text{Csc}[c+d\,x]-$$

$$\frac{1}{3465\,a^2}\,2\left(3090\,a^4 A-2615\,a^2 A\,b^2-20\,A\,b^4-4631\,a^3\,b\,B+55\,a\,b^3\,B\right)$$

$$\text{Csc}[c+d\,x]^2+\frac{1}{3465\,a}$$

$$2\left(3095\,a^2\,A\,b\,\text{Cos}[c+d\,x]-15\,A\,b^3\,\text{Cos}[c+d\,x]+1463\,a^3\,B\,\text{Cos}[c+d\,x]-825\,a\,b^2\,B\,\text{Cos}[c+d\,x]\right)$$

$$\text{Csc}[c+d\,x]^3+\frac{2}{693}\left(288\,a^2\,A-113\,A\,b^2-209\,a\,b\,B\right)$$

$$\text{Csc}[c+d\,x]^4-$$

$$\frac{2}{99}\left(23\,a\,A\,b\,\text{Cos}[c+d\,x]+11\,a^2\,B\,\text{Cos}[c+d\,x]\right)$$

$$\text{Csc}[c+d\,x]^5-\frac{2}{11}$$

$$a^2$$

$$A$$

$$\left.\text{Csc}[c+d\,x]^6\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\;\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}$$

$$\left(A+\right.$$

$$B$$

$$\left.\text{Tan}[c+d\,x]\right)$$

Problem 451: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(\frac{3\,b\,B}{2\,a}+B\,\text{Tan}[c+d\,x]\right)}{\text{Tan}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 3, 253 leaves, 14 steps):

$$\frac{\left(i\,a-b\right)^{5/2}\left(2\,a-3\,i\,b\right)\,B\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{2\,a\,d}+$$

$$\frac{2\,b^{5/2}\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{d}-\frac{\left(2\,a+3\,i\,b\right)\left(i\,a+b\right)^{5/2}\,B\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{2\,a\,d}-$$

$$\frac{2\left(a^2+3\,b^2\right)\,B\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Tan}[c+d\,x]}}-\frac{b\,B\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{d\,\text{Tan}[c+d\,x]^{3/2}}$$

Result (type 4, 76 107 leaves): Display of huge result suppressed!

Problem 452: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Tan}[c+d\,x]^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 206 leaves, 13 steps):

$$-\frac{(A+iB)\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{i a-b}\,d}+\frac{(2 A b-a B)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{b^{3/2}\,d}-\frac{(A-iB)\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]}{\sqrt{i a+b}\,d}+\frac{B\sqrt{\text{Tan}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{b\,d}$$

Result (type 4, 10 834 leaves):

$$\frac{B\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\,\sqrt{\text{Tan}[c+d x]}\,(A+B\,\text{Tan}[c+d x])}{b\,d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,\sqrt{a+b\,\text{Tan}[c+d x]}}+$$

$$\left(2\sqrt{a^2+b^2}\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2 A b-a B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,i\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-i a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\operatorname{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\operatorname{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x])}{a^2+b^2}}$$

$$\sqrt{\frac{a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{A\operatorname{Csc}[c+d\,x]\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{2\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}-\frac{a\,B\operatorname{Csc}[c+d\,x]\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{2\,b\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}-\right.$$

$$\frac{A\operatorname{Cos}[2\,(c+d\,x)]\operatorname{Csc}[c+d\,x]\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{2\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{B\operatorname{Csc}[c+d\,x]\,\sqrt{\operatorname{Sec}[c+d\,x]}\operatorname{Sin}[2\,(c+d\,x)]\,\sqrt{\operatorname{Tan}[c+d\,x]}}{2\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}}\right)(A+B\operatorname{Tan}[c+d\,x])\right)\Big/$$

$$\left(b\,d\sqrt{\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\operatorname{Sec}[c+d\,x]}\,(A\operatorname{Cos}[c+d\,x]+B\operatorname{Sin}[c+d\,x])\right.$$

$$\sqrt{\operatorname{Tan}[c+d\,x]}\,\sqrt{a+b\operatorname{Tan}[c+d\,x]}$$

$$\left(-\left(\left(\sqrt{a^2+b^2}\left(-B\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) + \left(2\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(2\, A\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right) + \left(a\, B\, \text{EllipticPi}\left[\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right) \text{Sec}[c+d\,x]^2 \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2 \text{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left.\left(b\,\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)\right)+$$

$$\left(a\,\sqrt{a^2+b^2}\,\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\text{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\text{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\right.$$

$$\left.\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)\Big/$$

$$\left(2\,b\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\sqrt{a^2+b^2}\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(\left(2\,A\,b-a\,B\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\;\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(b\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\;\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{b\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{a^2+b^2}\;\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left((2 A b - a B)\ \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathrm{i}\,A\,b\ \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\ \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,\mathrm{i}\,A\,b\ \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(i\,a+b+\sqrt{a^2+b^2}\right)-\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}$$

$$\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;+$$

$$\left(\sqrt{a^2+b^2}\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(\left(2\,A\,b-a\,B\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\right.$$

$$\left.\left.\frac{1}{a^2+b^2} a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]) \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right) \Big/$$

$$\left(b \sqrt{\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right.$$

$$\left.\sqrt{\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{a^2+b^2}} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(1 \Big/ \left(b \sqrt{\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)\right)$$

$$2 \sqrt{a^2+b^2} \sqrt{\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]}$$

$$\sqrt{\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{a^2+b^2}}$$

$$\sqrt{\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a B \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right)-$$

$$\left(a (2 A b-a B) \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4 \sqrt{2} \sqrt{a^2+b^2} \left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}} \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(\mathrm{i}\,a\,A\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\Bigg(2\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,b\,B\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\Bigg(2\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(\mathrm{i}\,a\,A\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\Bigg(2\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,b\,B\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\Bigg(2\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{i\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a\,A\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a^2\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)+$$

$$\Bigg(\sqrt{a^2+b^2}\ \Bigg(-B\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+$$

$$\Bigg(\left(2\,A\,b-a\,B\right)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \mathrm{ArcSin}\right[$$

$$\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+\right.$$

$$\left.\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg/$$

$$\left(b\,\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\right.$$

$$\left.\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)\right)\right)$$

Problem 453: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}\;(A+B\,\text{Tan}[c+d\,x])}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 168 leaves, 12 steps):

$$\frac{(i\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\;d}+\frac{2\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{b}\;d}-\frac{(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\;d}$$

Result (type 4, 6384 leaves):

$$-\left(\left(4\,a\left(-\left(\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\right.\right.\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)+\left((A+i\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(i\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(\frac{A\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\left.\left.\frac{B\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\; d\, \sqrt{\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{a^2+b^2}}\right.$$

$$(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x])$$

$$\left(\frac{1}{\sqrt{a^2+b^2}\, \sqrt{\frac{a \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])}{a^2+b^2}}\, \operatorname{Tan}[c+d x]^{3/2}}\right.$$

$$2 a \left(-\left(\left(B \operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-a+b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left((A+i B) \operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}}, \operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2 \sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-i a+b+\sqrt{a^2+b^2}\right)+\left(A \operatorname{EllipticPi}\left[\frac{2 \sqrt{a^2+b^2}}{i a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(\text{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\Bigg(\text{i}\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\text{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(\text{i}\,a+b+\sqrt{a^2+b^2}\right)+\Bigg(B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ -$$

$$\Bigg(a^2\Bigg(-\Bigg(\Bigg(B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\Bigg)+$$

$$\left((A+iB)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-ia+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-ia+b+\sqrt{a^2+b^2}\right)+\left(A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{ia+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(ia+b+\sqrt{a^2+b^2}\right)-$$

$$\left(iB\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{ia+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(ia+b+\sqrt{a^2+b^2}\right)+\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\operatorname{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\operatorname{Sec}[c+d\,x]}\,\sqrt{a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\operatorname{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\operatorname{Cos}[c+d\,x]+b\operatorname{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\operatorname{Tan}[c+d\,x]}\right)-$$

$$\left(2\,a\left(-\left(\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\operatorname{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\text{A EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathbb{i}\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,a\left(-\left(\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left((A+\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathbb{i}\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\left(1\Big/\left(\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,a\left(-\left(\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)+$$

$$\left(\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathbb{i}\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$4\,a\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,B\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,(A+\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,A\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(\mathrm{i}\,a\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$
$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$
$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\right.$$
$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$
$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$
$$\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\Bigg/\left(\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)\Bigg)$$

Problem 454: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 123 leaves, 7 steps):

$$\frac{(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{\mathrm{i}\,a-b}\,d}+\frac{(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{\mathrm{i}\,a+b}\,d}$$

Result (type 4, 4376 leaves):

$$-\left(\left(2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(\mathrm{i}\,A+B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\left(\frac{A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{A\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\left.\frac{B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)(A+B\,\text{Tan}[c+d\,x])\right)\right/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(A+i\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(i\,A+B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(\sqrt{2}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\left(-i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(i\,A+B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,A+B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\sqrt{2}\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(1\Bigg/\left(\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(\mathbb{i}\,A+B)\ \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(\mathbb{i}\,A+B)\ \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,A\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(A+\mathrm{i}\,B\right)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\,A+B\right)\ \mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,A\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\left(A+\mathrm{i}\,B\right)\right.$$

$$\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(i\,A+B)\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\Bigg(-\Bigg(\Bigg(A\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Big/$$

$$\Bigg(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Big/\Bigg(4\left(1-i\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}\Bigg)-$$

$$\Bigg(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(i\,A+B)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Big/\Bigg(4\left(1+i\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\right)$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\;\sqrt{\text{Tan}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)\Bigg)$$

Problem 455: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 159 leaves, 8 steps):

$$-\frac{\left(i\,A-B\right)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\;d}+\frac{\left(i\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\;d}-\frac{2\,A\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{a\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4442 leaves):

$$-\Big(\Big(2\,A\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(A+B\,\text{Tan}[c+d\,x]\right)\Big)\Big/\left(a\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big)-$$

$$\Bigg(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(-i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(A+i\,B\right)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\left(\frac{B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{B\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}\right.$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,B\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+\left(\sqrt{2}\;a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A+i\,B)\,\text{EllipticPi}\right[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(-i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]-(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{2}\,\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$3\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{i}\,B\,\text{EllipticF}\left[\text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A+\text{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\;+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\;\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,B\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(A+\mathrm{i}\,B)\;\text{EllipticPi}\Big[\right.$$

$$-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\;\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\sqrt{2}\;\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,B\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(A+\mathrm{i}\,B)\;\text{EllipticPi}\Big[\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(A-i\,B\right)$$

$$\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\ \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(-i\,B\,\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(A+i\,B\right)\ \text{EllipticPi}\Big[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(A-i\,B\right)$$

$$\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\ \text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\Bigg(-\Bigg(\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;B\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Big/$$

$$\Bigg(4\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\Bigg)-$$

$$\Bigg(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(A+i\,B)\;\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Big/\Bigg(4\,\Big(1-i\,\text{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)$$

$$\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)+$$

$$\Bigg(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(A-i\,B)\;\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Big/\Bigg(4\,\Big(1+i\,\text{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)$$

$$\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\;\sqrt{\text{Tan}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)$$

Problem 456: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Tan}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 203 leaves, 9 steps):

$$-\frac{(A+i\,B)\,\text{ArcTan}\Big[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{\sqrt{i\,a-b}\;d}-\frac{(A-i\,B)\,\text{ArcTanh}\Big[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]}{\sqrt{i\,a+b}\;d}-$$

$$\frac{2\,A\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a\,d\,\text{Tan}[c+d\,x]^{3/2}}+\frac{2\,(2\,A\,b-3\,a\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a^2\,d\,\sqrt{\text{Tan}[c+d\,x]}}$$

Result (type 4, 4506 leaves):

$$-\Bigg(\Bigg(2\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,A\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(-\mathrm{i}\,A+B)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(-\mathrm{i}\,A-B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg(-\frac{A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{A\,\text{Cos}\big[2\,(c+d\,x)\big]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])$$

$$\Bigg(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}}$$

$$\sqrt{2}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A+B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A-B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\left(\sqrt{2}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(-i\,A+B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A-B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A+B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\right.$$

$$\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A-B)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{2}\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(1\Big/\left(\sqrt{2}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-i\,A+B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(-\mathrm{i}\,A-B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}+$$

$$\left(1\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(-\mathrm{i}\,A+B\right)\text{EllipticPi}\Big[$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(-\mathrm{i}\,A-B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,A\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\text{i}\,A+B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\text{i}\,A-B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,A\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(-\text{i}\,A+B)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(-\text{i}\,A-B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\operatorname{Sec}[c+d x]^{3/2}\operatorname{Sin}[c+d x]\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]}\sqrt{\operatorname{Tan}[c+d x]}}$$

$$2\sqrt{2}\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\operatorname{Sec}[c+d x]}\left(\left(A\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(-iA+B)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1-i\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(-iA-B)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1+i\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\sqrt{\operatorname{Tan}[c+d x]}\sqrt{a+b\operatorname{Tan}[c+d x]}\right)\right)+$$

$$\left(\left(\frac{2A}{3a}-\frac{2(-2Ab\operatorname{Cos}[c+d x]+3aB\operatorname{Cos}[c+d x])\operatorname{Csc}[c+d x]}{3a^2}-\right.\right.$$

$$\left.\frac{2A\operatorname{Csc}[c+d x]^2}{3a}\right)$$

$$\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\sqrt{\mathrm{Tan}[c+d\,x]}\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Bigg)\Bigg/\left(d\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Problem 457: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\mathrm{Tan}[c+d\,x]^{7/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 256 leaves, 10 steps):

$$\frac{(i\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}-\frac{(i\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}-\frac{2\,A\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{5\,a\,d\,\mathrm{Tan}[c+d\,x]^{5/2}}+\frac{2\,(4\,A\,b-5\,a\,B)\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,a^2\,d\,\mathrm{Tan}[c+d\,x]^{3/2}}+\frac{2\,\left(15\,a^2\,A-8\,A\,b^2+10\,a\,b\,B\right)\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{15\,a^3\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 4549 leaves):

$$-\left(\left(\left(2\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(i\,B\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(A - i B)\, \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(-\frac{B\, \text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}}-\right.$$

$$\frac{B\, \text{Cos}[2(c+d x)]\, \text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}}+$$

$$\left.\left.\frac{A\, \text{Csc}[c+d x]\sqrt{\text{Sec}[c+d x]}\, \text{Sin}[2(c+d x)]\sqrt{\text{Tan}[c+d x]}}{2\sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}}\right)(A+B\, \text{Tan}[c+d x])\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\, (A\, \text{Cos}[c+d x]+B\, \text{Sin}[c+d x])\right)$$

$$\left(\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]}\, \text{Tan}[c+d x]^{3/2}}\right.$$

$$\sqrt{2}\, \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2 a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(i B\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+i B)\, \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+\left(\sqrt{2}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\,B\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\mathrm{i}\,B\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{2}\ \left(b-\sqrt{a^2+b^2}\right)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\ \sqrt{\text{Tan}[c+d x]}\Bigg)-$$

$$\Bigg(1\Bigg/\Bigg(\sqrt{2}\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\Bigg)\Bigg)$$

$$3\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathrm{i}\,B\ \text{EllipticF}\Big[\mathrm{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$(A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\Big],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;+$$

$$\left(1\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\text{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}$$

$$2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\text{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(A-\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$\sqrt{2}\ \text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,B\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(A-\mathbb{i}\,B\right)\ \text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}$$

$$2\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{2+\frac{2\,a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,B\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\right)+$$

$$\left(\left(\frac{2(-4\,A\,b+5\,a\,B)}{15\,a^2}+\frac{1}{15\,a^3}4\left(9\,a^2\,A\,\text{Cos}[c+d\,x]-4\,A\,b^2\,\text{Cos}[c+d\,x]+5\,a\,b\,B\,\text{Cos}[c+d\,x]\right)\right.\right.$$

$$\text{Csc}[c+d\,x]-$$

$$\frac{2(-4\,A\,b+5\,a\,B)\,\text{Csc}[c+d\,x]^2}{15\,a^2}-$$

$$\left.\frac{2\,A\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]^2}{5\,a}\right)$$

$$(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])$$

$$\sqrt{\text{Tan}[c+d\,x]}$$

$$(A+$$

$$\left.B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$
$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\right)$$

Problem 458: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^{3/2}\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 219 leaves, 13 steps):

$$-\frac{\left(\mathrm{i}\,A-B\right)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a-b\right)^{3/2}\,d}+\frac{2\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{b^{3/2}\,d}-$$
$$\frac{\left(\mathrm{i}\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a+b\right)^{3/2}\,d}+\frac{2\,a\,\left(A\,b-a\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{b\,\left(a^2+b^2\right)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 76 131 leaves): Display of huge result suppressed!

Problem 459: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 170 leaves, 8 steps):

$$-\frac{\left(A+\mathrm{i}\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a-b\right)^{3/2}\,d}+$$
$$\frac{\left(A-\mathrm{i}\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a+b\right)^{3/2}\,d}-\frac{2\,\left(A\,b-a\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{\left(a^2+b^2\right)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5177 leaves):

$$-\left(\left(4\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(-\mathbb{i}\,(A\,b-a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(\frac{A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left(A\,b\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(a\,B\,\text{Cos}[2\,(c+d\,x)]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(a\,A\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\left(b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[2\,(c+d\,x)]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left.\left(2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \text{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,(A\,b-a\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\,(A\,b-a\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}$$

$$\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg) + \Bigg(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(-\mathbb{i}\,(A\,b-a\,B)\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}$$

$$\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\Bigg)-$$

$$\left(1\Big/\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\mathrm{Sec}[c+d\,x]}\;\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;+$$

$$\Bigg(2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\right.$$

$$\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+i b)\ (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\ (b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x])\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/$$

$$\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^{3/2}\sqrt{\text{Tan}[c+d x]}\right) +$$

$$\left(1 \Big/ \left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-i\,(A b-a B)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$(a-i b)\ (A+i B)\ \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+i b)\ (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}(c+d x)\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathrm{i}\,(A b-a B)\ \text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$(a-\mathrm{i}\,b)\ (A+\mathrm{i}\,B)\ \text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+\mathrm{i}\,b)\ (A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\ \text{Sin}[c+d x]\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\ \left(-\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A b-a B)\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\left(\frac{2\,(-A\,b+a\,B)}{a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)}-\frac{2\,(-A\,b^2\,\mathrm{Sin}[c+d\,x]+a\,b\,B\,\mathrm{Sin}[c+d\,x])}{a\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}\right)\sqrt{\mathrm{Tan}[c+d\,x]}\,(A+B\,\mathrm{Tan}[c+d\,x])\Bigg)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\Big)$$

Problem 460: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 175 leaves, 8 steps):

$$\frac{(\mathrm{i} A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i} a-b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{(\mathrm{i} a-b)^{3/2}\,d}+$$

$$\frac{(\mathrm{i} A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i} a+b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{(\mathrm{i} a+b)^{3/2}\,d}+\frac{2\,b\,(A b-a B)\,\sqrt{\mathrm{Tan}[c+d x]}}{a\,(a^2+b^2)\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d x]}}$$

Result (type 4, 5177 leaves):

$$\left(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left((a A+b B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i} b)\,(A+\mathrm{i} B)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i} b)$$

$$\left.(A-\mathrm{i} B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d x]\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

$$\left(\frac{a A\,\mathrm{Csc}[c+d x]\,\sqrt{\mathrm{Sec}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{2\,(a-\mathrm{i} b)\,(a+\mathrm{i} b)\,\sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}}+\right.$$

$$\frac{b B\,\mathrm{Csc}[c+d x]\,\sqrt{\mathrm{Sec}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{2\,(a-\mathrm{i} b)\,(a+\mathrm{i} b)\,\sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}}+$$

$$\frac{a A\,\mathrm{Cos}[2\,(c+d x)]\,\mathrm{Csc}[c+d x]\,\sqrt{\mathrm{Sec}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{2\,(a-\mathrm{i} b)\,(a+\mathrm{i} b)\,\sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}}+$$

$$\frac{b B\,\mathrm{Cos}[2\,(c+d x)]\,\mathrm{Csc}[c+d x]\,\sqrt{\mathrm{Sec}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{2\,(a-\mathrm{i} b)\,(a+\mathrm{i} b)\,\sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}}-$$

$$\frac{A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{a\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\text{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(-\left(1\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$2\,\mathbb{i}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left((a^2+b^2)\right.$$

$$\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-\left(\mathbb{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)\ (A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\ \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\Bigg) +$$

$$\left(1\Bigg/\left((a^2+b^2)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a\,A+b\,B)\ \text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a-\mathrm{i}\,b)\ (A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a+\mathrm{i}\,b)\ (A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]} -$$

$$\Bigg(2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a\,A+b\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a\,A+b\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a\,A+b\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,A+b\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(A+\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(A-\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\Bigg)+$$

$$\left(\text{Sec}[c+d\,x]\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$

$$\left(-\frac{2\,b\left(-A\,b+a\,B\right)}{a^2\left(a-\mathrm{i}\,b\right)\left(a+\mathrm{i}\,b\right)}+\right.$$

$$\left.\frac{2\left(-A\,b^3\,\text{Sin}[c+d\,x]+a\,b^2\,B\,\text{Sin}[c+d\,x]\right)}{a^2\left(a-\mathrm{i}\,b\right)\left(a+\mathrm{i}\,b\right)\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\ \left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Bigg/$$

$$\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 461: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Tan}[c+d\,x]}{\text{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 216 leaves, 9 steps):

$$\frac{\left(A+i\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a-b\right)^{3/2}\,d}-\frac{\left(A-i\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a+b\right)^{3/2}\,d}-\frac{2\,A}{a\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}-\frac{2\,b\,\left(a^2\,A+2\,A\,b^2-a\,b\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{a^2\,\left(a^2+b^2\right)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5187 leaves):

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-i\,\left(A\,b-a\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)\,\left(A+i\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+i\,b\right)$$

$$\left.\left(A-i\,B\right)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(-\frac{A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{2\,\left(a-i\,b\right)\,\left(a+i\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{A\,b\,\mathrm{Cos}\big[2\,(c+d\,x)\big]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a\,B\,\mathrm{Cos}\big[2\,(c+d\,x)\big]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\big[2\,(c+d\,x)\big]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathbb{i}\,b)\,(a+\mathbb{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right)$$

$$\left(-\left(1\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]^{3/2}\right)\right)\right.$$

$$2\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\Big[\mathbb{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\mathrm{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathbb{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathbb{i}\left(A\,b-a\,B\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)\left(A-\mathbb{i}\,B\right)\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(a^2+b^2\right)\right.$$

$$\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathbb{i}\left(A\,b-a\,B\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Big/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}\,\sqrt{\text{Tan}\left[c+d\,x\right]}\right)+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[c+d\,x\right]}\right)\right)$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-\mathbb{i}\,\left(A\,b-a\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\left(2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A b-a B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d x]}\,\left(a+b\,\text{Tan}[c+d x]\right)^{3/2}\Bigg)+$$

$$\left(\text{Sec}[c+d x]\,\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^2\right.$$

$$\left(\frac{2\,b^2\,(-A b+a B)}{a^3\left(a^2+b^2\right)}-\frac{2\,A\,\text{Cot}[c+d x]}{a^2}-\right.$$

$$\left.\frac{2\left(-A\,b^4\,\text{Sin}[c+d x]+a\,b^3\,B\,\text{Sin}[c+d x]\right)}{a^3\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)}\right)$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)$$

Problem 462: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Tan}[c+d\,x]^{5/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 276 leaves, 10 steps):

$$-\frac{(i\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a-b)^{3/2}\,d}-\frac{(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{(i\,a+b)^{3/2}\,d}-\frac{2\,A}{3\,a\,d\,\text{Tan}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+\frac{2\,(4\,A\,b-3\,a\,B)}{3\,a^2\,d\,\sqrt{\text{Tan}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+\frac{2\,b\,\left(5\,a^2\,A\,b+8\,A\,b^3-3\,a^3\,B-6\,a\,b^2\,B\right)\sqrt{\text{Tan}[c+d\,x]}}{3\,a^3\,\left(a^2+b^2\right)\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5247 leaves):

$$-\left(\left(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)\,(A+i\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \mathrm{Sec}[c+d\,x]\ \left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\left(-\frac{a\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-\right.$$

$$\frac{b\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left(a\,A\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-$$
$$\left(b\,B\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)+$$
$$\left(A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)-$$
$$\left(a\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left.\left(2\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)\ \left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right.$$

$$\left(\left(1\Big/\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \mathrm{Tan}[c+d\,x]^{3/2}\right)\right)\right)$$

$$2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,A+b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a - i\, b\right) \left(A + i\, B\right) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a},\right.$$

$$\left. i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - \left(a + i\, b\right) \left(A - i\, B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right)$$

$$\text{Sec}\left[c + d\, x\right]^{5/2} \text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]^{3/2} + \left(i\, a \sqrt{\frac{b + \sqrt{a^2 + b^2} + a\, \text{Cot}\left[\frac{1}{2}\left(c + d\, x\right)\right]}{b + \sqrt{a^2 + b^2}}}\right.$$

$$\left(\left(a\, A + b\, B\right) \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] -\right.$$

$$\left(a - i\, b\right) \left(A + i\, B\right) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right],\right.$$

$$\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - \left(a + i\, b\right) \left(A - i\, B\right) \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\right) \sqrt{\text{Sec}\left[c + d\, x\right]}\right) \Big/$$

$$\left(\left(a^2 + b^2\right) \left(b - \sqrt{a^2 + b^2}\right) \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a\, \text{Cot}\left[\frac{1}{2}\left(c + d\, x\right)\right]}{b - \sqrt{a^2 + b^2}}}\right.$$

$$\sqrt{a\, \text{Cos}\left[c + d\, x\right] + b\, \text{Sin}\left[c + d\, x\right]} \sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d\, x\right)\right]}$$

$$\left.\sqrt{\text{Tan}[c+d\,x]}\right)+\left(i\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(1\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\,i\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\;+$$

$$\Bigg(2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a\,A+b\,B)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Big/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\ \left(A-\mathrm{i}\,B\right)\right.$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}\left[c+d\,x\right]^{3/2}\,\mathrm{Sin}\left[c+d\,x\right]\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}\left[c+d\,x\right]+b\,\mathrm{Sin}\left[c+d\,x\right]}\ \sqrt{\mathrm{Tan}\left[c+d\,x\right]}\right)\right)$$

$$4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Sec}\left[c+d\,x\right]}\ \left(-\left(\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,A+b\,B\right)\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(A+\mathrm{i}\,B\right)\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(A-\mathrm{i}\,B\right)\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\sqrt{\mathrm{Tan}[c+d x]}\,(a+b\,\mathrm{Tan}[c+d x])^{3/2}\right)\right)+$$

$$\Bigg(\mathrm{Sec}[c+d x]\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])^2\left(\frac{2\left(a^4 A+a^2 A b^2+3 A b^4-3 a b^3 B\right)}{3 a^4 (a-i b)(a+i b)}-\frac{2(-5 A b\,\mathrm{Cos}[c+d x]+3 a B\,\mathrm{Cos}[c+d x])\,\mathrm{Csc}[c+d x]}{3 a^3}-\frac{2 A\,\mathrm{Csc}[c+d x]^2}{3 a^2}+\frac{2\left(-A b^5\,\mathrm{Sin}[c+d x]+a b^4 B\,\mathrm{Sin}[c+d x]\right)}{a^4 (a-i b)(a+i b)(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])}\right)\sqrt{\mathrm{Tan}[c+d x]}\,(A+B\,\mathrm{Tan}[c+d x])\Bigg)\Big/\Big(d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+b\,\mathrm{Tan}[c+d x])^{3/2}\Big)$$

Problem 463: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Tan}[c+d x]^{5/2}\,(A+B\,\mathrm{Tan}[c+d x])}{(a+b\,\mathrm{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 282 leaves, 14 steps):

$$\frac{(i A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{(i a-b)^{5/2} d}+\frac{2 B\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{b^{5/2} d}-\frac{(i A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{(i a+b)^{5/2} d}+\frac{2 a (A b-a B)\,\mathrm{Tan}[c+d x]^{3/2}}{3 b\left(a^2+b^2\right) d\,(a+b\,\mathrm{Tan}[c+d x])^{3/2}}+\frac{2 a\left(2 A b^3-a\left(a^2+3 b^2\right) B\right)\sqrt{\mathrm{Tan}[c+d x]}}{b^2\left(a^2+b^2\right)^2 d\,\sqrt{a+b\,\mathrm{Tan}[c+d x]}}$$

Result (type 4, 113 022 leaves): Display of huge result suppressed!

Problem 464: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d x]^{3/2} (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 244 leaves, 9 steps):

$$\frac{(A+i B) \text{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(i a-b)^{5/2} d}+\frac{(A-i B) \text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right]}{(i a+b)^{5/2} d}+$$

$$\frac{2 a (A b-a B) \sqrt{\text{Tan}[c+d x]}}{3 b (a^2+b^2) d (a+b \text{Tan}[c+d x])^{3/2}}+\frac{2 (2 a^2 A b-4 A b^3+a^3 B+7 a b^2 B) \sqrt{\text{Tan}[c+d x]}}{3 b (a^2+b^2)^2 d \sqrt{a+b \text{Tan}[c+d x]}}$$

Result (type 4, 5635 leaves):

$$-\left(\left(4 i \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a^2 A-A b^2+2 a b B) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}$$

$$\left(-\frac{a^2 A \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-i b)^2 (a+i b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+\right.$$

$$\frac{A b^2 \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 (a-i b)^2 (a+i b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$

$$\frac{a\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a^2\,A\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(A\,b^2\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(a\,b\,B\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(a\,A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left((a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(a^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(b^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left(2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\left(2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+i\,b\right)^2\left(A-i\,B\right)\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\Big[$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\text{Sec}\left[c+d\,x\right]^{5/2}\,\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\text{Tan}\left[c+d\,x\right]^{3/2}\right)+$$

$$\left(i\,a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$\left(a-i\,b\right)^2\left(A+i\,B\right)\,\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+i\,b\right)^2\left(A-i\,B\right)\,\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i$$

$$\left.\left.\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]}\,\sqrt{\text{Tan}\left[c+d\,x\right]}\right)+$$

$$\left(\mathrm{i}\, a \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\left(\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2(A+\mathrm{i}\,B)\right.\right.$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\right.$$

$$\left.\left.\left.\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(3\,\mathrm{i}\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right],\right.$$

$$\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a + i b)^2 (A - i B) \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\Bigg) \sqrt{\text{Sec}[c + d x]} \sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}\Bigg) \Bigg/$$

$$\left((a^2 + b^2)^2 \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \sqrt{a \text{Cos}[c + d x] + b \text{Sin}[c + d x]} \sqrt{\text{Tan}[c + d x]}\right) +$$

$$\Bigg(2 i \text{Cos}\left[\frac{1}{2} (c + d x)\right]^2 \sqrt{\frac{b + \sqrt{a^2 + b^2} + a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{1 + \frac{a \text{Cot}\left[\frac{1}{2} (c + d x)\right]}{b - \sqrt{a^2 + b^2}}}$$

$$\Bigg((a^2 A - A b^2 + 2 a b B) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] -$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c + d x)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c + d x]} (b \text{Cos}[c + d x] - a \text{Sin}[c + d x]) \text{Tan}\left[\frac{1}{2} (c + d x)\right]^{3/2}\Bigg) \Bigg/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^{3/2} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(4 \, \mathrm{i} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right] \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i} b)^2 (A+\mathrm{i} B) \operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\right.$$

$$\left.\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i} b)^2 (A-\mathrm{i} B)$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(2 \, \mathrm{i} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x] + b \text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}\right) -$$

$$\left(4 i \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2} + a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d x]} \left(-\left(\left(i \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a^2 A - A b^2 + 2 a b B\right) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/\right.\right.$$

$$\left.\left(4 \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(i (a - i b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} (A + i B) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/$$

$$\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\right.$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left.\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$\left.\left.\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)\right)+$$

$$\left(\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\right.$$

$$\left(\frac{2\left(3\,a^2 A-4\,A\,b^2+7\,a\,b\,B\right)}{3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\right.$$

$$\frac{2\,a\,b\,(-A\,b+a\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}+$$

$$\left(2\left(-4\,a^2 A\,b\,\mathrm{Sin}[c+d\,x]+4\,A\,b^3\,\mathrm{Sin}[c+d\,x]+a^3\,B\,\mathrm{Sin}[c+d\,x]-7\,a\,b^2\,B\,\mathrm{Sin}[c+d\,x]\right)\right)\Big/$$

$$\left.\left(3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\right)\right)$$

$$\left.\sqrt{\mathrm{Tan}[c+d\,x]}\,(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\Big(d$$

$$(A\,\mathrm{Cos}[c+d\,x]+$$
$$B\,\mathrm{Sin}[c+d\,x])$$
$$(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\Big)$$

Problem 465: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\operatorname{Tan}[c+d x]}\,(A+B \operatorname{Tan}[c+d x])}{(a+b \operatorname{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 244 leaves, 9 steps):

$$-\frac{(i A-B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{(i a-b)^{5/2} d}+\frac{(i A+B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{(i a+b)^{5/2} d}-$$
$$\frac{2 (A b-a B) \sqrt{\operatorname{Tan}[c+d x]}}{3 (a^2+b^2) d (a+b \operatorname{Tan}[c+d x])^{3/2}}-\frac{2 (5 a^2 A b-A b^3-2 a^3 B+4 a b^2 B) \sqrt{\operatorname{Tan}[c+d x]}}{3 a (a^2+b^2)^2 d \sqrt{a+b \operatorname{Tan}[c+d x]}}$$

Result (type 4, 5639 leaves):

$$-\left(\left(4 \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$
$$\left(i\,(-2 a A b+a^2 B-b^2 B) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$
$$(a-i b)^2 (A+i B) \operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$
$$\left.i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 (A-i B)$$
$$\left.\operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\operatorname{Sec}[c+d x]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$
$$\left(\frac{a A b \operatorname{Csc}[c+d x] \sqrt{\operatorname{Sec}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{(a-i b)^2 (a+i b)^2 \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-\right.$$

$$\frac{a^2\,B\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,\sqrt{Tan[c+d\,x]}}{2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}}+$$
$$\frac{b^2\,B\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,\sqrt{Tan[c+d\,x]}}{2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}}+$$
$$\left(a\,A\,b\,Cos\left[2\,(c+d\,x)\right]\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left((a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)-$$
$$\left(a^2\,B\,Cos\left[2\,(c+d\,x)\right]\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)+$$
$$\left(b^2\,B\,Cos\left[2\,(c+d\,x)\right]\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)+$$
$$\left(a^2\,A\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,Sin\left[2\,(c+d\,x)\right]\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)-$$
$$\left(A\,b^2\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,Sin\left[2\,(c+d\,x)\right]\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)+$$
$$\left(a\,b\,B\,Csc[c+d\,x]\,\sqrt{Sec[c+d\,x]}\,Sin\left[2\,(c+d\,x)\right]\,\sqrt{Tan[c+d\,x]}\right)\Big/$$
$$\left.\left((a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,Cos[c+d\,x]+b\,Sin[c+d\,x]}\right)\right)\,(A+B\,Tan[c+d\,x])\right)\Big/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,Cos[c+d\,x]+B\,Sin[c+d\,x])\right.$$

$$\left(\left(2\,Cos\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,Cot\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,Cot\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left(\mathbb{i}\,(-2\,a\,A\,b+a^2\,B-b^2\,B)\,EllipticF\left[\mathbb{i}\,ArcSinh\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{Tan\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\text{i}\, b\right)^2 \left(A+\text{i}\, B\right) \text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + \left(a+\text{i}\, b\right)^2 \left(A-\text{i}\, B\right) \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i}\, \text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\, \text{Sec}\left[c+d\, x\right]^{5/2}\, \text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]^{3/2}\Bigg) \Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \sqrt{a\, \text{Cos}\left[c+d\, x\right]+b\, \text{Sin}\left[c+d\, x\right]}\, \text{Tan}\left[c+d\, x\right]^{3/2}\right) +$$

$$\left(a \sqrt{\frac{b+\sqrt{a^2+b^2}+a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left(\text{i}\left(-2\, a\, A\, b+a^2\, B-b^2\, B\right) \text{EllipticF}\left[\text{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$\left(a-\text{i}\, b\right)^2 \left(A+\text{i}\, B\right) \text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + \left(a+\text{i}\, b\right)^2 \left(A-\text{i}\, B\right) \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i}\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\, x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\, x\right]}\Bigg) \Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}\left(c+d\, x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\left(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\right.\right.\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)^2\,\left(A+\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathbb{i}\,b\right)^2\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\right.$$

$$\left.\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(i\left(-2 a A b+a^2 B-b^2 B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 (A-i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\Bigg) \Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}\right)+$$

$$\left(2 \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(i\left(-2 a A b+a^2 B-b^2 B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 (A-i B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(i\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^2\,(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(2\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathbb{i}\,(-2\,a\,A\,b+a^2\,B-b^2\,B)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\right.$$

$$\left.\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(-2\,a\,A\,b+a^2\,B-b^2\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.$$

$$\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\text{i}\,\left(a-\text{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A+\text{i}\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1-\text{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-\left(\text{i}\,\left(a+\text{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A-\text{i}\,B\right)\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left.\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$\left.\left.\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)\right)+$$

$$\left(\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{2\left(-6\,a^2\,A\,b+A\,b^3+3\,a^3\,B-4\,a\,b^2\,B\right)}{3\,a^2\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2}+\right.$$

$$\frac{2\,b^2\left(-A\,b+a\,B\right)}{3\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}-$$

$$\left(2\left(-7\,a^2\,A\,b^2\,\text{Sin}[c+d\,x]+A\,b^4\,\text{Sin}[c+d\,x]+4\,a^3\,b\,B\,\text{Sin}[c+d\,x]-4\,a\,b^3\,B\,\text{Sin}[c+d\,x]\right)\right)\Big/$$

$$\left.\left.\left(3\,a^2\left(a-\text{i}\,b\right)^2\left(a+\text{i}\,b\right)^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right)\right)\right)$$

$$\sqrt{\text{Tan}[c+d\,x]}\ \left(A+B\,\text{Tan}[c+d\,x]\right)\Big)\Big/\Big(d\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Big)$$

Problem 466: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Tan}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 247 leaves, 9 steps):

$$-\frac{\left(A+i\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a-b\right)^{5/2}\,d}-\frac{\left(A-i\,B\right)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\left(i\,a+b\right)^{5/2}\,d}+\frac{2\,b\,\left(A\,b-a\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{3\,a\,\left(a^2+b^2\right)\,d\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}+\frac{2\,b\,\left(8\,a^2\,A\,b+2\,A\,b^3-5\,a^3\,B+a\,b^2\,B\right)\,\sqrt{\text{Tan}[c+d\,x]}}{3\,a^2\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5654 leaves):

$$\Bigg(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^2\,\left(A+i\,B\right)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)^2\,\left(A-i\,B\right)$$

$$\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d x]^2 \left(a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]\right)^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}$$

$$\left(\frac{a^2 A \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-\right.$$

$$\frac{A b^2 \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{a b B \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{a^2 A \,\text{Cos}\left[2 \left(c+d x\right)\right] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\frac{A b^2 \,\text{Cos}\left[2 \left(c+d x\right)\right] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{a b B \,\text{Cos}\left[2 \left(c+d x\right)\right] \text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\frac{a A b \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \,\text{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\text{Tan}[c+d x]}}{\left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{a^2 B \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \,\text{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\left.\left.\frac{b^2 B \,\text{Csc}[c+d x] \sqrt{\text{Sec}[c+d x]} \,\text{Sin}\left[2 \left(c+d x\right)\right] \sqrt{\text{Tan}[c+d x]}}{2 \left(a-\mathbb{i} b\right)^2 \left(a+\mathbb{i} b\right)^2 \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}\right) \left(A+B \,\text{Tan}[c+d x]\right)\right) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \, d \left(A \,\text{Cos}[c+d x]+B \,\text{Sin}[c+d x]\right)\right.$$

$$\left(-\left(\left(2 \,\mathbb{i} \,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \text{EllipticF}\left[\mathbb{i} \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\right)\Big/$$

$$\left.\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\,\text{Tan}[c+d\,x]^{3/2}\right)\right)-$$

$$\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\right.\left((a^2\,A-A\,b^2+2\,a\,b\,B)\right.$$

$$\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left((a^2+b^2)^2\,\left(b-\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)-\left(\mathrm{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ \sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]} -$$

$$\left(2 i \,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d x]}\ \left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}\sqrt{\text{Tan}[c+d x]}\right)-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\left(a^2 A-A b^2+2 a b B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a - i b)^2 (A + i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c + d x]^{3/2} \,\text{Sin}[c + d x] \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} +$$

$$\left(1 \Big/ \left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}\right)\right)$$

$$4 i \,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2} + a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d x]} \left(-\left(\left(i \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a^2 A - A b^2 + 2 a b B\right) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/\right.\right.$$

$$\left.\left.\left(4 \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(i (a - i b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} (A + i B) \,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4 \left(1 - i \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1 + \frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) +$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\sqrt{\text{Tan}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\Bigg)+$$

$$\Bigg(\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\left(-\frac{2\,b\,(-9\,a^2\,A\,b-2\,A\,b^3+6\,a^3\,B-a\,b^2\,B)}{3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2}-\frac{2\,b^3\,(-A\,b+a\,B)}{3\,a\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\left(2\,(-10\,a^2\,A\,b^3\,\text{Sin}[c+d\,x]-2\,A\,b^5\,\text{Sin}[c+d\,x]+7\,a^3\,b^2\,B\,\text{Sin}[c+d\,x]-a\,b^4\,B\,\text{Sin}[c+d\,x])\right)\Big/\left(3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)\right)\sqrt{\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Big/\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 467: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Tan}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 301 leaves, 10 steps):

$$\frac{\left(\mathrm{i}\,A-B\right)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a-b\right)^{5/2}\,d}-\frac{\left(\mathrm{i}\,A+B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{\left(\mathrm{i}\,a+b\right)^{5/2}\,d}-$$

$$\frac{2\,A}{a\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}-\frac{2\,b\,\left(3\,a^2\,A+4\,A\,b^2-a\,b\,B\right)\,\sqrt{\mathrm{Tan}[c+d\,x]}}{3\,a^2\,\left(a^2+b^2\right)\,d\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}-$$

$$\frac{2\,b\,\left(3\,a^4\,A+17\,a^2\,A\,b^2+8\,A\,b^4-8\,a^3\,b\,B-2\,a\,b^3\,B\right)\,\sqrt{\mathrm{Tan}[c+d\,x]}}{3\,a^3\,\left(a^2+b^2\right)^2\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 5666 leaves):

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\,\left(A-\mathrm{i}\,B\right)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^2\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left(-\frac{a\,A\,b\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+\right.$$

$$\frac{a^2\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{b^2\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a\,A\,b\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,B\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{b^2\,B\,\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+$$

$$\frac{A\,b^2\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{a\,b\,B\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}\left[2\,\left(c+d\,x\right)\right]\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\left(a-\mathrm{i}\,b\right)^2\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(2\,\mathrm{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left(\mathrm{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\,\left(A+\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\,\left(A-\mathrm{i}\,B\right)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \mathrm{Sec}[c+d\,x]^{5/2}\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\Bigg)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \mathrm{Tan}[c+d\,x]^{3/2}\right)\Bigg)-$$

$$\Bigg(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \Bigg(\mathrm{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)$$

$$\mathrm{EllipticF}\Big[\mathrm{i}\ \mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)$$

$$\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\ \mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\mathrm{Sec}[c+d\,x]}\Bigg)\Big/\Bigg(\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\text{Tan}[c+d\,x]}\Bigg)-\Bigg(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\left(1\Bigg/\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\,-$$

$$\left(2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\mathrm{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}\left[c+d\,x\right]}\left(b\,\text{Cos}\left[c+d\,x\right]-a\,\text{Sin}\left[c+d\,x\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^{3/2} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(1 \Big/ \left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)\right)$$

$$4 \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right] \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(-2 a A b+a^2 B-b^2 B\right) \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i} b)^2 (A+\mathbb{i} B) \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i} b)^2 (A-\mathbb{i} B)$$

$$\left.\operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\left(1 \Big/ \left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)\right)$$

$$2 \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\left(\mathbb{i}\left(-2 a A b+a^2 B-b^2 B\right) \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i} b)^2 (A+\mathbb{i} B) \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}+$$

$$\Bigg(4\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \Bigg(\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \big(-2\,a\,A\,b+a^2\,B-b^2\,B\big)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Bigg/$$

$$\Bigg(4\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)+$$

$$\Bigg(\mathbb{i}\,(a-\mathbb{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathbb{i}\,B)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Bigg/\Bigg(4\,\Big(1-\mathbb{i}\,\text{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)$$

$$\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)-$$

$$\Bigg(\mathbb{i}\,(a+\mathbb{i}\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-\mathbb{i}\,B)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Bigg/$$

$$\Bigg(4\,\Big(1+\mathbb{i}\,\text{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\Bigg)\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)\right)$$

$$\left.\sqrt{\operatorname{Tan}[c+d x]} \left(a+b \operatorname{Tan}[c+d x]\right)^{5/2}\right)+$$

$$\left(\operatorname{Sec}[c+d x]^2 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^3\right.$$

$$\left(\frac{2 b^2 \left(-12 a^2 A b-5 A b^3+9 a^3 B+2 a b^2 B\right)}{3 a^4 (a-i b)^2 (a+i b)^2}-\frac{2 A \operatorname{Cot}[c+d x]}{a^3}+\frac{2 b^4 (-A b+a B)}{3 a^2 (a-i b)^2 (a+i b)^2 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2}-\right.$$

$$\left(2 \left(-13 a^2 A b^4 \operatorname{Sin}[c+d x]-5 A b^6 \operatorname{Sin}[c+d x]+10 a^3 b^3 B \operatorname{Sin}[c+d x]+2 a b^5 B \operatorname{Sin}[c+d x]\right)\right) \Big/ \left(3 a^4 (a-i b)^2 (a+i b)^2 \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)\right)\Bigg)$$

$$\left.\sqrt{\operatorname{Tan}[c+d x]} \left(A+B \operatorname{Tan}[c+d x]\right)\right) \Big/ \left(d \left(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]\right) \left(a+b \operatorname{Tan}[c+d x]\right)^{5/2}\right)$$

Problem 468: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{A+B \operatorname{Tan}[c+d x]}{\operatorname{Tan}[c+d x]^{5/2} \left(a+b \operatorname{Tan}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 3, 359 leaves, 11 steps):

$$\frac{(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a-b)^{5/2}\,d}+\frac{(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]}{(\mathrm{i}\,a+b)^{5/2}\,d}-$$
$$\frac{2\,A}{3\,a\,d\,\mathrm{Tan}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+\frac{2\,(2\,A\,b-a\,B)}{a^2\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+$$
$$\frac{2\,b\,(7\,a^2\,A\,b+8\,A\,b^3-3\,a^3\,B-4\,a\,b^2\,B)\,\sqrt{\mathrm{Tan}[c+d\,x]}}{3\,a^3\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+$$
$$\left(2\,b\,(8\,a^4\,A\,b+30\,a^2\,A\,b^3+16\,A\,b^5-3\,a^5\,B-17\,a^3\,b^2\,B-8\,a\,b^4\,B)\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Big/\left(3\,a^4\,(a^2+b^2)^2\,d\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\right)$$

Result (type 4, 5723 leaves):

$$-\left(\left(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$
$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$
$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$
$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$
$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$
$$\left(-\frac{a^2\,A\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}+\right.$$
$$\frac{A\,b^2\,\mathrm{Csc}[c+d\,x]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-$$

$$\frac{a\,b\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left(a^2\,A\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(A\,b^2\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(a\,b\,B\,\text{Cos}\left[2\,(c+d\,x)\right]\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left((a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(a\,A\,b\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left((a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$
$$\left(a^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$
$$\left(b^2\,B\,\text{Csc}[c+d\,x]\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left.\left(2\,(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\left(2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.\right.$$

$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[$$

$$\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\text{Sec}[c+d\,x]^{5/2}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\text{Tan}[c+d\,x]^{3/2}\right)+$$

$$\left(\mathrm{i}\,a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left((a^2A-A\,b^2+2\,a\,b\,B)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}$$

$$\left.\left.\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(i\, a \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\left(\left(a^2 A-A b^2+2 a b B\right) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2 (A+i B) \operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2 (A-i B) \operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]}\right) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(3\, i \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\Bigg((a^2\,A-A\,b^2+2\,a\,b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\Bigg/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^{3/2} \sqrt{\operatorname{Tan}[c+d x]}\right)+$$

$$\left(4\, i \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right] \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\right.$$

$$\left.\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2 (A-i B)$$

$$\left.\operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\operatorname{Sec}[c+d x]} \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)-$$

$$\left(2\, i \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \right.$$

$$\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]} \sqrt{\text{Tan}[c+d x]}\right) -$$

$$\left(4 i \,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2} + a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Sec}[c+d x]} \left(-\left(\left(i \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a^2 A - A b^2 + 2 a b B\right) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \right.\right.$$

$$\left.\left.\left(4 \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(i (a - i b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} (A + i B) \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/$$

$$\left(4 \left(1-\mathbb{i} \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]\right) \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}\right)+\left(\mathbb{i} (a+\mathbb{i} b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} (A-\mathbb{i} B)\right.$$

$$\left.\operatorname{Sec}\left[\frac{1}{2} (c+d x)\right]^2\right) \Big/ \left(4 \left(1+\mathbb{i} \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]\right) \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}\right)\right) \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}\right) \Big/$$

$$\left.\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}\right)\right)$$

$$\left.\left.\sqrt{\operatorname{Tan}[c+d x]} (a+b \operatorname{Tan}[c+d x])^{5/2}\right)\right)+$$

$$\left(\operatorname{Sec}[c+d x]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right.$$

$$\left(\frac{2 \left(a^6 A+2 a^4 A b^2+16 a^2 A b^4+8 A b^6-12 a^3 b^3 B-5 a b^5 B\right)}{3 a^5 (a-\mathbb{i} b)^2 (a+\mathbb{i} b)^2}-\right.$$

$$\frac{2 (-8 A b \operatorname{Cos}[c+d x]+3 a B \operatorname{Cos}[c+d x]) \operatorname{Csc}[c+d x]}{3 a^4}-$$

$$\frac{2 A \operatorname{Csc}[c+d x]^2}{3 a^3}-$$

$$\frac{2 b^5 (-A b+a B)}{3 a^3 (a-\mathbb{i} b)^2 (a+\mathbb{i} b)^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2}+$$

$$\left(2 \left(-16 a^2 A b^5 \operatorname{Sin}[c+d x]-8 A b^7 \operatorname{Sin}[c+d x]+\right.\right.$$

$$\left.\left.13 a^3 b^4 B \operatorname{Sin}[c+d x]+5 a b^6 B \operatorname{Sin}[c+d x]\right)\right) \Big/$$

$$\left.\left(3 a^5 (a-\mathbb{i} b)^2 (a+\mathbb{i} b)^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])\right)\right)$$

$$\left.\sqrt{\operatorname{Tan}[c+d x]} (A+B \operatorname{Tan}[c+d x])\right) \Big/ \Big(d$$

$$\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Big)$$

Problem 469: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Tan}[c+d\,x]^{3/2}\left(a\,B+b\,B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 155 leaves, 13 steps):

$$-\frac{B\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}+\frac{2\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{b}\,d}-\frac{B\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}$$

Result (type 4, 6091 leaves):

$$\Bigg(4\sqrt{a^2+b^2}\,B\,\Bigg(\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Sec}[c+d\,x]}\;\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}[c+d\,x]\right)\Big/$$

$$\left(d\,\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}\right.$$

$$\left(-\left(1\Big/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\text{Tan}[c+d\,x]^{3/2}\right)\right)\,2\,\sqrt{a^2+b^2}\right.$$

$$\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+\right.\right.$$

$$\left.b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],$$

$$\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\text{i}\left(b+\sqrt{a^2+b^2}\right)\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\text{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a-\text{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\ \text{Sec}[c+d\,x]^2\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\left(a\sqrt{a^2+b^2}\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/$$

$$\left(a-\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)\right)$$

$$\sqrt{\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\,\sqrt{\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Sec}[c+d\,x]}$$

$$\left.\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)\Big/$$

$$\left(\left(b+\sqrt{a^2+b^2}\right)\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\left(2\sqrt{a^2+b^2}\left(\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}\;\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Bigg/$$

$$\left(\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\;(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{3/2}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)-$$

$$\frac{1}{\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}}\,2\,\sqrt{a^2+b^2}\;\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)+\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/$$

$$\left(a-\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\;\sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;+$$

$$\left(2\,\sqrt{a^2+b^2}\,\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+i\,\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-i\,\left(b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$

$$\left(\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)+$$

$$\left(1\Big/\left(\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\right)$$

$$4\,\sqrt{a^2+b^2}\,\sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Sec}[c+d\,x]}$$

$$\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)\right)-$$

$$\left(a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a-\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)\right.+$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\;\sqrt{a^2+b^2}\;\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)+$$

$$\left(2\sqrt{a^2+b^2}\;\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)+$$

$$\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/$$

$$\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\,\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\right.$$

$$\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}\right)\right)$$

Problem 470: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Tan}[c+d\,x]}\,(a\,B+b\,B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 117 leaves, 8 steps):

$$\frac{i\,B\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a-b}\,d}-\frac{i\,B\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]}{\sqrt{i\,a+b}\,d}$$

Result (type 4, 2767 leaves):

$$\left(2\,B\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$
$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$
$$\left(d\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right.$$
$$\left(-\left(\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.\right.\right.$$
$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\left.\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Bigg/$$
$$\left.\left.\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\text{Tan}[c+d\,x]^{3/2}\right)\right)+\right.$$
$$\left(a\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$
$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$
$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\right)\Bigg/$$

$$\left(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(2\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\right)\Big/\left(\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\left(\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.$$

$$\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]^2\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)-$$

$$\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\left(-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{3/2}\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(2\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(\text{i}\,a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-\text{i}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(\mathrm{i}\, a \,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/ \left(4\left(b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{i}\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right) \Big/$$

$$\left(\sqrt{a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x]}\ \sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right.$$

$$\left.\left.\sqrt{\mathrm{Tan}[c+d x]}\right)\right)\sqrt{a+b\,\mathrm{Tan}[c+d x]}\right)$$

Problem 471: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{a B+b B\,\mathrm{Tan}[c+d x]}{\sqrt{\mathrm{Tan}[c+d x]}\,\left(a+b\,\mathrm{Tan}[c+d x]\right)^{3/2}}\,dx$$

Optimal (type 3, 111 leaves, 8 steps):

$$\frac{B\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{\sqrt{\mathrm{i}\, a-b}\ d}+\frac{B\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]}{\sqrt{\mathrm{i}\, a+b}\ d}$$

Result (type 4, 423 leaves):

$$\left(2\, i \sqrt{2}\, B \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{2+\frac{2 a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\left(\operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\operatorname{Sec}[c+d x] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) \Big/ \left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d \sqrt{\operatorname{Tan}[c+d x]} \sqrt{a+b \operatorname{Tan}[c+d x]}\right)$$

Problem 472: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{a B+b B \operatorname{Tan}[c+d x]}{\operatorname{Tan}[c+d x]^{3/2}(a+b \operatorname{Tan}[c+d x])^{3/2}}\, dx$$

Optimal (type 3, 150 leaves, 10 steps):

$$-\frac{i B \operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{\sqrt{i a-b}\; d}+\frac{i B \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right]}{\sqrt{i a+b}\; d}-\frac{2 B \sqrt{a+b \operatorname{Tan}[c+d x]}}{a d \sqrt{\operatorname{Tan}[c+d x]}}$$

Result (type 4, 2822 leaves):

$$B\left(\left(\left(2\left(\operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\sqrt{-\frac{a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.\right.\right.\right.$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(d\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\Bigg(\Bigg(\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\ \text{Tan}[c+d\,x]^{3/2}\right)-$$

$$\Bigg(a\,\Bigg(\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\left(2\left(-b+\sqrt{a^2+b^2}\right)\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right.$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Tan}[c+d\,x]}\Bigg)+$$

$$\Bigg(\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\Bigg(\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(2\,\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/\Bigg(\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\;\sqrt{\text{Tan}[c+d\,x]}\Bigg)-$$

$$\Bigg(\Bigg(\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]^2\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Big/$$

$$\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\,\sqrt{\text{Tan}[c+d\,x]}\right)+$$

$$\Bigg(\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\left(-\frac{a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}-\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}\right)\Bigg)\Big/$$

$$\Bigg(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\left(-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{3/2}$$

$$\sqrt{\text{Tan}[c+d\,x]}\Bigg)-\Bigg(2\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]\,\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(i\,a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-i\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(\mathrm{i}\, a\, \mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\left(b+\sqrt{a^2+b^2}\right)\left(1+\mathrm{i}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$
$$\left.\left.\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)\Bigg/$$
$$\left(\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\,\sqrt{\mathrm{Tan}[c+d\,x]}\right)\Bigg)$$
$$\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\left)-\frac{2\,\mathrm{Sec}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a\,d\,\sqrt{\mathrm{Tan}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right)$$

Problem 473: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 379 leaves, 12 steps):

$$-\frac{1}{4}\,(a-\mathrm{i}\,b)^{2/3}\,(A-\mathrm{i}\,B)\,x-\frac{1}{4}\,(a+\mathrm{i}\,b)^{2/3}\,(A+\mathrm{i}\,B)\,x+$$
$$\frac{\sqrt{3}\,(a-\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A+B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}-$$
$$\frac{\sqrt{3}\,(a+\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}-$$
$$\frac{(a+\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A-B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+\frac{(a-\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A+B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+$$
$$\frac{3\,(a-\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A+B)\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}-$$
$$\frac{3\,(a+\mathrm{i}\,b)^{2/3}\,(\mathrm{i}\,A-B)\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}+\frac{3\,B\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}{2\,d}$$

Result (type 3, 6768 leaves):

$$\frac{3\,B\,\mathrm{Cos}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,(A+B\,\mathrm{Tan}[c+d\,x])}{2\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}+$$
$$\Bigg(\Bigg(2\,\sqrt{3}\,(a+\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,a+b)\,(A-\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+$$

$$2\sqrt{3}\,(a-i b)^{1/3}(-i a+b)(A+i B)\,\text{ArcTan}\left[\frac{1+\frac{2(a+b\,\text{Tan}[c+d x])^{1/3}}{(a+i b)^{1/3}}}{\sqrt{3}}\right]+$$
$$2 i a A (a+i b)^{1/3}\,\text{Log}\left[(a-i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]+$$
$$2 A (a+i b)^{1/3} b\,\text{Log}\left[(a-i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]+$$
$$2 a (a+i b)^{1/3} B\,\text{Log}\left[(a-i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]-$$
$$2 i (a+i b)^{1/3} b B\,\text{Log}\left[(a-i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]-$$
$$2 i a A (a-i b)^{1/3}\,\text{Log}\left[(a+i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]+$$
$$2 A (a-i b)^{1/3} b\,\text{Log}\left[(a+i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]+$$
$$2 a (a-i b)^{1/3} B\,\text{Log}\left[(a+i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]+$$
$$2 i (a-i b)^{1/3} b B\,\text{Log}\left[(a+i b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\right]-i a A (a+i b)^{1/3}$$
$$\text{Log}\left[(a-i b)^{2/3}+(a-i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]-$$
$$A (a+i b)^{1/3} b\,\text{Log}\left[(a-i b)^{2/3}+(a-i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]-$$
$$a (a+i b)^{1/3} B\,\text{Log}\left[(a-i b)^{2/3}+(a-i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]+$$
$$i (a+i b)^{1/3} b B$$
$$\text{Log}\left[(a-i b)^{2/3}+(a-i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]+i a A$$
$$(a-i b)^{1/3}\,\text{Log}\left[(a+i b)^{2/3}+(a+i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]-$$
$$A (a-i b)^{1/3} b\,\text{Log}\left[(a+i b)^{2/3}+(a+i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]-$$
$$a (a-i b)^{1/3} B\,\text{Log}\left[(a+i b)^{2/3}+(a+i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]-$$
$$i (a-i b)^{1/3} b B$$
$$\left.\text{Log}\left[(a+i b)^{2/3}+(a+i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\right]\right)$$

$$\left(\text{Sec}[c+d x]^2\right)^{1/3}\left(\frac{a A}{\text{Sec}[c+d x]^{1/3}\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{1/3}}-\right.$$
$$\frac{b B}{\text{Sec}[c+d x]^{1/3}\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{1/3}}+\frac{A b\,\text{Sec}[c+d x]^{2/3}\,\text{Sin}[c+d x]}{\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{1/3}}+$$
$$\left.\left.\frac{a B\,\text{Sec}[c+d x]^{2/3}\,\text{Sin}[c+d x]}{\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{1/3}}\right)\left(\frac{a+b\,\text{Tan}[c+d x]}{\sqrt{\text{Sec}[c+d x]^2}}\right)^{2/3}\left(A+B\,\text{Tan}[c+d x]\right)\right)\Big/$$

$$\left(4 (a-i b)^{1/3}(a+i b)^{1/3} d\,\text{Sec}[c+d x]^{5/3}\left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{2/3}\right.$$
$$\left(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\right)$$
$$\left(-\frac{1}{6 (a-i b)^{1/3}(a+i b)^{1/3}(a+b\,\text{Tan}[c+d x])^{5/3}}\right.$$
$$b\left(2\sqrt{3}\,(a+i b)^{1/3}(i a+b)(A-i B)\,\text{ArcTan}\left[\frac{1+\frac{2(a+b\,\text{Tan}[c+d x])^{1/3}}{(a-i b)^{1/3}}}{\sqrt{3}}\right]+\right.$$

$$2\sqrt{3}\,(a-i b)^{1/3}\,(-i a+b)\,(A+i B)\,\text{ArcTan}\Big[\frac{1+\frac{2 (a+b \text{Tan}[c+d x])^{1/3}}{(a+i b)^{1/3}}}{\sqrt{3}}\Big]+2 i a A\,(a+i b)^{1/3}$$
$$\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+2 A\,(a+i b)^{1/3}\,b\,\text{Log}\Big[(a-i b)^{1/3}-$$
$$(a+b \text{Tan}[c+d x])^{1/3}\Big]+2 a\,(a+i b)^{1/3}\,B\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-$$
$$2 i\,(a+i b)^{1/3}\,b B\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-2 i a A\,(a-i b)^{1/3}$$
$$\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+2 A\,(a-i b)^{1/3}\,b\,\text{Log}\Big[(a+i b)^{1/3}-$$
$$(a+b \text{Tan}[c+d x])^{1/3}\Big]+2 a\,(a-i b)^{1/3}\,B\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 i\,(a-i b)^{1/3}\,b B\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-i a A\,(a+i b)^{1/3}$$
$$\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]-$$
$$A\,(a+i b)^{1/3}\,b\,\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+$$
$$(a+b \text{Tan}[c+d x])^{2/3}\Big]-a\,(a+i b)^{1/3}\,B\,\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}$$
$$(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]+i\,(a+i b)^{1/3}\,b B\,\text{Log}\Big[(a-i b)^{2/3}+$$
$$(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]+i a A\,(a-i b)^{1/3}$$
$$\text{Log}\Big[(a+i b)^{2/3}+(a+i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]-$$
$$A\,(a-i b)^{1/3}\,b\,\text{Log}\Big[(a+i b)^{2/3}+(a+i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+$$
$$(a+b \text{Tan}[c+d x])^{2/3}\Big]-a\,(a-i b)^{1/3}\,B\,\text{Log}\Big[(a+i b)^{2/3}+(a+i b)^{1/3}$$
$$(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]-i\,(a-i b)^{1/3}\,b B\,\text{Log}\Big[(a+i b)^{2/3}+$$
$$\left.(a+i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]\right)\,(\text{Sec}[c+d x]^2)^{4/3}$$

$$\left(\frac{a+b \text{Tan}[c+d x]}{\sqrt{\text{Sec}[c+d x]^2}}\right)^{2/3}+\frac{1}{6\,(a-i b)^{1/3}\,(a+i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{2/3}}$$

$$\left(2\sqrt{3}\,(a+i b)^{1/3}\,(i a+b)\,(A-i B)\,\text{ArcTan}\Big[\frac{1+\frac{2 (a+b \text{Tan}[c+d x])^{1/3}}{(a-i b)^{1/3}}}{\sqrt{3}}\Big]+\right.$$

$$2\sqrt{3}\,(a-i b)^{1/3}\,(-i a+b)\,(A+i B)\,\text{ArcTan}\Big[\frac{1+\frac{2 (a+b \text{Tan}[c+d x])^{1/3}}{(a+i b)^{1/3}}}{\sqrt{3}}\Big]+$$
$$2 i a A\,(a+i b)^{1/3}\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 A\,(a+i b)^{1/3}\,b\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 a\,(a+i b)^{1/3}\,B\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-$$
$$2 i\,(a+i b)^{1/3}\,b B\,\text{Log}\Big[(a-i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-$$
$$2 i a A\,(a-i b)^{1/3}\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 A\,(a-i b)^{1/3}\,b\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 a\,(a-i b)^{1/3}\,B\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]+$$
$$2 i\,(a-i b)^{1/3}\,b B\,\text{Log}\Big[(a+i b)^{1/3}-(a+b \text{Tan}[c+d x])^{1/3}\Big]-i a A\,(a+i b)^{1/3}$$
$$\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]-$$
$$A\,(a+i b)^{1/3}\,b\,\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+$$
$$(a+b \text{Tan}[c+d x])^{2/3}\Big]-a\,(a+i b)^{1/3}\,B\,\text{Log}\Big[(a-i b)^{2/3}+$$
$$(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]+i\,(a+i b)^{1/3}\,b B$$
$$\text{Log}\Big[(a-i b)^{2/3}+(a-i b)^{1/3}\,(a+b \text{Tan}[c+d x])^{1/3}+(a+b \text{Tan}[c+d x])^{2/3}\Big]+$$

$$
\begin{aligned}
&\mathrm{i}\, a A \left(a-\mathrm{i}\, b\right)^{1/3} \mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{2/3}+\left(a+\mathrm{i}\, b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\\
&\quad\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]-A\left(a-\mathrm{i}\, b\right)^{1/3} b\,\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{2/3}+\left(a+\mathrm{i}\, b\right)^{1/3}\\
&\quad\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]-a\left(a-\mathrm{i}\, b\right)^{1/3} B\,\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{2/3}+\\
&\quad\left(a+\mathrm{i}\, b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]-\mathrm{i}\left(a-\mathrm{i}\, b\right)^{1/3} b B\\
&\quad\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{2/3}+\left(a+\mathrm{i}\, b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]\Bigg)
\end{aligned}
$$

$$
\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/3}\mathrm{Tan}[c+d\,x]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{2/3}+
$$

$$
\left(1\Big/\left(6\left(a-\mathrm{i}\, b\right)^{1/3}\left(a+\mathrm{i}\, b\right)^{1/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{1/3}\right)\right)
$$

$$
\begin{aligned}
&\Bigg(2\sqrt{3}\left(a+\mathrm{i}\, b\right)^{1/3}\left(\mathrm{i}\, a+b\right)\left(A-\mathrm{i}\, B\right)\mathrm{ArcTan}\Big[\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}}\Big]+\\
&2\sqrt{3}\left(a-\mathrm{i}\, b\right)^{1/3}\left(-\mathrm{i}\, a+b\right)\left(A+\mathrm{i}\, B\right)\mathrm{ArcTan}\Big[\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}}\Big]+\\
&2\,\mathrm{i}\, a A\left(a+\mathrm{i}\, b\right)^{1/3}\mathrm{Log}\Big[\left(a-\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]+\\
&2A\left(a+\mathrm{i}\, b\right)^{1/3} b\,\mathrm{Log}\Big[\left(a-\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]+\\
&2a\left(a+\mathrm{i}\, b\right)^{1/3} B\,\mathrm{Log}\Big[\left(a-\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]-\\
&2\,\mathrm{i}\left(a+\mathrm{i}\, b\right)^{1/3} b B\,\mathrm{Log}\Big[\left(a-\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]-\\
&2\,\mathrm{i}\, a A\left(a-\mathrm{i}\, b\right)^{1/3}\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]+\\
&2A\left(a-\mathrm{i}\, b\right)^{1/3} b\,\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]+\\
&2a\left(a-\mathrm{i}\, b\right)^{1/3} B\,\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]+\\
&2\,\mathrm{i}\left(a-\mathrm{i}\, b\right)^{1/3} b B\,\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{1/3}-\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\Big]-\mathrm{i}\, a A\left(a+\mathrm{i}\, b\right)^{1/3}\\
&\quad\mathrm{Log}\Big[\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}\Big]-\\
&A\left(a+\mathrm{i}\, b\right)^{1/3} b\,\mathrm{Log}\Big[\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}+\\
&\quad\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]-a\left(a+\mathrm{i}\, b\right)^{1/3} B\\
&\quad\mathrm{Log}\Big[\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}\Big]+\\
&\mathrm{i}\left(a+\mathrm{i}\, b\right)^{1/3} b B\,\mathrm{Log}\Big[\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}+\\
&\quad\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]+\mathrm{i}\, a A\left(a-\mathrm{i}\, b\right)^{1/3}\mathrm{Log}\Big[\left(a+\mathrm{i}\, b\right)^{2/3}+\\
&\quad\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}\Big]-A\left(a-\mathrm{i}\, b\right)^{1/3} b\\
&\quad\mathrm{Log}\Big[\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}\Big]-\\
&a\left(a-\mathrm{i}\, b\right)^{1/3} B\,\mathrm{Log}\Big[\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}+\\
&\quad\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\Big]-\mathrm{i}\left(a-\mathrm{i}\, b\right)^{1/3} b B\\
&\quad\mathrm{Log}\Big[\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}\Big]\Bigg)
\end{aligned}
$$

$$\left(\text{Sec}[c+d x]^2\right)^{1/3}\left(b\sqrt{\text{Sec}[c+d x]^2}-\frac{\text{Tan}[c+d x]\,(a+b\,\text{Tan}[c+d x])}{\sqrt{\text{Sec}[c+d x]^2}}\right)+$$

$$\frac{1}{4\,(a-\mathrm{i}\,b)^{1/3}\,(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{2/3}}$$

$$\left(\text{Sec}[c+d x]^2\right)^{1/3}\left(\frac{a+b\,\text{Tan}[c+d x]}{\sqrt{\text{Sec}[c+d x]^2}}\right)^{2/3}$$

$$\Bigg(-\Big(\Big(2\,\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2\Big)\Big/\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}$$
$$\Big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)\Big)-\Big(2\,A\,(a+\mathrm{i}\,b)^{1/3}\,b^2\,\text{Sec}[c+d x]^2\Big)\Big/$$
$$\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}\Big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)-$$
$$\Big(2\,a\,(a+\mathrm{i}\,b)^{1/3}\,b\,B\,\text{Sec}[c+d x]^2\Big)\Big/\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}$$
$$\Big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)+\Big(2\,\mathrm{i}\,(a+\mathrm{i}\,b)^{1/3}\,b^2\,B\,\text{Sec}[c+d x]^2\Big)\Big/$$
$$\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}\Big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)+$$
$$\Big(2\,\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2\Big)\Big/\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}$$
$$\Big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)-\Big(2\,A\,(a-\mathrm{i}\,b)^{1/3}\,b^2\,\text{Sec}[c+d x]^2\Big)\Big/$$
$$\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}\Big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)-$$
$$\Big(2\,a\,(a-\mathrm{i}\,b)^{1/3}\,b\,B\,\text{Sec}[c+d x]^2\Big)\Big/\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}$$
$$\Big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)-\Big(2\,\mathrm{i}\,(a-\mathrm{i}\,b)^{1/3}\,b^2\,B\,\text{Sec}[c+d x]^2\Big)\Big/$$
$$\Big(3\,(a+b\,\text{Tan}[c+d x])^{2/3}\Big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\text{Tan}[c+d x])^{1/3}\Big)\Big)-$$
$$\left(\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{1/3}\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{2/3}}+\frac{2\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{1/3}}\right)\right)\Big/$$
$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\Big)-$$
$$\left(A\,(a+\mathrm{i}\,b)^{1/3}\,b\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{2/3}}+\frac{2\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{1/3}}\right)\right)\Big/$$
$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\Big)-$$
$$\left(a\,(a+\mathrm{i}\,b)^{1/3}\,B\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{2/3}}+\frac{2\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{1/3}}\right)\right)\Big/$$
$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\Big)+$$
$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^{1/3}\,b\,B\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{2/3}}+\frac{2\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{1/3}}\right)\right)\Big/$$
$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\Big)+$$
$$\left(\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{1/3}\left(\frac{(a+\mathrm{i}\,b)^{1/3}\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{2/3}}+\frac{2\,b\,\text{Sec}[c+d x]^2}{3\,(a+b\,\text{Tan}[c+d x])^{1/3}}\right)\right)\Big/$$
$$\Big((a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\text{Tan}[c+d x])^{1/3}+(a+b\,\text{Tan}[c+d x])^{2/3}\Big)-$$

$$\left(A\,(a-\mathrm{i}\,b)^{1/3}\,b\left(\frac{(a+\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$
$$\left((a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right)-$$
$$\left(a\,(a-\mathrm{i}\,b)^{1/3}\,B\left(\frac{(a+\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$
$$\left((a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right)-$$
$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^{1/3}\,b\,B\left(\frac{(a+\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$
$$\left((a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right)+$$
$$\left(4\,(a+\mathrm{i}\,b)^{1/3}\,b\,(\mathrm{i}\,a+b)\,(A-\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]^2\right)\Big/$$
$$\left(3\,(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}\right)^2\right)\right)+$$
$$\left(4\,(a-\mathrm{i}\,b)^{1/3}\,b\,(-\mathrm{i}\,a+b)\,(A+\mathrm{i}\,B)\,\mathrm{Sec}[c+d\,x]^2\right)\Big/$$
$$\left(3\,(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}\right)^2\right)\right)\Bigg)\Bigg)$$

Problem 474: Result more than twice size of optimal antiderivative.

$$\int(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 377 leaves, 12 steps):

$$-\frac{1}{4}\,(a-\mathrm{i}\,b)^{1/3}\,(A-\mathrm{i}\,B)\,x-\frac{1}{4}\,(a+\mathrm{i}\,b)^{1/3}\,(A+\mathrm{i}\,B)\,x-$$
$$\frac{\sqrt{3}\,(a-\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A+B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}+$$
$$\frac{\sqrt{3}\,(a+\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]}{2\,d}-$$
$$\frac{(a+\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A-B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+\frac{(a-\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A+B)\,\mathrm{Log}[\mathrm{Cos}[c+d\,x]]}{4\,d}+$$
$$\frac{3\,(a-\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A+B)\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}-$$
$$\frac{3\,(a+\mathrm{i}\,b)^{1/3}\,(\mathrm{i}\,A-B)\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]}{4\,d}+\frac{3\,B\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{d}$$

Result (type 3, 6772 leaves):

$$\frac{3\,B\,\mathrm{Cos}[c+d\,x]\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)}{d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)}+$$

$$\Bigg(\Bigg(-2\,i\,\sqrt{3}\,(a-i\,b)\,(a+i\,b)^{2/3}\,(A-i\,B)\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-i\,b)^{1/3}}}{\sqrt{3}}\Big]+$$

$$2\,i\,\sqrt{3}\,(a-i\,b)^{2/3}\,(a+i\,b)\,(A+i\,B)\,\mathrm{ArcTan}\Big[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+i\,b)^{1/3}}}{\sqrt{3}}\Big]+$$

$$2\,i\,a\,A\,(a+i\,b)^{2/3}\,\mathrm{Log}\big[(a-i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]+$$
$$2\,A\,(a+i\,b)^{2/3}\,b\,\mathrm{Log}\big[(a-i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]+$$
$$2\,a\,(a+i\,b)^{2/3}\,B\,\mathrm{Log}\big[(a-i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]-$$
$$2\,i\,(a+i\,b)^{2/3}\,b\,B\,\mathrm{Log}\big[(a-i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]-$$
$$2\,i\,a\,A\,(a-i\,b)^{2/3}\,\mathrm{Log}\big[(a+i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]+$$
$$2\,A\,(a-i\,b)^{2/3}\,b\,\mathrm{Log}\big[(a+i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]+$$
$$2\,a\,(a-i\,b)^{2/3}\,B\,\mathrm{Log}\big[(a+i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]+$$
$$2\,i\,(a-i\,b)^{2/3}\,b\,B\,\mathrm{Log}\big[(a+i\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big]-i\,a\,A\,(a+i\,b)^{2/3}$$
$$\mathrm{Log}\big[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]-$$
$$A\,(a+i\,b)^{2/3}\,b\,\mathrm{Log}\big[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]-$$
$$a\,(a+i\,b)^{2/3}\,B\,\mathrm{Log}\big[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]+$$
$$i\,(a+i\,b)^{2/3}\,b\,B$$
$$\mathrm{Log}\big[(a-i\,b)^{2/3}+(a-i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]+i\,a\,A$$
$$(a-i\,b)^{2/3}\,\mathrm{Log}\big[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]-$$
$$A\,(a-i\,b)^{2/3}\,b\,\mathrm{Log}\big[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]-$$
$$a\,(a-i\,b)^{2/3}\,B\,\mathrm{Log}\big[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]-$$
$$i\,(a-i\,b)^{2/3}\,b\,B$$
$$\mathrm{Log}\big[(a+i\,b)^{2/3}+(a+i\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\big]\Bigg)$$

$$\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/6}\,\Bigg(\frac{a\,A}{\mathrm{Sec}[c+d\,x]^{2/3}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{2/3}}-$$

$$\frac{b\,B}{\mathrm{Sec}[c+d\,x]^{2/3}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{2/3}}+\frac{A\,b\,\mathrm{Sec}[c+d\,x]^{1/3}\,\mathrm{Sin}[c+d\,x]}{\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{2/3}}+$$

$$\frac{a\,B\,\mathrm{Sec}[c+d\,x]^{1/3}\,\mathrm{Sin}[c+d\,x]}{\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{2/3}}\Bigg)\,\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{1/3}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Bigg)\Bigg/$$

$$\Bigg(4\,(a-i\,b)^{2/3}\,(a+i\,b)^{2/3}\,d\,\mathrm{Sec}[c+d\,x]^{4/3}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{1/3}$$

$$\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\Bigg)$$

$$\left(-\frac{1}{12\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)^{2/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{4/3}}\right.$$

$$b\left(-2\,\mathrm{i}\,\sqrt{3}\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)^{2/3}\,(A-\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+\right.$$

$$2\,\mathrm{i}\,\sqrt{3}\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+$$

$$2\,\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$
$$2\,A\,(a+\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$
$$2\,a\,(a+\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-2\,\mathrm{i}\,(a+\mathrm{i}\,b)^{2/3}\,b\,B$$
$$\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-2\,\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-\right.$$
$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+2\,A\,(a-\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$
$$2\,a\,(a-\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+2\,\mathrm{i}\,(a-\mathrm{i}\,b)^{2/3}$$
$$b\,B\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+\right.$$
$$\left.(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]-A\,(a+\mathrm{i}\,b)^{2/3}\,b$$
$$\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]-$$
$$a\,(a+\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+\right.$$
$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]+\mathrm{i}\,(a+\mathrm{i}\,b)^{2/3}\,b\,B\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\right.$$
$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]+\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+\right.$$
$$\left.(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]-A\,(a-\mathrm{i}\,b)^{2/3}\,b$$
$$\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]-$$
$$a\,(a-\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+\right.$$
$$\left.(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]-\mathrm{i}\,(a-\mathrm{i}\,b)^{2/3}\,b\,B\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{2/3}+\right.$$
$$\left.\left.(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\right]\right)\,\left(\mathrm{Sec}[c+d\,x]^2\right)^{7/6}$$

$$\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{1/3}+\frac{1}{12\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)^{2/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}$$

$$\left(-2\,\mathrm{i}\,\sqrt{3}\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)^{2/3}\,(A-\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a-\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+\right.$$

$$2\,\mathrm{i}\,\sqrt{3}\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{1+\frac{2\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}{(a+\mathrm{i}\,b)^{1/3}}}{\sqrt{3}}\right]+$$

$$2\,\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$
$$2\,A\,(a+\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$
$$2\,a\,(a+\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,\mathrm{i}\,(a+\mathrm{i}\,b)^{2/3}\,b\,B\,\mathrm{Log}\left[(a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]-$$
$$2\,\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{2/3}\,\mathrm{Log}\left[(a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\right]+$$

$$
\begin{aligned}
&2\,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\,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\,B\,\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\,A\,\left(a+\mathrm{i}\,b\right)^{2/3}\\
&\quad\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]-\\
&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.\\
&\qquad\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-a\,\left(a+\mathrm{i}\,b\right)^{2/3} B\,\mathrm{Log}\left[\left(a-\mathrm{i}\,b\right)^{2/3}+\right.\\
&\qquad\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]+\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^{2/3} b\,B\\
&\quad\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\,A\,\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}+\right.\\
&\qquad\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-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}\right.\\
&\qquad\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-a\,\left(a-\mathrm{i}\,b\right)^{2/3} B\,\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\right.\\
&\qquad\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]-\mathrm{i}\,\left(a-\mathrm{i}\,b\right)^{2/3} b\,B\\
&\quad\left.\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]\right)\\
&\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/6}\mathrm{Tan}[c+d\,x]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{1/3}+\\
&\left(1\Big/\left(12\,\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)^{2/3}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{1/3}\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{2/3}\right)\right)\\
&\left(-2\,\mathrm{i}\,\sqrt{3}\,\left(a-\mathrm{i}\,b\right)\left(a+\mathrm{i}\,b\right)^{2/3}\left(A-\mathrm{i}\,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]+\right.\\
&2\,\mathrm{i}\,\sqrt{3}\,\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,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\,\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]+\\
&2\,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\,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\,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}\,a\,A\,\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]+\\
&2\,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\,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\,B\,\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\,A\,\left(a+\mathrm{i}\,b\right)^{2/3}\\
&\quad\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]-\\
&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.\\
&\qquad\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]-a\,\left(a+\mathrm{i}\,b\right)^{2/3} B\\
&\quad\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}\,\left(a+\mathrm{i}\,b\right)^{2/3} b\,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.\\
&\qquad\left.\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{2/3}\right]+\mathrm{i}\,a\,A\,\left(a-\mathrm{i}\,b\right)^{2/3}\mathrm{Log}\left[\left(a+\mathrm{i}\,b\right)^{2/3}+\right.\\
&\qquad\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]-A\,\left(a-\mathrm{i}\,b\right)^{2/3} b\\
&\quad\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]-
\end{aligned}
$$

$$a\,(a-\mathrm{i}\,b)^{2/3}\,B\,\mathrm{Log}\Big[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\Big]-\mathrm{i}\,(a-\mathrm{i}\,b)^{2/3}\,b\,B$$

$$\left.\mathrm{Log}\Big[(a+\mathrm{i}\,b)^{2/3}+(a+\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\Big]\right)$$

$$\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/6}\left(b\,\sqrt{\mathrm{Sec}[c+d\,x]^2}-\frac{\mathrm{Tan}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)+$$

$$\frac{1}{4\,(a-\mathrm{i}\,b)^{2/3}\,(a+\mathrm{i}\,b)^{2/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\left(\mathrm{Sec}[c+d\,x]^2\right)^{1/6}\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Sec}[c+d\,x]^2}}\right)^{1/3}$$

$$\Bigg(-\Big(\big(2\,\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Sec}[c+d\,x]^2\big)\Big/\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}$$

$$\big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)\Big)-\big(2\,A\,(a+\mathrm{i}\,b)^{2/3}\,b^2\,\mathrm{Sec}[c+d\,x]^2\big)\Big/$$

$$\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,\big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)-$$

$$\big(2\,a\,(a+\mathrm{i}\,b)^{2/3}\,b\,B\,\mathrm{Sec}[c+d\,x]^2\big)\Big/\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}$$

$$\big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)+\big(2\,\mathrm{i}\,(a+\mathrm{i}\,b)^{2/3}\,b^2\,B\,\mathrm{Sec}[c+d\,x]^2\big)\Big/$$

$$\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,\big((a-\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)+$$

$$\big(2\,\mathrm{i}\,a\,A\,(a-\mathrm{i}\,b)^{2/3}\,b\,\mathrm{Sec}[c+d\,x]^2\big)\Big/\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}$$

$$\big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)-\big(2\,A\,(a-\mathrm{i}\,b)^{2/3}\,b^2\,\mathrm{Sec}[c+d\,x]^2\big)\Big/$$

$$\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,\big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)-$$

$$\big(2\,a\,(a-\mathrm{i}\,b)^{2/3}\,b\,B\,\mathrm{Sec}[c+d\,x]^2\big)\Big/\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}$$

$$\big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)-\big(2\,\mathrm{i}\,(a-\mathrm{i}\,b)^{2/3}\,b^2\,B\,\mathrm{Sec}[c+d\,x]^2\big)\Big/$$

$$\Big(3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\,\big((a+\mathrm{i}\,b)^{1/3}-(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}\big)\Big)-$$

$$\left(\mathrm{i}\,a\,A\,(a+\mathrm{i}\,b)^{2/3}\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$

$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\Big)-$$

$$\left(A\,(a+\mathrm{i}\,b)^{2/3}\,b\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$

$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\Big)-$$

$$\left(a\,(a+\mathrm{i}\,b)^{2/3}\,B\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$

$$\Big((a-\mathrm{i}\,b)^{2/3}+(a-\mathrm{i}\,b)^{1/3}\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}+(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}\Big)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^{2/3}\,b\,B\left(\frac{(a-\mathrm{i}\,b)^{1/3}\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{2/3}}+\frac{2\,b\,\mathrm{Sec}[c+d\,x]^2}{3\,(a+b\,\mathrm{Tan}[c+d\,x])^{1/3}}\right)\right)\Big/$$

$$\left(\left(a-\mathrm{i}\,b\right)^{2/3}+\left(a-\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right)+$$

$$\left(\mathrm{i}\,a\,A\left(a-\mathrm{i}\,b\right)^{2/3}\left(\frac{\left(a+\mathrm{i}\,b\right)^{1/3}b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}}+\frac{2\,b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}\right)\right)\bigg/$$

$$\left(\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right)-$$

$$\left(A\left(a-\mathrm{i}\,b\right)^{2/3}b\left(\frac{\left(a+\mathrm{i}\,b\right)^{1/3}b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}}+\frac{2\,b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}\right)\right)\bigg/$$

$$\left(\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right)-$$

$$\left(a\left(a-\mathrm{i}\,b\right)^{2/3}B\left(\frac{\left(a+\mathrm{i}\,b\right)^{1/3}b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}}+\frac{2\,b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}\right)\right)\bigg/$$

$$\left(\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right)-$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^{2/3}b\,B\left(\frac{\left(a+\mathrm{i}\,b\right)^{1/3}b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}}+\frac{2\,b\,\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}\right)\right)\bigg/$$

$$\left(\left(a+\mathrm{i}\,b\right)^{2/3}+\left(a+\mathrm{i}\,b\right)^{1/3}\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}+\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\right)-$$

$$\frac{4\,\mathrm{i}\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)^{2/3}b\left(A-\mathrm{i}\,B\right)\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a-\mathrm{i}\,b\right)^{1/3}}\right)^2\right)}+$$

$$\left.\left.\left.\frac{4\,\mathrm{i}\left(a-\mathrm{i}\,b\right)^{2/3}\left(a+\mathrm{i}\,b\right)^{2/3}b\left(A+\mathrm{i}\,B\right)\text{Sec}[c+d\,x]^2}{3\left(a+b\,\text{Tan}[c+d\,x]\right)^{2/3}\left(1+\frac{1}{3}\left(1+\frac{2\left(a+b\,\text{Tan}[c+d\,x]\right)^{1/3}}{\left(a+\mathrm{i}\,b\right)^{1/3}}\right)^2\right)}\right)\right)\right)$$

Problem 477: Unable to integrate problem.

$$\int\frac{\mathrm{i}-\text{Tan}[e+f\,x]}{\left(c+d\,\text{Tan}[e+f\,x]\right)^{1/3}}\,dx$$

Optimal (type 3, 148 leaves, 5 steps):

$$-\frac{\mathrm{i}\,x}{2\left(c-\mathrm{i}\,d\right)^{1/3}}-\frac{\sqrt{3}\,\text{ArcTan}\left[\frac{1+\frac{2\left(c+d\,\text{Tan}[e+f\,x]\right)^{1/3}}{\left(c-\mathrm{i}\,d\right)^{1/3}}}{\sqrt{3}}\right]}{\left(c-\mathrm{i}\,d\right)^{1/3}f}-$$

$$\frac{\text{Log}[\text{Cos}[e+f\,x]]}{2\left(c-\mathrm{i}\,d\right)^{1/3}f}-\frac{3\,\text{Log}\left[\left(c-\mathrm{i}\,d\right)^{1/3}-\left(c+d\,\text{Tan}[e+f\,x]\right)^{1/3}\right]}{2\left(c-\mathrm{i}\,d\right)^{1/3}f}$$

Result (type 8, 29 leaves):

$$\int\frac{\mathrm{i}-\text{Tan}[e+f\,x]}{\left(c+d\,\text{Tan}[e+f\,x]\right)^{1/3}}\,dx$$

Problem 479: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^m\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 403 leaves, 9 steps):

$$-\left(\left(b\left(A\,b^3\left(12+7\,m+m^2\right)+4\,a\,b^2\,B\left(12+7\,m+m^2\right)-2\,a^3\,B\left(19+8\,m+m^2\right)-a^2\,A\,b\left(68+37\,m+5\,m^2\right)\right)\right.\right.$$
$$\left.\left.\text{Tan}[c+d\,x]^{1+m}\right)\Big/\left(d\,(1+m)\,(3+m)\,(4+m)\right)\right)+\frac{1}{d\,(1+m)}$$
$$\left(a^4\,A-6\,a^2\,A\,b^2+A\,b^4-4\,a^3\,b\,B+4\,a\,b^3\,B\right)\,\text{Hypergeometric2F1}\left[1,\frac{1+m}{2},\frac{3+m}{2},-\text{Tan}[c+d\,x]^2\right]$$
$$\text{Tan}[c+d\,x]^{1+m}+$$
$$\left(b^2\left(2\,a\,A\,b\,(4+m)^2-b^2\,B\left(12+7\,m+m^2\right)+a^2\,B\left(26+9\,m+m^2\right)\right)\text{Tan}[c+d\,x]^{2+m}\right)\Big/$$
$$\left(d\,(2+m)\,(3+m)\,(4+m)\right)+\frac{1}{d\,(2+m)}\left(4\,a^3\,A\,b-4\,a\,A\,b^3+a^4\,B-6\,a^2\,b^2\,B+b^4\,B\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[c+d\,x]^2\right]\,\text{Tan}[c+d\,x]^{2+m}+$$
$$\frac{b\,(A\,b\,(4+m)+a\,B\,(7+m))\,\text{Tan}[c+d\,x]^{1+m}\,(a+b\,\text{Tan}[c+d\,x])^2}{d\,(3+m)\,(4+m)}+$$
$$\frac{b\,B\,\text{Tan}[c+d\,x]^{1+m}\,(a+b\,\text{Tan}[c+d\,x])^3}{d\,(4+m)}$$

Result (type 8, 33 leaves):

$$\int \text{Tan}[c+d\,x]^m\,(a+b\,\text{Tan}[c+d\,x])^4\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Problem 480: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^m\,(a+b\,\text{Tan}[c+d\,x])^3\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 267 leaves, 8 steps):

$$\frac{b\left(3\,a\,A\,b\,(3+m)-b^2\,B\,(3+m)+2\,a^2\,B\,(4+m)\right)\text{Tan}[c+d\,x]^{1+m}}{d\,(1+m)\,(3+m)}+\frac{1}{d\,(1+m)}$$
$$\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{Hypergeometric2F1}\left[1,\frac{1+m}{2},\frac{3+m}{2},-\text{Tan}[c+d\,x]^2\right]\,\text{Tan}[c+d\,x]^{1+m}+$$
$$\frac{b^2\,(A\,b\,(3+m)+a\,B\,(5+m))\,\text{Tan}[c+d\,x]^{2+m}}{d\,(2+m)\,(3+m)}+\frac{1}{d\,(2+m)}$$
$$\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[c+d\,x]^2\right]\,\text{Tan}[c+d\,x]^{2+m}+$$
$$\frac{b\,B\,\text{Tan}[c+d\,x]^{1+m}\,(a+b\,\text{Tan}[c+d\,x])^2}{d\,(3+m)}$$

Result (type 8, 33 leaves):

$$\int \mathrm{Tan}[c+d\,x]^m\,(a+b\,\mathrm{Tan}[c+d\,x])^3\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Problem 484: Unable to integrate problem.

$$\int \frac{\mathrm{Tan}[c+d\,x]^m\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 5, 282 leaves, 9 steps):

$$\left((a^2 A-A\,b^2+2\,a\,b\,B)\,\mathrm{Hypergeometric2F1}\left[1,\frac{1+m}{2},\frac{3+m}{2},-\mathrm{Tan}[c+d\,x]^2\right]\mathrm{Tan}[c+d\,x]^{1+m}\right)\Big/\left((a^2+b^2)^2\,d\,(1+m)\right)+\left(b\,\left(a^2\,A\,b\,(2-m)-A\,b^3\,m+a\,b^2\,B\,(1+m)-a^3\,(B-B\,m)\right)\mathrm{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right]\mathrm{Tan}[c+d\,x]^{1+m}\right)\Big/\left(a^2\,(a^2+b^2)^2\,d\,(1+m)\right)-\left((2\,a\,A\,b-a^2\,B+b^2\,B)\,\mathrm{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{4+m}{2},-\mathrm{Tan}[c+d\,x]^2\right]\mathrm{Tan}[c+d\,x]^{2+m}\right)\Big/\left((a^2+b^2)^2\,d\,(2+m)\right)+\frac{b\,(A\,b-a\,B)\,\mathrm{Tan}[c+d\,x]^{1+m}}{a\,(a^2+b^2)\,d\,(a+b\,\mathrm{Tan}[c+d\,x])}$$

Result (type 8, 33 leaves):

$$\int \frac{\mathrm{Tan}[c+d\,x]^m\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^2}\,dx$$

Problem 485: Unable to integrate problem.

$$\int \frac{\mathrm{Tan}[c+d\,x]^m\,(A+B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 5, 438 leaves, 10 steps):

$$\left(\left(a^3 A - 3 a A b^2 + 3 a^2 b B - b^3 B\right) \text{Hypergeometric2F1}\left[1, \frac{1+m}{2}, \frac{3+m}{2}, -\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{1+m}\right) \Big/ \left(\left(a^2+b^2\right)^3 d (1+m)\right) - \left(b \left(A b^5 (1-m) m + a b^4 B m (1+m) - 2 a^3 b^2 B \left(3+m-m^2\right) + 2 a^2 A b^3 \left(1+3 m-m^2\right) - a^4 A b \left(6-5 m+m^2\right) + a^5 B \left(2-3 m+m^2\right)\right) \text{Hypergeometric2F1}\left[1, 1+m, 2+m, -\frac{b \text{Tan}[c+d x]}{a}\right] \text{Tan}[c+d x]^{1+m}\right) \Big/ \left(2 a^3 \left(a^2+b^2\right)^3 d (1+m)\right) - \left(\left(3 a^2 A b - A b^3 - a^3 B + 3 a b^2 B\right) \text{Hypergeometric2F1}\left[1, \frac{2+m}{2}, \frac{4+m}{2}, -\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{2+m}\right) \Big/ \left(\left(a^2+b^2\right)^3 d (2+m)\right) + \frac{b (A b - a B) \text{Tan}[c+d x]^{1+m}}{2 a \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^2} + \left(b \left(A b^3 (1-m) - a^3 B (3-m) + a^2 A b (5-m) + a b^2 B (1+m)\right) \text{Tan}[c+d x]^{1+m}\right) \Big/ \left(2 a^2 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])\right)$$

Result (type 8, 33 leaves):

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^3} \, dx$$

Problem 486: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^4} \, dx$$

Optimal (type 5, 659 leaves, 11 steps):

$$\left(\left(a^4 A-6 a^2 A b^2+A b^4+4 a^3 b B-4 a b^3 B\right)\right.$$
$$\left.\text{Hypergeometric2F1}\left[1,\frac{1+m}{2},\frac{3+m}{2},-\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{1+m}\right)\Big/\left(\left(a^2+b^2\right)^4 d (1+m)\right)-$$
$$\left(b \left(a b^6 B m \left(1-m^2\right)+3 a^2 A b^5 m \left(2-5 m+m^2\right)+A b^7 m \left(2-3 m+m^2\right)+\right.\right.$$
$$3 a^3 b^4 B \left(2+5 m+2 m^2-m^3\right)+a^7 B \left(6-11 m+6 m^2-m^3\right)-a^6 A b \left(24-26 m+9 m^2-m^3\right)+$$
$$\left.\left.3 a^4 A b^3 \left(8+10 m-7 m^2+m^3\right)-3 a^5 b^2 B \left(12-m-4 m^2+m^3\right)\right)\right)$$
$$\left.\text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{b \text{Tan}[c+d x]}{a}\right] \text{Tan}[c+d x]^{1+m}\right)\Big/$$
$$\left(6 a^4 \left(a^2+b^2\right)^4 d (1+m)\right)-\left(\left(4 a^3 A b-4 a A b^3-a^4 B+6 a^2 b^2 B-b^4 B\right)\right.$$
$$\left.\text{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[c+d x]^2\right] \text{Tan}[c+d x]^{2+m}\right)\Big/$$
$$\left(\left(a^2+b^2\right)^4 d (2+m)\right)+\frac{b (A b-a B) \text{Tan}[c+d x]^{1+m}}{3 a \left(a^2+b^2\right) d (a+b \text{Tan}[c+d x])^3}+$$
$$\left(b \left(A b^3 (2-m)-a^3 B (5-m)+a^2 A b (8-m)+a b^2 B (1+m)\right) \text{Tan}[c+d x]^{1+m}\right)\Big/$$
$$\left(6 a^2 \left(a^2+b^2\right)^2 d (a+b \text{Tan}[c+d x])^2\right)+$$
$$\left(b \left(a b^4 B \left(1-m^2\right)+2 a^3 b^2 B \left(7+3 m-m^2\right)+a^4 A b \left(26-9 m+m^2\right)+2 a^2 A b^3 \left(2-6 m+m^2\right)-\right.\right.$$
$$\left.\left.a^5 B \left(11-6 m+m^2\right)+A b^5 \left(2-3 m+m^2\right)\right) \text{Tan}[c+d x]^{1+m}\right)\Big/\left(6 a^3 \left(a^2+b^2\right)^3 d (a+b \text{Tan}[c+d x])\right)$$

Result (type 8, 33 leaves):

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^4} \, dx$$

Problem 487: Unable to integrate problem.

$$\int \text{Tan}[c+d x]^m (a+b \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 6, 193 leaves, 7 steps):

$$\left(a^2 (A+i B) \text{AppellF1}\left[1+m,-\frac{5}{2},1,2+m,-\frac{b \text{Tan}[c+d x]}{a},-i \text{Tan}[c+d x]\right]\right.$$
$$\left.\text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(2 d (1+m) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right)+$$
$$\left(a^2 (A-i B) \text{AppellF1}\left[1+m,-\frac{5}{2},1,2+m,-\frac{b \text{Tan}[c+d x]}{a},i \text{Tan}[c+d x]\right]\right.$$
$$\left.\text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right)\Big/\left(2 d (1+m) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right)$$

Result (type 8, 35 leaves):

$$\int \text{Tan}[c+d x]^m \left(a+b \text{Tan}[c+d x]\right)^{5/2} \left(A+B \text{Tan}[c+d x]\right) \, dx$$

Problem 488: Unable to integrate problem.

$$\int \text{Tan}[c+d x]^m \left(a+b \text{Tan}[c+d x]\right)^{3/2} \left(A+B \text{Tan}[c+d x]\right) \, dx$$

Optimal (type 6, 189 leaves, 7 steps):

$$\left(a \left(A+i B\right) \text{AppellF1}\left[1+m, -\frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(2 d \left(1+m\right) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) + \left(a \left(A-i B\right) \text{AppellF1}\left[1+m, -\frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(2 d \left(1+m\right) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right)$$

Result (type 8, 35 leaves):

$$\int \text{Tan}[c+d x]^m \left(a+b \text{Tan}[c+d x]\right)^{3/2} \left(A+B \text{Tan}[c+d x]\right) \, dx$$

Problem 489: Unable to integrate problem.

$$\int \text{Tan}[c+d x]^m \sqrt{a+b \text{Tan}[c+d x]} \left(A+B \text{Tan}[c+d x]\right) \, dx$$

Optimal (type 6, 187 leaves, 7 steps):

$$\left(\left(A+i B\right) \text{AppellF1}\left[1+m, -\frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(2 d \left(1+m\right) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) + \left(\left(A-i B\right) \text{AppellF1}\left[1+m, -\frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{a+b \text{Tan}[c+d x]}\right) \Big/ \left(2 d \left(1+m\right) \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right)$$

Result (type 8, 35 leaves):

$$\int \text{Tan}[c+d x]^m \sqrt{a+b \text{Tan}[c+d x]} \left(A+B \text{Tan}[c+d x]\right) \, dx$$

Problem 490: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Optimal (type 6, 187 leaves, 7 steps):

$$\left((A+i B) \text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)+\left((A-i B) \text{AppellF1}\left[1+m, \frac{1}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Problem 491: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^{3/2}} \, dx$$

Optimal (type 6, 193 leaves, 7 steps):

$$\left((A+i B) \text{AppellF1}\left[1+m, \frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)+\left((A-i B) \text{AppellF1}\left[1+m, \frac{3}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^{3/2}} \, dx$$

Problem 492: Unable to integrate problem.

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 6, 193 leaves, 7 steps):

$$\left((A+i B) \text{AppellF1}\left[1+m, \frac{5}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a^2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right) + \left((A-i B) \text{AppellF1}\left[1+m, \frac{5}{2}, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} \sqrt{1+\frac{b \text{Tan}[c+d x]}{a}}\right) \Big/ \left(2 a^2 d (1+m) \sqrt{a+b \text{Tan}[c+d x]}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{\text{Tan}[c+d x]^m (A+B \text{Tan}[c+d x])}{(a+b \text{Tan}[c+d x])^{5/2}} \, dx$$

Problem 493: Unable to integrate problem.

$$\int \text{Tan}[c+d x]^m (a+b \text{Tan}[c+d x])^n (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 6, 183 leaves, 7 steps):

$$\frac{1}{2 d (1+m)} (A+i B) \text{AppellF1}\left[1+m, -n, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, -i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} (a+b \text{Tan}[c+d x])^n \left(1+\frac{b \text{Tan}[c+d x]}{a}\right)^{-n} + \frac{1}{2 d (1+m)} (A-i B) \text{AppellF1}\left[1+m, -n, 1, 2+m, -\frac{b \text{Tan}[c+d x]}{a}, i \text{Tan}[c+d x]\right] \text{Tan}[c+d x]^{1+m} (a+b \text{Tan}[c+d x])^n \left(1+\frac{b \text{Tan}[c+d x]}{a}\right)^{-n}$$

Result (type 8, 33 leaves):

$$\int \text{Tan}[c+d\,x]^m\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Problem 494: Unable to integrate problem.

$$\int \text{Tan}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 387 leaves, 9 steps):

$$-\left(\left(\left(A\,b^3\,(2+n)\,(3+n)\,(4+n)-a\,\left(b^2\,B\,(3+n)\,(4+n)-2\,a\,(3\,a\,B-A\,b\,(4+n))\right)\right)\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(b^4\,d\,(1+n)\,(2+n)\,(3+n)\,(4+n)\right)\right)+\left((A-i\,B)\,\text{Hypergeometric2F1}\left[1,\,1+n,\,2+n,\,\frac{a+b\,\text{Tan}[c+d\,x]}{a-i\,b}\right]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\,(i\,a+b)\,d\,(1+n)\right)-\left((A+i\,B)\,\text{Hypergeometric2F1}\left[1,\,1+n,\,2+n,\,\frac{a+b\,\text{Tan}[c+d\,x]}{a+i\,b}\right]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\,(i\,a-b)\,d\,(1+n)\right)-\left(\left(b^2\,B\,(3+n)\,(4+n)-2\,a\,(3\,a\,B-A\,b\,(4+n))\right)\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(b^3\,d\,(2+n)\,(3+n)\,(4+n)\right)-\frac{(3\,a\,B-A\,b\,(4+n))\,\text{Tan}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{b^2\,d\,(3+n)\,(4+n)}+\frac{B\,\text{Tan}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{b\,d\,(4+n)}$$

Result (type 8, 33 leaves):

$$\int \text{Tan}[c+d\,x]^4\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Problem 495: Result more than twice size of optimal antiderivative.

$$\int \text{Tan}[c+d\,x]^3\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 291 leaves, 8 steps):

$$\frac{\left(2\,a^2\,B-a\,A\,b\,(3+n)-b^2\,B\,(6+5\,n+n^2)\right)\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{b^3\,d\,(1+n)\,(2+n)\,(3+n)}+\left((i\,A+B)\,\text{Hypergeometric2F1}\left[1,\,1+n,\,2+n,\,\frac{a+b\,\text{Tan}[c+d\,x]}{a-i\,b}\right]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\,(i\,a+b)\,d\,(1+n)\right)+\left((A+i\,B)\,\text{Hypergeometric2F1}\left[1,\,1+n,\,2+n,\,\frac{a+b\,\text{Tan}[c+d\,x]}{a+i\,b}\right]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}\right)\Big/\left(2\,(a+i\,b)\,d\,(1+n)\right)-\frac{(2\,a\,B-A\,b\,(3+n))\,\text{Tan}[c+d\,x]\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{b^2\,d\,(2+n)\,(3+n)}+\frac{B\,\text{Tan}[c+d\,x]^2\,(a+b\,\text{Tan}[c+d\,x])^{1+n}}{b\,d\,(3+n)}$$

Result (type 5, 671 leaves):

$$\frac{1}{2\,b^3\,d\,n\,(1+n)\,(2+n)\,(3+n)\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}\mathrm{Cos}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^n$$
$$(A+B\,\mathrm{Tan}[c+d\,x])\left(4\,a^3\,B\,n-2\,a^2\,A\,b\,n\,(3+n)-2\,a\,b^2\,B\,n\,(2+n)\,(3+n)-4\,a^2\,b\,B\,n^2\,\mathrm{Tan}[c+d\,x]+\right.$$
$$2\,a\,A\,b^2\,n^2\,(3+n)\,\mathrm{Tan}[c+d\,x]-2\,b^3\,B\,n\,(2+n)\,(3+n)\,\mathrm{Tan}[c+d\,x]+2\,a\,b^2\,B\,n^2\,\mathrm{Tan}[c+d\,x]^2+$$
$$2\,a\,b^2\,B\,n^3\,\mathrm{Tan}[c+d\,x]^2+2\,A\,b^3\,n\,(3+n)\,\mathrm{Tan}[c+d\,x]^2+2\,A\,b^3\,n^2\,(3+n)\,\mathrm{Tan}[c+d\,x]^2+$$
$$4\,b^3\,B\,n\,\mathrm{Tan}[c+d\,x]^3+6\,b^3\,B\,n^2\,\mathrm{Tan}[c+d\,x]^3+2\,b^3\,B\,n^3\,\mathrm{Tan}[c+d\,x]^3-$$
$$A\,b^3\,(1+n)\,(2+n)\,(3+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]$$
$$\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\,(-i+\mathrm{Tan}[c+d\,x])}\right)^{-n}-i\,b^3\,B\,(1+n)\,(2+n)\,(3+n)$$
$$\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\,(-i+\mathrm{Tan}[c+d\,x])}\right)^{-n}-$$
$$A\,b^3\,(1+n)\,(2+n)\,(3+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]$$
$$\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}+i\,b^3\,B\,(1+n)\,(2+n)\,(3+n)$$
$$\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}-$$
$$\left.4\,a^3\,B\,n\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}+2\,a^2\,A\,b\,n\,(3+n)\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}\right)$$

Problem 496: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Tan}[c+d\,x]^2\,(a+b\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 5, 219 leaves, 7 steps):

$$-\frac{(a\,B-A\,b\,(2+n))\,(a+b\,\mathrm{Tan}[c+d\,x])^{1+n}}{b^2\,d\,(1+n)\,(2+n)}+$$
$$\left((i\,A+B)\,\mathrm{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\mathrm{Tan}[c+d\,x]}{a-i\,b}\right]\,(a+b\,\mathrm{Tan}[c+d\,x])^{1+n}\right)\Big/$$
$$(2\,(a-i\,b)\,d\,(1+n))+$$
$$\left((A+i\,B)\,\mathrm{Hypergeometric2F1}\left[1,1+n,2+n,\frac{a+b\,\mathrm{Tan}[c+d\,x]}{a+i\,b}\right]\,(a+b\,\mathrm{Tan}[c+d\,x])^{1+n}\right)\Big/$$
$$(2\,(i\,a-b)\,d\,(1+n))+\frac{B\,\mathrm{Tan}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^{1+n}}{b\,d\,(2+n)}$$

Result (type 5, 495 leaves):

$$\frac{1}{2\,b^2\,d\,n\,(1+n)\,(2+n)\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])}\,\mathrm{Cos}[c+d\,x]\,(a+b\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])\,\Bigg(-2\,a^2\,B\,n+2\,a\,A\,b\,n\,(2+n)+2\,a\,b\,B\,n^2\,\mathrm{Tan}[c+d\,x]+2\,A\,b^2\,n\,(2+n)\,\mathrm{Tan}[c+d\,x]+2\,b^2\,B\,n\,\mathrm{Tan}[c+d\,x]^2+2\,b^2\,B\,n^2\,\mathrm{Tan}[c+d\,x]^2+i\,A\,b^2\,(1+n)\,(2+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\,(-i+\mathrm{Tan}[c+d\,x])}\right)^{-n}-b^2\,B\,(1+n)\,(2+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,\frac{a+i\,b}{i\,b-b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{b\,(-i+\mathrm{Tan}[c+d\,x])}\right)^{-n}-i\,A\,b^2\,(1+n)\,(2+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}-b^2\,B\,(1+n)\,(2+n)\,\mathrm{Hypergeometric2F1}\left[-n,-n,1-n,-\frac{a-i\,b}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right]\left(\frac{a+b\,\mathrm{Tan}[c+d\,x]}{i\,b+b\,\mathrm{Tan}[c+d\,x]}\right)^{-n}+2\,a^2\,B\,n\left(1+\frac{b\,\mathrm{Tan}[c+d\,x]}{a}\right)^{-n}\Bigg)$$

Problem 507: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\,a\,\mathrm{Tan}[c+d\,x])\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 105 leaves, 6 steps):

$$-\frac{2\,(-1)^{1/4}\,a\,(i\,A+B)\,\mathrm{ArcTanh}\left[(-1)^{3/4}\sqrt{\mathrm{Cot}[c+d\,x]}\right]}{d}+\frac{2\,i\,a\,B}{5\,d\,\mathrm{Cot}[c+d\,x]^{5/2}}+\frac{2\,a\,(i\,A+B)}{3\,d\,\mathrm{Cot}[c+d\,x]^{3/2}}+\frac{2\,a\,(A-i\,B)}{d\,\sqrt{\mathrm{Cot}[c+d\,x]}}$$

Result (type 3, 362 leaves):

$$a\left(\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\right.$$
$$\sqrt{\text{Cot}[c+d\,x]}\,(i+\text{Cot}[c+d\,x])\,(B+A\,\text{Cot}[c+d\,x])$$
$$\left(\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\left(\frac{2\,\text{Cos}[c]}{15}-\frac{2}{15}\,i\,\text{Sin}[c]\right)(5\,i\,A\,\text{Cos}[c]+5\,B\,\text{Cos}[c]+3\,i\,B\,\text{Sin}[c])\,+\right.$$
$$\text{Sec}[c]\left(\frac{2\,\text{Cos}[c]}{15}-\frac{2}{15}\,i\,\text{Sin}[c]\right)(-5\,i\,A\,\text{Cos}[c]-5\,B\,\text{Cos}[c]+15\,A\,\text{Sin}[c]-18\,i\,B\,\text{Sin}[c])\,+$$
$$i\,B\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{2\,\text{Cos}[c]}{5}-\frac{2}{5}\,i\,\text{Sin}[c]\right)\text{Sin}[d\,x]\,+$$
$$\left.\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{2\,\text{Cos}[c]}{5}-\frac{2}{5}\,i\,\text{Sin}[c]\right)(5\,A\,\text{Sin}[d\,x]-6\,i\,B\,\text{Sin}[d\,x])\right)\text{Sin}[c+d\,x]^2\,+$$
$$\left((i\,A+B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\sqrt{\text{Cot}[c+d\,x]}\,(i+\text{Cot}[c+d\,x])\,(B+A\,\text{Cot}[c+d\,x])\right.$$
$$\left.(\text{Cos}[c]-i\,\text{Sin}[c])\,\text{Sin}[c+d\,x]^2\sqrt{i\,\text{Tan}[c+d\,x]}\right)\Big/$$
$$\left.\left(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)\right)$$

Problem 508: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{7/2}\,(a+i\,a\,\text{Tan}[c+d\,x])^2\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 128 leaves, 6 steps):

$$\frac{4\,(-1)^{1/4}\,a^2\,(A-i\,B)\,\text{ArcTanh}\left[(-1)^{3/4}\sqrt{\text{Cot}[c+d\,x]}\right]}{d}+\frac{4\,a^2\,(A-i\,B)\,\sqrt{\text{Cot}[c+d\,x]}}{d}-$$
$$\frac{2\,a^2\,(7\,i\,A+5\,B)\,\text{Cot}[c+d\,x]^{3/2}}{15\,d}-\frac{2\,A\,\text{Cot}[c+d\,x]^{3/2}\,(i\,a^2+a^2\,\text{Cot}[c+d\,x])}{5\,d}$$

Result (type 3, 330 leaves):

$$a^2\left(\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\sqrt{\text{Cot}[c+d\,x]}\,(i+\text{Cot}[c+d\,x])^2\right.$$
$$(B+A\,\text{Cot}[c+d\,x])\left(\text{Csc}[c]\,(-10\,i\,A\,\text{Cos}[c]-5\,B\,\text{Cos}[c]+33\,A\,\text{Sin}[c]-30\,i\,B\,\text{Sin}[c])\right.$$
$$\left(\frac{2}{15}\,\text{Cos}[2\,c]-\frac{2}{15}\,i\,\text{Sin}[2\,c]\right)+\text{Csc}[c+d\,x]^2\left(-\frac{2}{5}\,A\,\text{Cos}[2\,c]+\frac{2}{5}\,i\,A\,\text{Sin}[2\,c]\right)+\text{Csc}[c]$$
$$\left.\text{Csc}[c+d\,x]\left(\frac{2}{3}\,\text{Cos}[2\,c]-\frac{2}{3}\,i\,\text{Sin}[2\,c]\right)(2\,i\,A\,\text{Sin}[d\,x]+B\,\text{Sin}[d\,x])\right)\text{Sin}[c+d\,x]^3\,+$$
$$\left(2\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right](i+\text{Cot}[c+d\,x])^2\,(B+A\,\text{Cot}[c+d\,x])\right.$$
$$\left.(\text{Cos}[2\,c]-i\,\text{Sin}[2\,c])\,\text{Sin}[c+d\,x]^3\right)\Big/$$
$$\left.\left(d\,\text{Cot}[c+d\,x]^{3/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(i\,\text{Tan}[c+d\,x])^{3/2}\right)\right)$$

Problem 513: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{9/2} \left(a+i a \text{Tan}[c+d x]\right)^3 \left(A+B \text{Tan}[c+d x]\right) dx$$

Optimal (type 3, 171 leaves, 7 steps):

$$\frac{8 (-1)^{1/4} a^3 (i A+B) \text{ArcTanh}\left[(-1)^{3/4} \sqrt{\text{Cot}[c+d x]}\right]}{d}+\frac{8 a^3 (i A+B) \sqrt{\text{Cot}[c+d x]}}{d}+\frac{8 a^3 (23 A-21 i B) \text{Cot}[c+d x]^{3/2}}{105 d}-\frac{2 a A \text{Cot}[c+d x]^{3/2} \left(i a+a \text{Cot}[c+d x]\right)^2}{7 d}-\frac{2 (11 i A+7 B) \text{Cot}[c+d x]^{3/2} \left(i a^3+a^3 \text{Cot}[c+d x]\right)}{35 d}$$

Result (type 3, 384 leaves):

$$a^3 \left(\frac{1}{d \left(\text{Cos}[d x]+i \text{Sin}[d x]\right)^3 \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right)} \sqrt{\text{Cot}[c+d x]} \left(i+\text{Cot}[c+d x]\right)^3 \left(B+A \text{Cot}[c+d x]\right) \left(\text{Csc}[c] \left(155 A \text{Cos}[c]-105 i B \text{Cos}[c]+483 i A \text{Sin}[c]+441 B \text{Sin}[c]\right) \left(\frac{2}{105} \text{Cos}[3 c]-\frac{2}{105} i \text{Sin}[3 c]\right)+\text{Csc}[c] \text{Csc}[c+d x]^2 \left(5 A \text{Cos}[c]+21 i A \text{Sin}[c]+7 B \text{Sin}[c]\right) \left(-\frac{2}{35} \text{Cos}[3 c]+\frac{2}{35} i \text{Sin}[3 c]\right)+A \text{Csc}[c] \text{Csc}[c+d x]^3 \left(\frac{2}{7} \text{Cos}[3 c]-\frac{2}{7} i \text{Sin}[3 c]\right) \text{Sin}[d x]+\text{Csc}[c] \text{Csc}[c+d x] \left(-\frac{2}{21} \text{Cos}[3 c]+\frac{2}{21} i \text{Sin}[3 c]\right) \left(31 A \text{Sin}[d x]-21 i B \text{Sin}[d x]\right)\right) \text{Sin}[c+d x]^4+\left(4 (A-i B) \text{ArcCosh}\left[e^{2 i (c+d x)}\right] \left(i+\text{Cot}[c+d x]\right)^3 \left(B+A \text{Cot}[c+d x]\right) \left(\text{Cos}[3 c]-i \text{Sin}[3 c]\right) \text{Sin}[c+d x]^4\right) \Big/ \left(d \sqrt{\text{Cot}[c+d x]} \left(\text{Cos}[d x]+i \text{Sin}[d x]\right)^3 \left(A \text{Cos}[c+d x]+B \text{Sin}[c+d x]\right) \sqrt{i \text{Tan}[c+d x]}\right)\right)$$

Problem 518: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+i a \text{Tan}[c+d x]\right)^3 \left(A+B \text{Tan}[c+d x]\right)}{\sqrt{\text{Cot}[c+d x]}} dx$$

Optimal (type 3, 173 leaves, 7 steps):

$$\frac{8 (-1)^{1/4} a^3 (A-i B) \text{ArcTanh}\left[(-1)^{3/4} \sqrt{\text{Cot}[c+d x]}\right]}{d}-\frac{8 a^3 (21 A-23 i B)}{105 d \text{Cot}[c+d x]^{3/2}}+\frac{8 a^3 (i A+B)}{d \sqrt{\text{Cot}[c+d x]}}+\frac{2 i a B \left(i a+a \text{Cot}[c+d x]\right)^2}{7 d \text{Cot}[c+d x]^{7/2}}-\frac{2 (7 A-11 i B) \left(i a^3+a^3 \text{Cot}[c+d x]\right)}{35 d \text{Cot}[c+d x]^{5/2}}$$

Result (type 3, 433 leaves):

$$a^3 \left(\frac{1}{d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])}\sqrt{\text{Cot}[c+d\,x]}\,(i+\text{Cot}[c+d\,x])^3\right.$$
$$(B+A\,\text{Cot}[c+d\,x])\,\Big(\text{Sec}[c]\,(105\,A\,\text{Cos}[c]-155\,i\,B\,\text{Cos}[c]+441\,i\,A\,\text{Sin}[c]+483\,B\,\text{Sin}[c])$$
$$\left(\frac{2}{105}\text{Cos}[3\,c]-\frac{2}{105}i\,\text{Sin}[3\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(105\,A\,\text{Cos}[c]-170\,i\,B\,\text{Cos}[c]+21\,i\,A\,\text{Sin}[c]+63\,B\,\text{Sin}[c])$$
$$\left(-\frac{2}{105}\text{Cos}[3\,c]+\frac{2}{105}i\,\text{Sin}[3\,c]\right)+\text{Sec}[c+d\,x]^4\left(-\frac{2}{7}i\,B\,\text{Cos}[3\,c]-\frac{2}{7}B\,\text{Sin}[3\,c]\right)+$$
$$\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{2}{5}\text{Cos}[3\,c]-\frac{2}{5}i\,\text{Sin}[3\,c]\right)(-i\,A\,\text{Sin}[d\,x]-3\,B\,\text{Sin}[d\,x])+\text{Sec}[c]$$
$$\text{Sec}[c+d\,x]\left(\frac{2}{5}\text{Cos}[3\,c]-\frac{2}{5}i\,\text{Sin}[3\,c]\right)(21\,i\,A\,\text{Sin}[d\,x]+23\,B\,\text{Sin}[d\,x])\Big)\,\text{Sin}[c+d\,x]^4-$$
$$\Big(4\,(A-i\,B)\,\text{ArcCosh}\left[e^{2\,i\,(c+d\,x)}\right]\sqrt{\text{Cot}[c+d\,x]}\,(i+\text{Cot}[c+d\,x])^3\,(B+A\,\text{Cot}[c+d\,x])$$
$$(\text{Cos}[3\,c]-i\,\text{Sin}[3\,c])\,\text{Sin}[c+d\,x]^4\sqrt{i\,\text{Tan}[c+d\,x]}\Big)\Big/$$
$$\left.\big(d\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\big)\right)$$

Problem 540: Unable to integrate problem.

$$\int \frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 192 leaves, 9 steps):

$$-\frac{1}{d}(-1)^{3/4}\sqrt{a}\,(2\,A-i\,B)\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-$$
$$\frac{1}{d}(1+i)\sqrt{a}\,(A-i\,B)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+$$
$$\frac{B\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}{d\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 8, 40 leaves):

$$\int \frac{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}\,(A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Problem 545: Result more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Cot}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 196 leaves, 9 steps):

$$-\frac{1}{d}(-1)^{3/4} a^{3/2} (2 i A+3 B) \text{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}+\frac{1}{d}(2-2 i) a^{3/2} (A-i B) \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}+\frac{i a B \sqrt{a+i a \text{Tan}[c+d x]}}{d \sqrt{\text{Cot}[c+d x]}}$$

Result (type 3, 485 leaves) :

$$\left(e^{-i (2 c+d x)} \sqrt{e^{i d x}} \sqrt{-1+e^{2 i (c+d x)}} \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}} \sqrt{\frac{i \left(1+e^{2 i (c+d x)}\right)}{-1+e^{2 i (c+d x)}}} \left(-16 i (A-i B) \text{Log}\left[e^{i (c+d x)}+\sqrt{-1+e^{2 i (c+d x)}}\right]+\sqrt{2} (2 i A+3 B) \left(\text{Log}\left[1-3 e^{2 i (c+d x)}-2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]-\text{Log}\left[1-3 e^{2 i (c+d x)}+2 \sqrt{2} e^{i (c+d x)} \sqrt{-1+e^{2 i (c+d x)}}\right]\right)\right) (a+i a \text{Tan}[c+d x])^{3/2} (A+B \text{Tan}[c+d x])\right) \Big/ \left(4 \sqrt{2} d \text{Sec}[c+d x]^{5/2} (\text{Cos}[d x]+i \text{Sin}[d x])^{3/2} (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)+\left(\text{Cos}[c+d x]^2 \sqrt{\text{Cot}[c+d x]} (i B \text{Sec}[c] \text{Sec}[c+d x] (\text{Cos}[c]-i \text{Sin}[c]) \text{Sin}[d x]+i (B \text{Cos}[c]-i B \text{Sin}[c]) \text{Tan}[c]) (a+i a \text{Tan}[c+d x])^{3/2} (A+B \text{Tan}[c+d x])\right) \Big/ \left(d (\text{Cos}[d x]+i \text{Sin}[d x]) (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right)$$

Problem 549: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{7/2} (a+i a \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 205 leaves, 7 steps) :

$$-\frac{1}{d}(4+4 i) a^{5/2} (A-i B) \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i a \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}+\frac{2 a^2 (38 A-35 i B) \sqrt{\text{Cot}[c+d x]} \sqrt{a+i a \text{Tan}[c+d x]}}{15 d}-\frac{2 a^2 (8 i A+5 B) \text{Cot}[c+d x]^{3/2} \sqrt{a+i a \text{Tan}[c+d x]}}{15 d}-\frac{2 a A \text{Cot}[c+d x]^{5/2} (a+i a \text{Tan}[c+d x])^{3/2}}{5 d}$$

Result (type 3, 416 leaves) :

$$-\left(\left(4\sqrt{2}\,(A-iB)\,e^{-i(3c+dx)}\sqrt{e^{idx}}\sqrt{-1+e^{2i(c+dx)}}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\sqrt{\frac{i\left(1+e^{2i(c+dx)}\right)}{-1+e^{2i(c+dx)}}}\right.\right.$$
$$\left.\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right](a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\right)\Big/$$
$$\left.\left(d\,\text{Sec}[c+dx]^{7/2}(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)\right)+$$
$$\left(\text{Cos}[c+dx]^3\sqrt{\text{Cot}[c+dx]}\left((13A-10iB)\left(\frac{8}{15}\text{Cos}[2c]-\frac{8}{15}i\,\text{Sin}[2c]\right)+\right.\right.$$
$$\text{Csc}[c+dx]^2\left(-\frac{2}{5}A\,\text{Cos}[2c]+\frac{2}{5}i\,A\,\text{Sin}[2c]\right)+(11A-5iB)\,\text{Csc}[c+dx]$$
$$\left.\left.\left(-\frac{2}{15}i\,\text{Cos}[3c+dx]-\frac{2}{15}\text{Sin}[3c+dx]\right)\right)(a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\right)\Big/$$
$$\left(d\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^2(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)$$

Problem 550: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+dx]^{5/2}(a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\,dx$$

Optimal (type 3, 230 leaves, 10 steps):

$$\frac{1}{d}2(-1)^{3/4}a^{5/2}B\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\sqrt{\text{Tan}[c+dx]}+\frac{1}{d}$$
$$(4+4i)\,a^{5/2}(iA+B)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\sqrt{\text{Tan}[c+dx]}-$$
$$\frac{2a^2(2iA+B)\sqrt{\text{Cot}[c+dx]}\sqrt{a+i\,a\,\text{Tan}[c+dx]}}{d}-\frac{2\,a\,A\,\text{Cot}[c+dx]^{3/2}(a+i\,a\,\text{Tan}[c+dx])^{3/2}}{3d}$$

Result (type 3, 496 leaves):

$$\Bigg(e^{-i(3c+dx)}\sqrt{e^{idx}}\sqrt{-1+e^{2i(c+dx)}}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}$$
$$\sqrt{\frac{i\left(1+e^{2i(c+dx)}\right)}{-1+e^{2i(c+dx)}}}\left(16(iA+B)\,\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right]+\right.$$
$$\sqrt{2}\,B\left(-\text{Log}\left[1-3e^{2i(c+dx)}-2\sqrt{2}\,e^{i(c+dx)}\sqrt{-1+e^{2i(c+dx)}}\right]+\right.$$
$$\left.\left.\text{Log}\left[1-3e^{2i(c+dx)}+2\sqrt{2}\,e^{i(c+dx)}\sqrt{-1+e^{2i(c+dx)}}\right]\right)\right)$$
$$(a+i\,a\,\text{Tan}[c+dx])^{5/2}\,(A+B\,\text{Tan}[c+dx])\Bigg)\Big/\Big(2\sqrt{2}\,d\,\text{Sec}[c+dx]^{7/2}$$
$$(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\Big)+$$
$$\left(\text{Cos}[c+dx]^3\sqrt{\text{Cot}[c+dx]}\left((8A-3iB)\left(-\frac{2}{3}\,i\,\text{Cos}[2c]-\frac{2}{3}\,\text{Sin}[2c]\right)+\right.\right.$$
$$\left.\text{Csc}[c+dx]\left(-\frac{2}{3}\,A\,\text{Cos}[3c+dx]+\frac{2}{3}\,i\,A\,\text{Sin}[3c+dx]\right)\right)$$
$$\left.(a+i\,a\,\text{Tan}[c+dx])^{5/2}\,(A+B\,\text{Tan}[c+dx])\right)\Big/$$
$$\left(d\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^2\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)$$

Problem 551: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+dx]^{3/2}\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}\,(A+B\,\text{Tan}[c+dx])\,dx$$

Optimal (type 3, 236 leaves, 10 steps):

$$\frac{1}{d}(-1)^{3/4}a^{5/2}(2A-5iB)\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}+\frac{1}{d}$$
$$(4+4i)\,a^{5/2}(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}+$$
$$\frac{a^2(2iA-B)\sqrt{a+i\,a\,\text{Tan}[c+dx]}}{d\sqrt{\text{Cot}[c+dx]}}-\frac{2aA\sqrt{\text{Cot}[c+dx]}\,(a+i\,a\,\text{Tan}[c+dx])^{3/2}}{d}$$

Result (type 3, 496 leaves):

$$\left(e^{-i(3c+dx)}\sqrt{e^{idx}}\sqrt{-1+e^{2i(c+dx)}}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\right.$$

$$\sqrt{\frac{i\left(1+e^{2i(c+dx)}\right)}{-1+e^{2i(c+dx)}}}\left(32(A-iB)\,\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right]-\right.$$

$$\sqrt{2}\,(2A-5iB)\left(\text{Log}\left[1-3e^{2i(c+dx)}-2\sqrt{2}\,e^{i(c+dx)}\sqrt{-1+e^{2i(c+dx)}}\right]-\right.$$

$$\left.\left.\text{Log}\left[1-3e^{2i(c+dx)}+2\sqrt{2}\,e^{i(c+dx)}\sqrt{-1+e^{2i(c+dx)}}\right]\right)\right)$$

$$\left.(a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\right)\Big/\left(4\sqrt{2}\,d\,\text{Sec}[c+dx]^{7/2}\right.$$

$$\left.(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)+$$

$$\left(\text{Cos}[c+dx]^3\sqrt{\text{Cot}[c+dx]}\,(\text{Sec}[c]\,(2A\,\text{Cos}[c]+B\,\text{Sin}[c])\,(-\text{Cos}[2c]+i\,\text{Sin}[2c])-\right.$$

$$B\,\text{Sec}[c]\,\text{Sec}[c+dx]\,(\text{Cos}[2c]-i\,\text{Sin}[2c])\,\text{Sin}[dx])$$

$$\left.(a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\right)\Big/$$

$$\left(d\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^2(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\right)$$

Problem 552: Result more than twice size of optimal antiderivative.

$$\int\sqrt{\text{Cot}[c+dx]}\,(a+i\,a\,\text{Tan}[c+dx])^{5/2}(A+B\,\text{Tan}[c+dx])\,dx$$

Optimal (type 3, 246 leaves, 10 steps):

$$-\frac{1}{4d}(-1)^{3/4}a^{5/2}(20iA+23B)\,\text{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\sqrt{\text{Tan}[c+dx]}+$$

$$\frac{1}{d}(4-4i)\,a^{5/2}(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+i\,a\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\sqrt{\text{Tan}[c+dx]}-$$

$$\frac{a^2(4A-7iB)\sqrt{a+i\,a\,\text{Tan}[c+dx]}}{4d\sqrt{\text{Cot}[c+dx]}}+\frac{i\,a\,B\,(a+i\,a\,\text{Tan}[c+dx])^{3/2}}{2d\sqrt{\text{Cot}[c+dx]}}$$

Result (type 3, 606 leaves):

$$\left(\text{Cos}[c+d x]^3 \sqrt{\text{Cot}[c+d x]}\right.$$

$$\left(\text{Sec}[c] \left(2 B \,\text{Cos}[c]-4 A \,\text{Sin}[c]+9 \,i\, B \,\text{Sin}[c]\right) \left(\frac{1}{4} \text{Cos}[2 c]-\frac{1}{4} i \,\text{Sin}[2 c]\right)+\right.$$

$$\text{Sec}[c+d x]^2 \left(-\frac{1}{2} B \,\text{Cos}[2 c]+\frac{1}{2} i\, B \,\text{Sin}[2 c]\right)+$$

$$\left.\text{Sec}[c] \,\text{Sec}[c+d x] \left(\frac{1}{4} \text{Cos}[2 c]-\frac{1}{4} i \,\text{Sin}[2 c]\right) \left(-4 A \,\text{Sin}[d x]+9 \,i\, B \,\text{Sin}[d x]\right)\right)$$

$$\left.(a+i\, a \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])\right) \Big/$$

$$\left(d \left(\text{Cos}[d x]+i \,\text{Sin}[d x]\right)^2 \left(A \,\text{Cos}[c+d x]+B \,\text{Sin}[c+d x]\right)\right)+$$

$$\frac{1}{8 \sqrt{2}\, d \left(\text{Cos}[d x]+i \,\text{Sin}[d x]\right)^2 \left(A \,\text{Cos}[c+d x]+B \,\text{Sin}[c+d x]\right)}$$

$$\text{Cos}[c+d x]^3 \sqrt{\text{Cot}[c+d x]}$$

$$\left(\sqrt{2} \left(-20\, i\, A-23 B\right) \text{Log}\left[-\frac{2 e^{\frac{7 i c}{2}} \left(i \sqrt{2}+\sqrt{2}\, e^{i (c+d x)}-2 \sqrt{-1+e^{2 i (c+d x)}}\right)}{\left(20 A-23\, i\, B\right) \left(-i+e^{i (c+d x)}\right)}\right]+\right.$$

$$\sqrt{2} \left(20\, i\, A+23 B\right) \text{Log}\left[-\frac{2 e^{\frac{7 i c}{2}} \left(-i \sqrt{2}+\sqrt{2}\, e^{i (c+d x)}+2 \sqrt{-1+e^{2 i (c+d x)}}\right)}{\left(20 A-23\, i\, B\right) \left(i+e^{i (c+d x)}\right)}\right]-$$

$$64\, i\, (A-i\, B)\, \text{Log}\Big[\left(\text{Cos}[c]-i \,\text{Sin}[c]\right)$$

$$\left.\left(\text{Cos}[c+d x]+i \,\text{Sin}[c+d x]+\sqrt{-1+\text{Cos}[2 (c+d x)]+i \,\text{Sin}[2 (c+d x)]}\right)\Big]\right)$$

$$\sqrt{i \left(i+\text{Cot}[c+d x]\right) \text{Sin}[c+d x]^2}\, \left(\text{Cos}[3 c+d x]-i \,\text{Sin}[3 c+d x]\right)$$

$$(a+i\, a \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])$$

Problem 553: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\, a \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])}{\sqrt{\text{Cot}[c+d x]}} \, dx$$

Optimal (type 3, 292 leaves, 11 steps):

$$-\frac{1}{8 d} (-1)^{3/4} a^{5/2} (46 A-45\, i\, B)\, \text{ArcTan}\left[\frac{(-1)^{3/4} \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i\, a \,\text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}-$$

$$\frac{1}{d} (4+4\, i)\, a^{5/2} (A-i\, B)\, \text{ArcTanh}\left[\frac{(1+i) \sqrt{a} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+i\, a \,\text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}-$$

$$\frac{a^2 (2 A-3\, i\, B) \sqrt{a+i\, a \,\text{Tan}[c+d x]}}{4 d \,\text{Cot}[c+d x]^{3/2}}+$$

$$\frac{a^2 (18\, i\, A+19 B) \sqrt{a+i\, a \,\text{Tan}[c+d x]}}{8 d \sqrt{\text{Cot}[c+d x]}}+\frac{i\, a B (a+i\, a \,\text{Tan}[c+d x])^{3/2}}{3 d \,\text{Cot}[c+d x]^{3/2}}$$

Result (type 3, 666 leaves):

$$\frac{1}{d\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])^2\,(\text{A}\,\text{Cos}[c+d\,x]+\text{B}\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^3\sqrt{\text{Cot}[c+d\,x]}\,\Big(\text{Sec}[c]\,(12\,\text{A}\,\text{Cos}[c]-26\,\text{i}\,\text{B}\,\text{Cos}[c]+54\,\text{i}\,\text{A}\,\text{Sin}[c]+65\,\text{B}\,\text{Sin}[c])\left(\frac{1}{24}\text{Cos}[2\,c]-\frac{1}{24}\text{i}\,\text{Sin}[2\,c]\right)+\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(-6\,\text{A}\,\text{Cos}[c]+13\,\text{i}\,\text{B}\,\text{Cos}[c]-4\,\text{B}\,\text{Sin}[c])\left(\frac{1}{12}\text{Cos}[2\,c]-\frac{1}{12}\text{i}\,\text{Sin}[2\,c]\right)-\text{B}\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(\frac{1}{3}\text{Cos}[2\,c]-\frac{1}{3}\text{i}\,\text{Sin}[2\,c]\right)\text{Sin}[d\,x]+\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(\frac{1}{24}\text{Cos}[2\,c]-\frac{1}{24}\text{i}\,\text{Sin}[2\,c]\right)(54\,\text{i}\,\text{A}\,\text{Sin}[d\,x]+65\,\text{B}\,\text{Sin}[d\,x])\Big)(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}\,(\text{A}+\text{B}\,\text{Tan}[c+d\,x])-$$

$$\frac{1}{16\sqrt{2}\,d\,(\text{Cos}[d\,x]+\text{i}\,\text{Sin}[d\,x])^2\,(\text{A}\,\text{Cos}[c+d\,x]+\text{B}\,\text{Sin}[c+d\,x])}\text{Cos}[c+d\,x]^3\sqrt{\text{Cot}[c+d\,x]}\left(\sqrt{2}\,(46\,\text{A}-45\,\text{i}\,\text{B})\,\text{Log}\left[\frac{2\,e^{\frac{7\,\text{i}\,c}{2}}\left(\sqrt{2}-\text{i}\sqrt{2}\,e^{\text{i}\,(c+d\,x)}+2\,\text{i}\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\right)}{(46\,\text{A}-45\,\text{i}\,\text{B})\,(-\text{i}+e^{\text{i}\,(c+d\,x)})}\right]+\sqrt{2}\,(-46\,\text{A}+45\,\text{i}\,\text{B})\,\text{Log}\left[\frac{2\,e^{\frac{7\,\text{i}\,c}{2}}\left(-\text{i}\sqrt{2}+\sqrt{2}\,e^{\text{i}\,(c+d\,x)}+2\sqrt{-1+e^{2\,\text{i}\,(c+d\,x)}}\right)}{(46\,\text{i}\,\text{A}+45\,\text{B})\,(\text{i}+e^{\text{i}\,(c+d\,x)})}\right]+128\,(\text{A}-\text{i}\,\text{B})\,\text{Log}\Big[(\text{Cos}[c]-\text{i}\,\text{Sin}[c])\left(\text{Cos}[c+d\,x]+\text{i}\,\text{Sin}[c+d\,x]+\sqrt{-1+\text{Cos}[2\,(c+d\,x)]+\text{i}\,\text{Sin}[2\,(c+d\,x)]}\right)\Big]\right)\sqrt{\text{i}\,(\text{i}+\text{Cot}[c+d\,x])\,\text{Sin}[c+d\,x]^2}\,(\text{Cos}[3\,c+d\,x]-\text{i}\,\text{Sin}[3\,c+d\,x])\,(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}\,(\text{A}+\text{B}\,\text{Tan}[c+d\,x])$$

Problem 562: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^{3/2}\,(\text{A}+\text{B}\,\text{Tan}[c+d\,x])}{(a+\text{i}\,a\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 260 leaves, 8 steps):

$$\frac{1}{a^{5/2}\,d}\left(\frac{1}{8}+\frac{i}{8}\right)(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+ia\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}+\frac{(A+iB)\sqrt{\text{Cot}[c+dx]}}{5d\,(a+ia\,\text{Tan}[c+dx])^{5/2}}+\frac{(17A+7iB)\sqrt{\text{Cot}[c+dx]}}{30ad\,(a+ia\,\text{Tan}[c+dx])^{3/2}}+\frac{(151A+41iB)\sqrt{\text{Cot}[c+dx]}}{60a^2d\sqrt{a+ia\,\text{Tan}[c+dx]}}-\frac{(317A+67iB)\sqrt{\text{Cot}[c+dx]}\,\sqrt{a+ia\,\text{Tan}[c+dx]}}{60a^3d}$$

Result (type 3, 529 leaves):

$$\left((A-iB)\,e^{-i(-2c+dx)}\sqrt{e^{idx}}\,\sqrt{-1+e^{2i(c+dx)}}\,\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,\sqrt{\frac{i\left(1+e^{2i(c+dx)}\right)}{-1+e^{2i(c+dx)}}}\,\text{Log}\left[e^{i(c+dx)}+\sqrt{-1+e^{2i(c+dx)}}\right]\text{Sec}[c+dx]^{3/2}\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^{5/2}\,(A+B\,\text{Tan}[c+dx])\right)\Big/\left(4\sqrt{2}\,d\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+ia\,\text{Tan}[c+dx])^{5/2}\right)+\frac{1}{d\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+ia\,\text{Tan}[c+dx])^{5/2}}\sqrt{\text{Cot}[c+dx]}\,\text{Sec}[c+dx]^2\,(\text{Cos}[dx]+i\,\text{Sin}[dx])^3\left((13A+8iB)\,\text{Cos}[4dx]\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}i\,\text{Sin}[c]\right)+(97A+32iB)\,\text{Cos}[2dx]\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}i\,\text{Sin}[c]\right)+(463A+83iB)\left(-\frac{1}{120}\text{Cos}[3c]-\frac{1}{120}i\,\text{Sin}[3c]\right)+(A+iB)\,\text{Cos}[6dx]\left(\frac{1}{40}\text{Cos}[3c]-\frac{1}{40}i\,\text{Sin}[3c]\right)+(-97iA+32B)\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}i\,\text{Sin}[c]\right)\text{Sin}[2dx]+(-13iA+8B)\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}i\,\text{Sin}[c]\right)\text{Sin}[4dx]+(-iA+B)\left(\frac{1}{40}\text{Cos}[3c]-\frac{1}{40}i\,\text{Sin}[3c]\right)\text{Sin}[6dx]\right)(A+B\,\text{Tan}[c+dx])$$

Problem 563: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Cot}[c+dx]}\,(A+B\,\text{Tan}[c+dx])}{(a+ia\,\text{Tan}[c+dx])^{5/2}}\,dx$$

Optimal (type 3, 214 leaves, 7 steps):

$$\frac{1}{a^{5/2}\,d}\left(\frac{1}{8}-\frac{i}{8}\right)(A-iB)\,\text{ArcTanh}\left[\frac{(1+i)\sqrt{a}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+ia\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}+\frac{A+iB}{5d\sqrt{\text{Cot}[c+dx]}\,(a+ia\,\text{Tan}[c+dx])^{5/2}}+\frac{13A+3iB}{30ad\sqrt{\text{Cot}[c+dx]}\,(a+ia\,\text{Tan}[c+dx])^{3/2}}+\frac{67A-3iB}{60a^2d\sqrt{\text{Cot}[c+dx]}\,\sqrt{a+ia\,\text{Tan}[c+dx]}}$$

Result (type 3, 531 leaves):

$$-\left(\left(\left(i\,(A-i\,B)\,e^{-i\,(-2\,c+d\,x)}\,\sqrt{e^{i\,d\,x}}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\sqrt{\frac{i\,\left(1+e^{2\,i\,(c+d\,x)}\right)}{-1+e^{2\,i\,(c+d\,x)}}}\,\text{Log}\left[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\right]\,\text{Sec}[c+d\,x]^{3/2}\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(4\,\sqrt{2}\,d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}\right)\right)+$$

$$\frac{1}{d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^2\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])^3$$
$$\left((32\,i\,A+3\,B)\,\text{Cos}[2\,d\,x]\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}\,i\,\text{Sin}[c]\right)+(8\,A+3\,i\,B)\,\text{Cos}[4\,d\,x]\right.$$
$$\left(\frac{1}{60}\,i\,\text{Cos}[c]+\frac{\text{Sin}[c]}{60}\right)+(-83\,i\,A+3\,B)\left(\frac{1}{120}\,\text{Cos}[3\,c]+\frac{1}{120}\,i\,\text{Sin}[3\,c]\right)+$$
$$(A+i\,B)\,\text{Cos}[6\,d\,x]\left(\frac{1}{40}\,i\,\text{Cos}[3\,c]+\frac{1}{40}\,\text{Sin}[3\,c]\right)+(32\,A-3\,i\,B)$$
$$\left(\frac{\text{Cos}[c]}{60}+\frac{1}{60}\,i\,\text{Sin}[c]\right)\text{Sin}[2\,d\,x]+(8\,A+3\,i\,B)\left(\frac{\text{Cos}[c]}{60}-\frac{1}{60}\,i\,\text{Sin}[c]\right)\text{Sin}[4\,d\,x]+$$
$$\left.(A+i\,B)\left(\frac{1}{40}\,\text{Cos}[3\,c]-\frac{1}{40}\,i\,\text{Sin}[3\,c]\right)\text{Sin}[6\,d\,x]\right)\,(A+B\,\text{Tan}[c+d\,x])$$

Problem 564: Result more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Cot}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 216 leaves, 7 steps):

$$-\frac{1}{a^{5/2}\,d}\left(\frac{1}{8}+\frac{i}{8}\right)(A-i\,B)\,\text{ArcTanh}\left[\frac{(1+i)\,\sqrt{a}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+$$
$$\frac{i\,A-B}{5\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{5/2}}+$$
$$\frac{3\,i\,A+7\,B}{30\,a\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+i\,a\,\text{Tan}[c+d\,x])^{3/2}}-\frac{3\,i\,A-13\,B}{60\,a^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+i\,a\,\text{Tan}[c+d\,x]}}$$

Result (type 3, 529 leaves):

$$-\left(\left(\left((A - i B)\, e^{-i(-2c+dx)} \sqrt{e^{i d x}} \sqrt{-1 + e^{2i(c+dx)}} \sqrt{\frac{e^{i(c+dx)}}{1 + e^{2i(c+dx)}}} \sqrt{\frac{i\left(1 + e^{2i(c+dx)}\right)}{-1 + e^{2i(c+dx)}}}\, \text{Log}\left[e^{i(c+dx)} + \sqrt{-1 + e^{2i(c+dx)}}\right] \text{Sec}[c + d x]^{3/2} (\text{Cos}[d x] + i\, \text{Sin}[d x])^{5/2} (A + B\, \text{Tan}[c + d x])\right) \Big/ \left(4\sqrt{2}\, d\, (A\, \text{Cos}[c + d x] + B\, \text{Sin}[c + d x])\, (a + i\, a\, \text{Tan}[c + d x])^{5/2}\right)\right)\right) +$$

$$\frac{1}{d\, (A\, \text{Cos}[c + d x] + B\, \text{Sin}[c + d x])\, (a + i\, a\, \text{Tan}[c + d x])^{5/2}} \sqrt{\text{Cot}[c + d x]}\, \text{Sec}[c + d x]^2 (\text{Cos}[d x] + i\, \text{Sin}[d x])^3 \left((3 A - 2 i B)\, \text{Cos}[4 d x] \left(-\frac{\text{Cos}[c]}{60} + \frac{1}{60} i\, \text{Sin}[c]\right) + (3 A + 8 i B)\, \text{Cos}[2 d x] \left(\frac{\text{Cos}[c]}{60} + \frac{1}{60} i\, \text{Sin}[c]\right) + (3 A - 17 i B) \left(\frac{1}{120} \text{Cos}[3 c] + \frac{1}{120} i\, \text{Sin}[3 c]\right) + (A + i B)\, \text{Cos}[6 d x] \left(-\frac{1}{40} \text{Cos}[3 c] + \frac{1}{40} i\, \text{Sin}[3 c]\right) + (-3 i A + 8 B) \left(\frac{\text{Cos}[c]}{60} + \frac{1}{60} i\, \text{Sin}[c]\right) \text{Sin}[2 d x] + (3 i A + 2 B) \left(\frac{\text{Cos}[c]}{60} - \frac{1}{60} i\, \text{Sin}[c]\right) \text{Sin}[4 d x] + (A + i B) \left(\frac{1}{40} i\, \text{Cos}[3 c] + \frac{1}{40} \text{Sin}[3 c]\right) \text{Sin}[6 d x]\right) (A + B\, \text{Tan}[c + d x])$$

Problem 565: Result more than twice size of optimal antiderivative.

$$\int \frac{A + B\, \text{Tan}[c + d x]}{\text{Cot}[c + d x]^{3/2} (a + i\, a\, \text{Tan}[c + d x])^{5/2}}\, dx$$

Optimal (type 3, 214 leaves, 7 steps):

$$\frac{1}{a^{5/2} d} \left(\frac{1}{8} + \frac{i}{8}\right) (i A + B)\, \text{ArcTanh}\left[\frac{(1 + i) \sqrt{a} \sqrt{\text{Tan}[c + d x]}}{\sqrt{a + i\, a\, \text{Tan}[c + d x]}}\right] \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Tan}[c + d x]} + \frac{i A - B}{5\, d\, \text{Cot}[c + d x]^{3/2} (a + i\, a\, \text{Tan}[c + d x])^{5/2}} + \frac{A + 11 i B}{30\, a\, d \sqrt{\text{Cot}[c + d x]}\, (a + i\, a\, \text{Tan}[c + d x])^{3/2}} + \frac{13 A - 37 i B}{60\, a^2 d \sqrt{\text{Cot}[c + d x]} \sqrt{a + i\, a\, \text{Tan}[c + d x]}}$$

Result (type 3, 529 leaves):

$$\left((\mathrm{i}\,A+B)\,e^{-\mathrm{i}\,(-2c+d x)}\sqrt{e^{\mathrm{i}\,d x}}\,\sqrt{-1+e^{2\mathrm{i}\,(c+d x)}}\,\sqrt{\frac{e^{\mathrm{i}\,(c+d x)}}{1+e^{2\mathrm{i}\,(c+d x)}}}\,\sqrt{\frac{\mathrm{i}\,\left(1+e^{2\mathrm{i}\,(c+d x)}\right)}{-1+e^{2\mathrm{i}\,(c+d x)}}}\,\mathrm{Log}\left[e^{\mathrm{i}\,(c+d x)}+\sqrt{-1+e^{2\mathrm{i}\,(c+d x)}}\right]\mathrm{Sec}[c+d x]^{3/2}\,(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d x])\right)\Big/$$

$$\left(4\sqrt{2}\,d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}\right)+$$

$$\frac{1}{d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}}\sqrt{\mathrm{Cot}[c+d x]}\,\mathrm{Sec}[c+d x]^2\,(\mathrm{Cos}[d x]+\mathrm{i}\,\mathrm{Sin}[d x])^3$$

$$\left((8\,\mathrm{i}\,A+17B)\,\mathrm{Cos}[2 d x]\left(\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\mathrm{i}\,\mathrm{Sin}[c]\right)+(2A+7\,\mathrm{i}\,B)\,\mathrm{Cos}[4 d x]\left(\frac{1}{60}\mathrm{i}\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{60}\right)+(-\mathrm{i}\,A+B)\,\mathrm{Cos}[6 d x]\left(\frac{1}{40}\mathrm{Cos}[3c]-\frac{1}{40}\mathrm{i}\,\mathrm{Sin}[3c]\right)+\right.$$

$$(17A-23\,\mathrm{i}\,B)\left(-\frac{1}{120}\mathrm{i}\,\mathrm{Cos}[3c]+\frac{1}{120}\mathrm{Sin}[3c]\right)+(8A-17\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\mathrm{i}\,\mathrm{Sin}[c]\right)$$

$$\mathrm{Sin}[2 d x]+(2A+7\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[c]}{60}-\frac{1}{60}\mathrm{i}\,\mathrm{Sin}[c]\right)\mathrm{Sin}[4 d x]+$$

$$\left.(A+\mathrm{i}\,B)\left(-\frac{1}{40}\mathrm{Cos}[3c]+\frac{1}{40}\mathrm{i}\,\mathrm{Sin}[3c]\right)\mathrm{Sin}[6 d x]\right)(A+B\,\mathrm{Tan}[c+d x])$$

Problem 566: Result more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d x]}{\mathrm{Cot}[c+d x]^{5/2}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 289 leaves, 11 steps):

$$\frac{2\,(-1)^{1/4}\,B\,\mathrm{ArcTan}\left[\frac{(-1)^{3/4}\sqrt{a}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{a^{5/2}\,d}+\frac{1}{a^{5/2}\,d}$$

$$\left(\frac{1}{8}+\frac{\mathrm{i}}{8}\right)(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{(1+\mathrm{i})\sqrt{a}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}+$$

$$\frac{\mathrm{i}\,A-B}{5\,d\,\mathrm{Cot}[c+d x]^{5/2}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{5/2}}+$$

$$\frac{A+3\,\mathrm{i}\,B}{6\,a\,d\,\mathrm{Cot}[c+d x]^{3/2}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x])^{3/2}}-\frac{\mathrm{i}\,A-7B}{4\,a^2\,d\,\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[c+d x]}}$$

Result (type 3, 646 leaves):

$$\frac{1}{4\sqrt{2}\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}$$
$$e^{-i\,(-2\,c+d\,x)}\sqrt{e^{i\,d\,x}}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\sqrt{\frac{i\,\left(1+e^{2\,i\,(c+d\,x)}\right)}{-1+e^{2\,i\,(c+d\,x)}}}$$
$$\Big((A-i\,B)\,\mathrm{Log}\Big[e^{i\,(c+d\,x)}+\sqrt{-1+e^{2\,i\,(c+d\,x)}}\Big]+2\,i\,\sqrt{2}\,B\,\Big(\mathrm{Log}\Big[1-3\,e^{2\,i\,(c+d\,x)}-2\,\sqrt{2}\,e^{i\,(c+d\,x)}$$
$$\sqrt{-1+e^{2\,i\,(c+d\,x)}}\Big]-\mathrm{Log}\Big[1-3\,e^{2\,i\,(c+d\,x)}+2\,\sqrt{2}\,e^{i\,(c+d\,x)}\,\sqrt{-1+e^{2\,i\,(c+d\,x)}}\Big]\Big)\Big)$$
$$\mathrm{Sec}[c+d\,x]^{3/2}\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])+$$
$$\frac{1}{d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^{5/2}}$$
$$\sqrt{\mathrm{Cot}[c+d\,x]}\,\mathrm{Sec}[c+d\,x]^2\,(\mathrm{Cos}[d\,x]+i\,\mathrm{Sin}[d\,x])^3$$
$$\Big((7\,A+12\,i\,B)\,\mathrm{Cos}[4\,d\,x]\,\Big(-\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,i\,\mathrm{Sin}[c]\Big)+(17\,A+72\,i\,B)\,\mathrm{Cos}[2\,d\,x]$$
$$\Big(\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,i\,\mathrm{Sin}[c]\Big)+(23\,A+123\,i\,B)\,\Big(-\frac{1}{120}\,\mathrm{Cos}[3\,c]-\frac{1}{120}\,i\,\mathrm{Sin}[3\,c]\Big)+$$
$$(A+i\,B)\,\mathrm{Cos}[6\,d\,x]\,\Big(\frac{1}{40}\,\mathrm{Cos}[3\,c]-\frac{1}{40}\,i\,\mathrm{Sin}[3\,c]\Big)+(-17\,i\,A+72\,B)$$
$$\Big(\frac{\mathrm{Cos}[c]}{60}+\frac{1}{60}\,i\,\mathrm{Sin}[c]\Big)\,\mathrm{Sin}[2\,d\,x]+(7\,A+12\,i\,B)\,\Big(\frac{1}{60}\,i\,\mathrm{Cos}[c]+\frac{\mathrm{Sin}[c]}{60}\Big)\,\mathrm{Sin}[4\,d\,x]+$$
$$(-i\,A+B)\,\Big(\frac{1}{40}\,\mathrm{Cos}[3\,c]-\frac{1}{40}\,i\,\mathrm{Sin}[3\,c]\Big)\,\mathrm{Sin}[6\,d\,x]\Big)\,(A+B\,\mathrm{Tan}[c+d\,x])$$

Problem 567: Unable to integrate problem.

$$\int \mathrm{Cot}[c+d\,x]^m\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 6, 179 leaves, 8 steps):

$$\frac{1}{d\,(1-m)}(A-i\,B)\,\mathrm{AppellF1}[1-m,1-n,1,2-m,-i\,\mathrm{Tan}[c+d\,x],i\,\mathrm{Tan}[c+d\,x]]$$
$$\mathrm{Cot}[c+d\,x]^{-1+m}\,(1+i\,\mathrm{Tan}[c+d\,x])^{-n}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^n+\frac{1}{d\,(1-m)}i\,B\,\mathrm{Cot}[c+d\,x]^{-1+m}$$
$$\mathrm{Hypergeometric2F1}[1-m,1-n,2-m,-i\,\mathrm{Tan}[c+d\,x]]\,(1+i\,\mathrm{Tan}[c+d\,x])^{-n}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^n$$

Result (type 8, 36 leaves):

$$\int \mathrm{Cot}[c+d\,x]^m\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Problem 568: Unable to integrate problem.

$$\int \mathrm{Cot}[c+d\,x]^{5/2}\,(a+i\,a\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 6, 247 leaves, 11 steps):

$$-\frac{2\,(3\,B+2\,i\,A\,n)\,\sqrt{Cot[c+d\,x]}\,\,(a+i\,a\,Tan[c+d\,x])^n}{3\,d}-\frac{2\,A\,Cot[c+d\,x]^{3/2}\,(a+i\,a\,Tan[c+d\,x])^n}{3\,d}-$$
$$\frac{1}{d\,\sqrt{Cot[c+d\,x]}}2\,(A-i\,B)\,AppellF1\left[\frac{1}{2},1-n,1,\frac{3}{2},-i\,Tan[c+d\,x],i\,Tan[c+d\,x]\right]$$
$$(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n-$$
$$\left(2\,(1-2\,n)\,(3\,i\,B-2\,A\,n)\,Hypergeometric2F1\left[\frac{1}{2},1-n,\frac{3}{2},-i\,Tan[c+d\,x]\right]\right.$$
$$\left.(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n\right)\Big/\left(3\,d\,\sqrt{Cot[c+d\,x]}\right)$$

Result (type 8, 38 leaves):

$$\int Cot[c+d\,x]^{5/2}\,(a+i\,a\,Tan[c+d\,x])^n\,(A+B\,Tan[c+d\,x])\,dx$$

Problem 569: Unable to integrate problem.

$$\int Cot[c+d\,x]^{3/2}\,(a+i\,a\,Tan[c+d\,x])^n\,(A+B\,Tan[c+d\,x])\,dx$$

Optimal (type 6, 194 leaves, 10 steps):

$$-\frac{2\,A\,\sqrt{Cot[c+d\,x]}\,\,(a+i\,a\,Tan[c+d\,x])^n}{d}+\frac{1}{d\,\sqrt{Cot[c+d\,x]}}$$
$$2\,(i\,A+B)\,AppellF1\left[\frac{1}{2},1-n,1,\frac{3}{2},-i\,Tan[c+d\,x],i\,Tan[c+d\,x]\right]$$
$$(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n-\frac{1}{d\,\sqrt{Cot[c+d\,x]}}2\,i\,A\,(1-2\,n)$$
$$Hypergeometric2F1\left[\frac{1}{2},1-n,\frac{3}{2},-i\,Tan[c+d\,x]\right]\,(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n$$

Result (type 8, 38 leaves):

$$\int Cot[c+d\,x]^{3/2}\,(a+i\,a\,Tan[c+d\,x])^n\,(A+B\,Tan[c+d\,x])\,dx$$

Problem 570: Unable to integrate problem.

$$\int \sqrt{Cot[c+d\,x]}\,\,(a+i\,a\,Tan[c+d\,x])^n\,(A+B\,Tan[c+d\,x])\,dx$$

Optimal (type 6, 158 leaves, 9 steps):

$$\frac{1}{d\,\sqrt{Cot[c+d\,x]}}2\,(A-i\,B)\,AppellF1\left[\frac{1}{2},1-n,1,\frac{3}{2},-i\,Tan[c+d\,x],i\,Tan[c+d\,x]\right]$$
$$(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n+\frac{1}{d\,\sqrt{Cot[c+d\,x]}}$$
$$2\,i\,B\,Hypergeometric2F1\left[\frac{1}{2},1-n,\frac{3}{2},-i\,Tan[c+d\,x]\right]\,(1+i\,Tan[c+d\,x])^{-n}\,(a+i\,a\,Tan[c+d\,x])^n$$

Result (type 8, 38 leaves):

$$\int \sqrt{\text{Cot}[c+d\,x]}\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Problem 571: Unable to integrate problem.

$$\int \frac{\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 6, 215 leaves, 10 steps):

$$\frac{2\,B\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n}{d\,(1+2\,n)\,\sqrt{\text{Cot}[c+d\,x]}}-\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}2\,(\mathbb{i}\,A+B)\,\text{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-\mathbb{i}\,\text{Tan}[c+d\,x],\mathbb{i}\,\text{Tan}[c+d\,x]\right]\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)^{-n}\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n+\left(2\,\left(2\,B\,n+\mathbb{i}\,A\,(1+2\,n)\right)\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-\mathbb{i}\,\text{Tan}[c+d\,x]\right]\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)^{-n}\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\right)\Big/\left(d\,(1+2\,n)\,\sqrt{\text{Cot}[c+d\,x]}\right)$$

Result (type 8, 38 leaves):

$$\int \frac{\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Problem 572: Unable to integrate problem.

$$\int \frac{\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\text{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 6, 291 leaves, 11 steps):

$$\frac{2\,B\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n}{d\,(3+2\,n)\,\text{Cot}[c+d\,x]^{3/2}}-\frac{2\,\left(2\,\mathbb{i}\,B\,n-A\,(3+2\,n)\right)\,\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n}{d\,(1+2\,n)\,(3+2\,n)\,\sqrt{\text{Cot}[c+d\,x]}}-\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}2\,(A-\mathbb{i}\,B)\,\text{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-\mathbb{i}\,\text{Tan}[c+d\,x],\mathbb{i}\,\text{Tan}[c+d\,x]\right]\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)^{-n}\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n+\left(2\,\left(2\,A\,n\,(3+2\,n)-\mathbb{i}\,B\,\left(3+6\,n+4\,n^2\right)\right)\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-\mathbb{i}\,\text{Tan}[c+d\,x]\right]\left(1+\mathbb{i}\,\text{Tan}[c+d\,x]\right)^{-n}\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\right)\Big/\left(d\,(1+2\,n)\,(3+2\,n)\,\sqrt{\text{Cot}[c+d\,x]}\right)$$

Result (type 8, 38 leaves):

$$\int \frac{\left(a+\mathbb{i}\,a\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\text{Cot}[c+d\,x]^{3/2}}\,dx$$

Problem 573: Unable to integrate problem.

$$\int \frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Cot}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 6, 383 leaves, 12 steps):

$$\frac{2\,B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n}{d\,(5+2\,n)\,\mathrm{Cot}[c+d\,x]^{5/2}}-\frac{2\,(2\,\mathrm{i}\,B\,n-A\,(5+2\,n))\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n}{d\,(3+2\,n)\,(5+2\,n)\,\mathrm{Cot}[c+d\,x]^{3/2}}-\frac{2\,(2\,\mathrm{i}\,A\,n\,(5+2\,n)+B\,(15+10\,n+4\,n^2))\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n}{d\,(1+2\,n)\,(3+2\,n)\,(5+2\,n)\,\sqrt{\mathrm{Cot}[c+d\,x]}}+\frac{1}{d\,\sqrt{\mathrm{Cot}[c+d\,x]}}2\,(\mathrm{i}\,A+B)\,\mathrm{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},-\mathrm{i}\,\mathrm{Tan}[c+d\,x],\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]\,(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x])^{-n}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n-\left(2\,(4\,B\,n\,(9+8\,n+2\,n^2)+\mathrm{i}\,A\,(15+36\,n+32\,n^2+8\,n^3))\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},-\mathrm{i}\,\mathrm{Tan}[c+d\,x]\right]\,(1+\mathrm{i}\,\mathrm{Tan}[c+d\,x])^{-n}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n\right)\Big/\left(d\,(1+2\,n)\,(3+2\,n)\,(5+2\,n)\,\sqrt{\mathrm{Cot}[c+d\,x]}\right)$$

Result (type 8, 38 leaves):

$$\int \frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[c+d\,x])^n\,(A+B\,\mathrm{Tan}[c+d\,x])}{\mathrm{Cot}[c+d\,x]^{5/2}}\,dx$$

Problem 589: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Cot}[c+d\,x]^{5/2}\,(A+B\,\mathrm{Tan}[c+d\,x])}{a+b\,\mathrm{Tan}[c+d\,x]}\,dx$$

Optimal (type 3, 325 leaves, 17 steps):

$$\frac{(b\,(A-B)-a\,(A+B))\,\mathrm{ArcTan}\left[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\right]}{\sqrt{2}\,(a^2+b^2)\,d}-\frac{(b\,(A-B)-a\,(A+B))\,\mathrm{ArcTan}\left[1+\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\right]}{\sqrt{2}\,(a^2+b^2)\,d}-\frac{2\,b^{5/2}\,(A\,b-a\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{a^{5/2}\,(a^2+b^2)\,d}+\frac{2\,(A\,b-a\,B)\,\sqrt{\mathrm{Cot}[c+d\,x]}}{a^2\,d}-\frac{2\,A\,\mathrm{Cot}[c+d\,x]^{3/2}}{3\,a\,d}+\frac{(a\,(A-B)+b\,(A+B))\,\mathrm{Log}\left[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\mathrm{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,(a^2+b^2)\,d}-\frac{(a\,(A-B)+b\,(A+B))\,\mathrm{Log}\left[1+\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\mathrm{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\,(a^2+b^2)\,d}$$

Result (type 3, 750 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\left(-\frac{2\,(-A b+a B)}{a^2}-\frac{2\,A\,\text{Cot}[c+d x]}{3\,a}\right)(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\Big/\left(d\,(b+a\,\text{Cot}[c+d x])\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)-\frac{1}{2\,a^2\,d\,(b+a\,\text{Cot}[c+d x])\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])}(B+A\,\text{Cot}[c+d x])\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\left(-\left(\left(2\,(a^2 A-2\,A\,b^2+2\,a\,b\,B)\,\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)-\left(a^{3/2}\,A\,\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{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^2\,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)\right)\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)$$

Problem 594: Result more than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Tan}[c+d x]}{\text{Cot}[c+d x]^{5/2}\,(a+b\,\text{Tan}[c+d x])}\,dx$$

Optimal (type 3, 325 leaves, 17 steps) :

$$-\frac{\left(a\ (A-B)\ +b\ (A+B)\right)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d\,x]}\ \right]}{\sqrt{2}\ \left(a^2+b^2\right)\ d}+$$
$$\frac{\left(a\ (A-B)\ +b\ (A+B)\right)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d\,x]}\ \right]}{\sqrt{2}\ \left(a^2+b^2\right)\ d}+$$
$$\frac{2\,a^{5/2}\ \left(A\,b-a\,B\right)\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{b^{5/2}\ \left(a^2+b^2\right)\ d}+\frac{2\,B}{3\,b\,d\,\text{Cot}[c+d\,x]^{3/2}}+\frac{2\ \left(A\,b-a\,B\right)}{b^2\,d\,\sqrt{\text{Cot}[c+d\,x]}}+$$
$$\frac{\left(b\ (A-B)\ -a\ (A+B)\right)\ \text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d\,x]}\ +\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\ \left(a^2+b^2\right)\ d}-$$
$$\frac{\left(b\ (A-B)\ -a\ (A+B)\right)\ \text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d\,x]}\ +\text{Cot}[c+d\,x]\right]}{2\,\sqrt{2}\ \left(a^2+b^2\right)\ d}$$

Result (type 3, 779 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right.$$
$$\left.\left.\left(-\frac{2 B}{3 b}+\frac{2 B\,\text{Sec}[c+d x]^2}{3 b}+\frac{2\,\text{Sec}[c+d x]\ (A b\,\text{Sin}[c+d x]-a B\,\text{Sin}[c+d x])}{b^2}\right)\right)\right/$$
$$(d\ (b+a\,\text{Cot}[c+d x])\ (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]))+$$
$$\frac{1}{2 b^2 d\ (b+a\,\text{Cot}[c+d x])\ (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])}$$
$$(B+A\,\text{Cot}[c+d x])\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])$$
$$\left(-\left(\left(2\ (-2 a A b+2 a^2 B-b^2 B)\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\ (b+a\,\text{Cot}[c+d x])\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\ \sqrt{b}\ (1+\text{Cot}[c+d x]^2)^2\ (a+b\,\text{Tan}[c+d x])\right)\right)-$$
$$\left(b^{3/2} B\,\text{Cos}[2\ (c+d x)]\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\left(-4\ (a^2-b^2)\ \text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \left(-2\ (a-b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2\ (a-b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+(a+b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]\Big)\Big/$$
$$\left(2\sqrt{a}\ (a^2+b^2)\ (-1+\text{Cot}[c+d x]^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\,\text{Tan}[c+d x])\right)+$$
$$\frac{1}{4\ (a^2+b^2)\ (1+\text{Cot}[c+d x]^2)\ (a+b\,\text{Tan}[c+d x])}$$
$$A b^2\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\left(-8\sqrt{a}\ \sqrt{b}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\ (a+b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2\ (a+b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\text{Log}\left[\right.\right.$$
$$\left.\left.\left.\left.1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\ \text{Sec}[c+d x]^2\,\text{Sin}[2\ (c+d x)]\right)$$

Problem 595: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d x]^{3/2}\ (A+B\,\text{Tan}[c+d x])}{(a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 438 leaves, 17 steps):

$$-\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+$$

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+$$

$$\frac{b^{3/2}\left(7\,a^2\,A\,b+3\,A\,b^3-5\,a^3\,B-a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{a^{5/2}\left(a^2+b^2\right)^2 d}-$$

$$\frac{\left(2\,a^2\,A+3\,A\,b^2-a\,b\,B\right)\,\sqrt{\text{Cot}[c+d\,x]}}{a^2\left(a^2+b^2\right)d}+\frac{b\,\left(A\,b-a\,B\right)\,\text{Cot}[c+d\,x]^{3/2}}{a\left(a^2+b^2\right)d\,\left(b+a\,\text{Cot}[c+d\,x]\right)}+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}$$

$$\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]$$

Result (type 3, 859 leaves) :

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$
$$\left.\left(-\frac{2\,A}{a^2}+\frac{-A\,b^3\,\text{Sin}[c+d\,x]+a\,b^2\,B\,\text{Sin}[c+d\,x]}{a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}\right)\right)\Big/$$
$$\left(d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)-$$
$$\left(\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right.$$
$$\left(-\left(\left(2\,\left(3\,a^2\,A\,b+3\,A\,b^3-a^3\,B-a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d\,x]^3\,\text{Sec}[c+d\,x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(1+\text{Cot}[c+d\,x]^2\right)^2\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)-$$
$$\left(\left(a^2\,A\,b-a^3\,B\right)\,\text{Cos}\left[2\,(c+d\,x)\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\,\left(-4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+\right.$$
$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d\,x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]\right)\Big/$$
$$\left(2\,\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)\,\left(-1+\text{Cot}[c+d\,x]^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)-$$
$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)}$$
$$\left(a^3\,A+a^2\,b\,B\right)\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\,\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\right.\right.$$
$$\left.\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\right.$$
$$\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,(c+d\,x)\right]\right)\right)\Big/$$
$$\left(2\,a^2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 596: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\text{Cot}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^2}\,dx$$

Optimal (type 3, 392 leaves, 16 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^2 d}\left(2 a b (A-B)-a^2 (A+B)+b^2 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]+$$
$$\frac{1}{\sqrt{2}\left(a^2+b^2\right)^2 d}\left(2 a b (A-B)-a^2 (A+B)+b^2 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]-$$
$$\frac{\sqrt{b}\left(5 a^2 A b+A b^3-3 a^3 B+a b^2 B\right) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]}{a^{3/2}\left(a^2+b^2\right)^2 d}+\frac{b (A b-a B) \sqrt{\text{Cot}[c+d x]}}{a\left(a^2+b^2\right) d (b+a \text{Cot}[c+d x])}-$$
$$\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^2 d}\left(a^2 (A-B)-b^2 (A-B)+2 a b (A+B)\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]+$$
$$\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^2 d}\left(a^2 (A-B)-b^2 (A-B)+2 a b (A+B)\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]$$

Result (type 3, 808 leaves) :

$$
\begin{aligned}
&\Big(\sqrt{\mathrm{Cot}[c+d\,x]}\,\,(B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c+d\,x]\\
&\quad(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\,\,(A\,b^2\,\mathrm{Sin}[c+d\,x]-a\,b\,B\,\mathrm{Sin}[c+d\,x])\Big)\Big/\\
&\Big(a\,(a-i\,b)\,(a+i\,b)\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)+\\
&\Bigg((B+A\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c+d\,x]\,\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2\\
&\quad\Bigg(-\Bigg(\Bigg(2\,(a^2\,A+A\,b^2)\,\mathrm{ArcTan}\Big[\frac{\sqrt{a}\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{b}}\Big]\,\,(b+a\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c+d\,x]^3\,\mathrm{Sec}[c+d\,x]\Bigg)\Big/\\
&\qquad\Big(\sqrt{a}\,\sqrt{b}\,\,(1+\mathrm{Cot}[c+d\,x]^2)^2\,\,(a+b\,\mathrm{Tan}[c+d\,x])\Big)\Bigg)-\\
&\quad\Bigg((a^2\,A+a\,b\,B)\,\mathrm{Cos}[2\,(c+d\,x)]\,\,(b+a\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c+d\,x]^3\,\Bigg(-4\,(a^2-b^2)\,\mathrm{ArcTan}\Big[\\
&\qquad\frac{\sqrt{a}\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{b}}\Big]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\,\Big(-2\,(a-b)\,\mathrm{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\Big]+\\
&\qquad2\,(a-b)\,\mathrm{ArcTan}\Big[1+\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\Big]+(a+b)\,\,\Big(\mathrm{Log}\Big[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\\
&\qquad\quad\mathrm{Cot}[c+d\,x]\Big]-\mathrm{Log}\Big[1+\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\mathrm{Cot}[c+d\,x]\Big]\Big)\Big)\Bigg)\,\mathrm{Sec}[c+d\,x]\Bigg)\Big/\\
&\quad\Big(2\,\sqrt{a}\,\sqrt{b}\,\,(a^2+b^2)\,\,(-1+\mathrm{Cot}[c+d\,x]^2)\,\,(1+\mathrm{Cot}[c+d\,x]^2)\,\,(a+b\,\mathrm{Tan}[c+d\,x])\Big)-\\
&\quad\frac{1}{4\,(a^2+b^2)\,\,(1+\mathrm{Cot}[c+d\,x]^2)\,\,(a+b\,\mathrm{Tan}[c+d\,x])}\\
&\quad(-a\,A\,b+a^2\,B)\,\,(b+a\,\mathrm{Cot}[c+d\,x])\,\mathrm{Csc}[c+d\,x]^2\,\Bigg(-8\,\sqrt{a}\,\sqrt{b}\,\,\mathrm{ArcTan}\Big[\frac{\sqrt{a}\,\sqrt{\mathrm{Cot}[c+d\,x]}}{\sqrt{b}}\Big]+\\
&\qquad\sqrt{2}\,\,\Big(-2\,(a+b)\,\mathrm{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\Big]+2\,(a+b)\,\mathrm{ArcTan}\Big[1+\\
&\qquad\quad\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\Big]-(a-b)\,\,\Big(\mathrm{Log}\Big[1-\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\mathrm{Cot}[c+d\,x]\Big]-\\
&\qquad\quad\mathrm{Log}\Big[1+\sqrt{2}\,\sqrt{\mathrm{Cot}[c+d\,x]}+\mathrm{Cot}[c+d\,x]\Big]\Big)\Big)\Bigg)\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Sin}[2\,(c+d\,x)]\Bigg)\Bigg)\Big/\\
&\Big(2\,a\,(a-i\,b)\,(a+i\,b)\,d\,(b+a\,\mathrm{Cot}[c+d\,x])^2\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\Big)
\end{aligned}
$$

Problem 597: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\sqrt{\mathrm{Cot}[c+d\,x]}\,\,(a+b\,\mathrm{Tan}[c+d\,x])^2}\,dx$$

Optimal (type 3, 390 leaves, 16 steps):

$$\frac{\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}-$$

$$\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+$$

$$\frac{\left(3\,a^2\,A\,b-A\,b^3-a^3\,B+3\,a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)^2\,d}-\frac{(A\,b-a\,B)\,\sqrt{\text{Cot}[c+d\,x]}}{\left(a^2+b^2\right)\,d\,(b+a\,\text{Cot}[c+d\,x])}-$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]+$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2\,d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]$$

Result (type 3, 700 leaves):

$$\Big(\sqrt{\text{Cot}[c+d\,x]}\,(B+A\,\text{Cot}[c+d\,x])\,\text{Csc}[c+d\,x]\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(-A\,b\,\text{Sin}[c+d\,x]+a\,B\,\text{Sin}[c+d\,x])\Big)\Big/$$
$$\Big((a-i\,b)\,(a+i\,b)\,d\,(b+a\,\text{Cot}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\Big)+$$
$$\Bigg((B+A\,\text{Cot}[c+d\,x])\,\text{Csc}[c+d\,x]\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2$$
$$\Bigg(-\Bigg(\Bigg((A\,b-a\,B)\,\text{Cos}[2\,(c+d\,x)]\,(b+a\,\text{Cot}[c+d\,x])\,\text{Csc}[c+d\,x]^3$$
$$\Bigg(-4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}$$
$$\Big(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a-b)\,\text{ArcTan}\Big[$$
$$1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\Big]+(a+b)\,\Big(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$
$$\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]\Bigg)\Bigg/$$
$$\Big(2\,\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)\,\left(-1+\text{Cot}[c+d\,x]^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,(a+b\,\text{Tan}[c+d\,x])\Big)\Bigg)-$$
$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,(a+b\,\text{Tan}[c+d\,x])}\,(a\,A+b\,B)\,(b+a\,\text{Cot}[c+d\,x])$$
$$\text{Csc}[c+d\,x]^2\,\Bigg(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}$$
$$\Big(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-$$
$$(a-b)\,\Big(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$
$$\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\Big)\Big)\Bigg)\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,(c+d\,x)]\Bigg)\Bigg)\Bigg/$$
$$\Big(2\,(a-i\,b)\,(a+i\,b)\,d\,(b+a\,\text{Cot}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\Big)$$

Problem 598: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{A + B \operatorname{Tan}[c + d x]}{\operatorname{Cot}[c + d x]^{3/2} \left(a + b \operatorname{Tan}[c + d x]\right)^2} \, dx$$

Optimal (type 3, 392 leaves, 16 steps):

$$\frac{\left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{ArcTan}\left[1 - \sqrt{2} \sqrt{\operatorname{Cot}[c + d x]}\right]}{\sqrt{2} \left(a^2 + b^2\right)^2 d} -$$
$$\frac{1}{\sqrt{2} \left(a^2 + b^2\right)^2 d} \left(2 a b (A - B) - a^2 (A + B) + b^2 (A + B)\right) \operatorname{ArcTan}\left[1 + \sqrt{2} \sqrt{\operatorname{Cot}[c + d x]}\right] -$$
$$\frac{\sqrt{a} \left(a^2 A b - 3 A b^3 + a^3 B + 5 a b^2 B\right) \operatorname{ArcTan}\left[\frac{\sqrt{a} \sqrt{\operatorname{Cot}[c+d x]}}{\sqrt{b}}\right]}{b^{3/2} \left(a^2 + b^2\right)^2 d} + \frac{a (A b - a B) \sqrt{\operatorname{Cot}[c + d x]}}{b \left(a^2 + b^2\right) d \left(b + a \operatorname{Cot}[c + d x]\right)} +$$
$$\frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d} \left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{Log}\left[1 - \sqrt{2} \sqrt{\operatorname{Cot}[c + d x]} + \operatorname{Cot}[c + d x]\right] -$$
$$\frac{1}{2 \sqrt{2} \left(a^2 + b^2\right)^2 d} \left(a^2 (A - B) - b^2 (A - B) + 2 a b (A + B)\right) \operatorname{Log}\left[1 + \sqrt{2} \sqrt{\operatorname{Cot}[c + d x]} + \operatorname{Cot}[c + d x]\right]$$

Result (type 3, 810 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\ \left(a A b\,\text{Sin}[c+d x]-a^2 B\,\text{Sin}[c+d x]\right)\right)\Big/ \left((a-\mathrm{i}\,b)\ (a+\mathrm{i}\,b)\ b\,d\ (b+a\,\text{Cot}[c+d x])^2\ (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)+$$

$$\Bigg((B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2$$

$$\Bigg(-\Bigg(\Bigg(2\left(a^2 B+b^2 B\right)\text{ArcTan}\Big[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\Big]\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\ \text{Sec}[c+d x]\Bigg)\Big/ \left(\sqrt{a}\ \sqrt{b}\ \left(1+\text{Cot}[c+d x]^2\right)^2\ (a+b\,\text{Tan}[c+d x])\right)\Bigg)-$$

$$\Bigg(\left(-a A b-b^2 B\right)\text{Cos}[2\,(c+d x)]\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\ \Bigg(-4\left(a^2-b^2\right)\text{ArcTan}\Big[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\Big]+\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \Big(-2\,(a-b)\,\text{ArcTan}\Big[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\Big]+$$

$$2\,(a-b)\,\text{ArcTan}\Big[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\Big]+(a+b)\ \Big(\text{Log}\Big[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+$$

$$\text{Cot}[c+d x]\Big]-\text{Log}\Big[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]\Big)\Big)\Bigg)\ \text{Sec}[c+d x]\Bigg)\Big/$$

$$\left(2\sqrt{a}\ \sqrt{b}\ \left(a^2+b^2\right)\left(-1+\text{Cot}[c+d x]^2\right)\left(1+\text{Cot}[c+d x]^2\right)(a+b\,\text{Tan}[c+d x])\right)-$$

$$\frac{1}{4\left(a^2+b^2\right)\left(1+\text{Cot}[c+d x]^2\right)(a+b\,\text{Tan}[c+d x])}$$

$$\left(A b^2-a b B\right)(b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ \Bigg(-8\sqrt{a}\ \sqrt{b}\ \text{ArcTan}\Big[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\Big]+$$

$$\sqrt{2}\ \Big(-2\,(a+b)\,\text{ArcTan}\Big[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\Big]+2\,(a+b)\,\text{ArcTan}\Big[1+$$

$$\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\Big]-(a-b)\ \Big(\text{Log}\Big[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]-$$

$$\text{Log}\Big[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]\Big)\Big)\Bigg)\ \text{Sec}[c+d x]^2\ \text{Sin}[2\,(c+d x)]\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(2\,(a-\mathrm{i}\,b)\ (a+\mathrm{i}\,b)\ b\,d\ (b+a\,\text{Cot}[c+d x])^2\ (A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 599: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{A+B\,\text{Tan}[c+d x]}{\text{Cot}[c+d x]^{5/2}\ (a+b\,\text{Tan}[c+d x])^2}\,dx$$

Optimal (type 3, 437 leaves, 17 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+$$

$$\frac{1}{\sqrt{2}\left(a^2+b^2\right)^2 d}\left(a^2\,(A-B)-b^2\,(A-B)+2\,a\,b\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-$$

$$\frac{a^{3/2}\left(a^2\,A\,b+5\,A\,b^3-3\,a^3\,B-7\,a\,b^2\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]}{b^{5/2}\left(a^2+b^2\right)^2 d}-\frac{a\,A\,b-3\,a^2\,B-2\,b^2\,B}{b^2\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}}+$$

$$\frac{a\,\left(A\,b-a\,B\right)}{b\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\left(b+a\,\text{Cot}[c+d\,x]\right)}+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}$$

$$\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$

$$\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^2 d}\left(2\,a\,b\,(A-B)-a^2\,(A+B)+b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]$$

Result (type 3, 856 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\right.$$
$$\left.\left(\frac{-a^2 A b\,\text{Sin}[c+d x]+a^3 B\,\text{Sin}[c+d x]}{b^2\,(a^2+b^2)\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])}+\frac{2 B\,\text{Tan}[c+d x]}{b^2}\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^2\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)-$$
$$\left((B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2\right.$$
$$\left(-\left(\left(2\,(-a^2 A b-A b^3+3 a^3 B+3 a b^2 B)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-$$
$$\left((A b^3-a b^2 B)\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\right.\right.\right.$$
$$\left.\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+\right.$$
$$2\,(a-b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\right.\right.$$
$$\left.\left.\left.\left.\text{Cot}[c+d x]\right]-\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]\right)\Big/$$
$$\left(2\,\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}$$
$$(a A b^2+b^3 B)\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\,\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\right.\right.$$
$$\left.\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\Big)\Big/$$
$$\left(2\,(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,b^2\,d\,(b+a\,\text{Cot}[c+d x])^2\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 600: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cot}[c+d x]^{3/2}\,(A+B\,\text{Tan}[c+d x])}{(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 601 leaves, 18 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]+\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]+\frac{1}{4 a^{7/2}\left(a^2+b^2\right)^3 d} b^{3/2}\left(63 a^4 A b+46 a^2 A b^3+15 A b^5-35 a^5 B-6 a^3 b^2 B-3 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]-\frac{\left(8 a^4 A+31 a^2 A b^2+15 A b^4-11 a^3 b B-3 a b^3 B\right) \sqrt{\text{Cot}[c+d x]}}{4 a^3\left(a^2+b^2\right)^2 d}+\frac{b (A b-a B) \text{Cot}[c+d x]^{5/2}}{2 a\left(a^2+b^2\right) d(b+a \text{Cot}[c+d x])^2}+\frac{b\left(13 a^2 A b+5 A b^3-9 a^3 B-a b^2 B\right) \text{Cot}[c+d x]^{3/2}}{4 a^2\left(a^2+b^2\right)^2 d(b+a \text{Cot}[c+d x])}+\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]$$

Result (type 3, 1038 leaves) :

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{4 a^4 A+8 a^2 A b^2+5 A b^4-a b^3 B}{2 a^3 (a-i b)^2 (a+i b)^2}-\frac{b^3 (-A b+a B)}{2 a (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$(-17 a^2 A b^3\,\text{Sin}[c+d x]-5 A b^5\,\text{Sin}[c+d x]+13 a^3 b^2 B\,\text{Sin}[c+d x]+a b^4 B\,\text{Sin}[c+d x])\Big/$$
$$\left.\left.\left(4 a^3 (a-i b)^2 (a+i b)^2 (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)-$$
$$\left((B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\left(\left(2\left(16 a^4 A b+31 a^2 A b^3+15 A b^5-4 a^5 B-7 a^3 b^2 B-3 a b^4 B\right)\right.\right.\right.$$
$$\left.\text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/$$
$$\left.\left(\sqrt{a}\ \sqrt{b}\ \left(1+\text{Cot}[c+d x]^2\right)^2\ (a+b\,\text{Tan}[c+d x])\right)\right)-\left(\left(8 a^4 A b-4 a^5 B+4 a^3 b^2 B\right)\ \text{Cos}\right[$$
$$\left.2\,(c+d x)\right]\ (b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^3\left(-4\left(a^2-b^2\right)\text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\ \sqrt{a}\ \sqrt{b}\ \left(-2\,(a-b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2\,(a-b)\ \text{ArcTan}\right[$$
$$\left.1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+(a+b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]\Big)\Big/$$
$$\left(2\sqrt{a}\ \sqrt{b}\ \left(a^2+b^2\right)\ \left(-1+\text{Cot}[c+d x]^2\right)\ \left(1+\text{Cot}[c+d x]^2\right)\ (a+b\,\text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\left(a^2+b^2\right)\left(1+\text{Cot}[c+d x]^2\right)(a+b\,\text{Tan}[c+d x])}\left(4 a^5 A-4 a^3 A b^2+8 a^4 b B\right)$$
$$(b+a\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\left(-8\sqrt{a}\ \sqrt{b}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\ \text{ArcTan}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\ \text{ArcTan}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\ \left(\text{Log}\left[1-\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\ \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\ \text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\right)\Big/$$
$$\left(8 a^3 (a-i b)^2 (a+i b)^2\,d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 601: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\sqrt{\text{Cot}[c+d x]}\ (A+B\,\text{Tan}[c+d x])}{(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 534 leaves, 17 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]+\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]-\frac{1}{4 a^{5/2}\left(a^2+b^2\right)^3 d}\sqrt{b}\left(35 a^4 A b+6 a^2 A b^3+3 A b^5-15 a^5 B+18 a^3 b^2 B+a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\frac{b (A b-a B) \text{Cot}[c+d x]^{3/2}}{2 a\left(a^2+b^2\right) d (b+a \text{Cot}[c+d x])^2}+\frac{b\left(11 a^2 A b+3 A b^3-7 a^3 B+a b^2 B\right) \sqrt{\text{Cot}[c+d x]}}{4 a^2\left(a^2+b^2\right)^2 d (b+a \text{Cot}[c+d x])}-\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]+\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]$$

Result (type 3, 1004 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{b^2\,(-A b+a B)}{2 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{b^2\,(-A b+a B)}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$\left(13 a^2 A b^2\,\text{Sin}[c+d x]+A b^4\,\text{Sin}[c+d x]-9 a^3 b B\,\text{Sin}[c+d x]+3 a b^3 B\,\text{Sin}[c+d x]\right)\Big/$$
$$\left.\left.\left(4 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)+$$
$$\left((B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\left(\left(2\,(4 a^4 A+7 a^2 A b^2+3 A b^4+a^3 b B+a b^3 B)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-$$
$$\left((4 a^4 A-4 a^2 A b^2+8 a^3 b B)\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\right.$$
$$\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a-b)\,\text{ArcTan}\left[\right.\right.$$
$$\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]\Big)\Big/$$
$$\left(2\,\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}\,(-8 a^3 A b+4 a^4 B-4 a^2 b^2 B)$$
$$(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\Big)\Big/$$
$$\left(8 a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 602: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\text{Tan}[c+d x]}{\sqrt{\text{Cot}[c+d x]}\ (a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 534 leaves, 17 steps):

$$\frac{1}{\sqrt{2}\,(a^2+b^2)^3 d}\left(a^3 (A-B) - 3 a b^2 (A-B) + 3 a^2 b (A+B) - b^3 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+d x]}\right] - \frac{1}{\sqrt{2}\,(a^2+b^2)^3 d} \left(a^3 (A-B) - 3 a b^2 (A-B) + 3 a^2 b (A+B) - b^3 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+d x]}\right] + \left(\left(15 a^4 A b - 18 a^2 A b^3 - A b^5 - 3 a^5 B + 26 a^3 b^2 B - 3 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{a}\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\right) \Big/ \left(4 a^{3/2} \sqrt{b}\,(a^2+b^2)^3 d\right) + \frac{b (A b - a B)\sqrt{\text{Cot}[c+d x]}}{2 a (a^2+b^2) d (b + a \text{Cot}[c+d x])^2} - \frac{\left(9 a^2 A b + A b^3 - 5 a^3 B + 3 a b^2 B\right)\sqrt{\text{Cot}[c+d x]}}{4 a (a^2+b^2)^2 d (b + a \text{Cot}[c+d x])} - \frac{1}{2\sqrt{2}\,(a^2+b^2)^3 d} \left(3 a^2 b (A-B) - b^3 (A-B) - a^3 (A+B) + 3 a b^2 (A+B)\right) \text{Log}\left[1-\sqrt{2}\sqrt{\text{Cot}[c+d x]} + \text{Cot}[c+d x]\right] + \frac{1}{2\sqrt{2}\,(a^2+b^2)^3 d} \left(3 a^2 b (A-B) - b^3 (A-B) - a^3 (A+B) + 3 a b^2 (A+B)\right) \text{Log}\left[1+\sqrt{2}\sqrt{\text{Cot}[c+d x]} + \text{Cot}[c+d x]\right]$$

Result (type 3, 986 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\ (B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(\frac{b\,(-A b+a B)}{2 a\,(a-i b)^2\,(a+i b)^2}-\frac{a b\,(-A b+a B)}{2\,(a-i b)^2\,(a+i b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$\left(-9 a^2 A b\,\text{Sin}[c+d x]+3 A b^3\,\text{Sin}[c+d x]+5 a^3 B\,\text{Sin}[c+d x]-7 a b^2 B\,\text{Sin}[c+d x]\right)\Big/$$
$$\left.\left.\left(4 a\,(a-i b)^2\,(a+i b)^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)+$$
$$\left((B+A\,\text{Cot}[c+d x])\ \text{Csc}[c+d x]^2\ (a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\left(\left(2\,(a^2 A b+A b^3-a^3 B-a b^2 B)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\right.\right.\right.$$
$$\left.\left.\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(1+\text{Cot}[c+d x]^2\right)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-$$
$$\left((8 a^2 A b-4 a^3 B+4 a b^2 B)\,\text{Cos}[2\,(c+d x)]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\right.$$
$$\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a-b)\,\text{ArcTan}\left[\right.\right.$$
$$\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]\right)\Big/$$
$$\left(2\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,\left(-1+\text{Cot}[c+d x]^2\right)\,\left(1+\text{Cot}[c+d x]^2\right)\,(a+b\,\text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\,(a^2+b^2)\,\left(1+\text{Cot}[c+d x]^2\right)\,(a+b\,\text{Tan}[c+d x])}\,\left(4 a^3 A-4 a A b^2+8 a^2 b B\right)$$
$$(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,\left(-8\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\right]-\right.$$
$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]-\right.$$
$$\left.\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]\right)\right)\right)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\right)\Big/$$
$$\left(8 a\,(a-i b)^2\,(a+i b)^2\,d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 603: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{A+B\,\text{Tan}[c+d x]}{\text{Cot}[c+d x]^{3/2}\,(a+b\,\text{Tan}[c+d x])^3}\,dx$$

Optimal (type 3, 530 leaves, 17 steps):

$$\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)$$
$$\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\frac{1}{\sqrt{2}\,(a^2+b^2)^3\,d}$$
$$\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-$$
$$\left(\left(3\,a^4\,A\,b-26\,a^2\,A\,b^3+3\,A\,b^5+a^5\,B+18\,a^3\,b^2\,B-15\,a\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\right)\Big/$$
$$\left(4\,\sqrt{a}\,b^{3/2}\,(a^2+b^2)^3\,d\right)-\frac{(A\,b-a\,B)\,\sqrt{\text{Cot}[c+d\,x]}}{2\,(a^2+b^2)\,d\,(b+a\,\text{Cot}[c+d\,x])^2}+$$
$$\frac{\left(5\,a^2\,A\,b-3\,A\,b^3-a^3\,B+7\,a\,b^2\,B\right)\,\sqrt{\text{Cot}[c+d\,x]}}{4\,b\,(a^2+b^2)^2\,d\,(b+a\,\text{Cot}[c+d\,x])}+\frac{1}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}$$
$$\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-$$
$$\frac{1}{2\,\sqrt{2}\,(a^2+b^2)^3\,d}$$
$$\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]$$

Result (type 3, 983 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\;(B+A\,\text{Cot}[c+d\,x])\;\text{Csc}[c+d\,x]^2\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\frac{-A\,b+a\,B}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{a^2\,(-A\,b+a\,B)}{2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\right.$$

$$(5\,a^2\,A\,b\,\text{Sin}[c+d\,x]-7\,A\,b^3\,\text{Sin}[c+d\,x]-a^3\,B\,\text{Sin}[c+d\,x]+11\,a\,b^2\,B\,\text{Sin}[c+d\,x])\Big/$$

$$\left.\left.\left(4\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\right)\right)\right)\Big/$$

$$\left(d\,(b+a\,\text{Cot}[c+d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$

$$\left((B+A\,\text{Cot}[c+d\,x])\;\text{Csc}[c+d\,x]^2\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\left(\left(2\,(-a^2\,A\,b-A\,b^3+a^3\,B+a\,b^2\,B)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d\,x])\right.\right.\right.$$

$$\left.\left.\text{Csc}[c+d\,x]^3\,\text{Sec}[c+d\,x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d\,x]^2)^2\,(a+b\,\text{Tan}[c+d\,x])\right)\right)-$$

$$\left((-4\,a^2\,A\,b+4\,A\,b^3-8\,a\,b^2\,B)\,\text{Cos}[2\,(c+d\,x)]\,(b+a\,\text{Cot}[c+d\,x])\,\text{Csc}[c+d\,x]^3\right.$$

$$\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\right.$$

$$\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,(a-b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a-b)\,\text{ArcTan}\left[\right.\right.$$

$$\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+(a+b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\right.$$

$$\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]\Big)\Big/$$

$$\left(2\,\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d\,x]^2)\,(1+\text{Cot}[c+d\,x]^2)\,(a+b\,\text{Tan}[c+d\,x])\right)-$$

$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d\,x]^2)\,(a+b\,\text{Tan}[c+d\,x])}\,(8\,a\,A\,b^2-4\,a^2\,b\,B+4\,b^3\,B)$$

$$(b+a\,\text{Cot}[c+d\,x])\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$

$$\left(-2\,(a+b)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,(a+b)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\right.$$

$$(a-b)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\right.$$

$$\left.\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}[2\,(c+d\,x)]\right)\right)\Big/$$

$$\left(8\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,b\,d\,(b+a\,\text{Cot}[c+d\,x])^3\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)$$

Problem 604: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Cot}[c+d\,x]^{5/2}\,(a+b\,\text{Tan}[c+d\,x])^3}\,dx$$

Optimal (type 3, 534 leaves, 17 steps):

$$-\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+\frac{1}{\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(a^3\,(A-B)-3\,a\,b^2\,(A-B)+3\,a^2\,b\,(A+B)-b^3\,(A+B)\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\frac{1}{4\,b^{5/2}\,\left(a^2+b^2\right)^3 d}\sqrt{a}\,\left(a^4\,A\,b+18\,a^2\,A\,b^3-15\,A\,b^5+3\,a^5\,B+6\,a^3\,b^2\,B+35\,a\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\frac{a\,(A\,b-a\,B)\,\sqrt{\text{Cot}[c+d\,x]}}{2\,b\,\left(a^2+b^2\right)\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^2}-\frac{a\,\left(a^2\,A\,b-7\,A\,b^3+3\,a^3\,B+11\,a\,b^2\,B\right)\,\sqrt{\text{Cot}[c+d\,x]}}{4\,b^2\,\left(a^2+b^2\right)^2 d\,\left(b+a\,\text{Cot}[c+d\,x]\right)}+\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\frac{1}{2\,\sqrt{2}\,\left(a^2+b^2\right)^3 d}\left(3\,a^2\,b\,(A-B)-b^3\,(A-B)-a^3\,(A+B)+3\,a\,b^2\,(A+B)\right)\,\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]$$

Result (type 3, 1006 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{a\,\left(-A\,b+a\,B\right)}{2\,\left(a-i\,b\right)^2\,\left(a+i\,b\right)^2\,b}-\frac{a^3\,\left(-A\,b+a\,B\right)}{2\,\left(a-i\,b\right)^2\,\left(a+i\,b\right)^2\,b\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+\right.$$

$$\left(-a^3\,A\,b\,\text{Sin}[c+d\,x]+11\,a\,A\,b^3\,\text{Sin}[c+d\,x]-3\,a^4\,B\,\text{Sin}[c+d\,x]-15\,a^2\,b^2\,B\,\text{Sin}[c+d\,x]\right)\Big/$$

$$\left.\left.\left(4\,\left(a-i\,b\right)^2\,\left(a+i\,b\right)^2\,b^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right)\right)\right)\Big/$$

$$\left(d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)+$$

$$\left(\left(B+A\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(-\left(\left(2\,\left(a^3\,A\,b+a\,A\,b^3+3\,a^4\,B+7\,a^2\,b^2\,B+4\,b^4\,B\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\right.\right.\right.$$

$$\left.\left.\text{Csc}[c+d\,x]^3\,\text{Sec}[c+d\,x]\right)\Big/\left(\sqrt{a}\,\sqrt{b}\,\left(1+\text{Cot}[c+d\,x]^2\right)^2\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)\right)-$$

$$\left(\left(-8\,a\,A\,b^3+4\,a^2\,b^2\,B-4\,b^4\,B\right)\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\,\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^3\right.$$

$$\left(-4\,\left(a^2-b^2\right)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\right.$$

$$\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\left(-2\,\left(a-b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,\left(a-b\right)\,\text{ArcTan}\left[\right.\right.$$

$$\left.1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+\left(a+b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\right.$$

$$\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]\right)\Big/$$

$$\left(2\,\sqrt{a}\,\sqrt{b}\,\left(a^2+b^2\right)\,\left(-1+\text{Cot}[c+d\,x]^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)\right)-$$

$$\frac{1}{4\,\left(a^2+b^2\right)\,\left(1+\text{Cot}[c+d\,x]^2\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)}\,\left(-4\,a^2\,A\,b^2+4\,A\,b^4-8\,a\,b^3\,B\right)$$

$$\left(b+a\,\text{Cot}[c+d\,x]\right)\,\text{Csc}[c+d\,x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$

$$\left(-2\,\left(a+b\right)\,\text{ArcTan}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]+2\,\left(a+b\right)\,\text{ArcTan}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}\right]-\right.$$

$$\left(a-b\right)\,\left(\text{Log}\left[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]-\right.$$

$$\left.\left.\left.\left.\left.\text{Log}\left[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d\,x]}+\text{Cot}[c+d\,x]\right]\right)\right)\right)\,\text{Sec}[c+d\,x]^2\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]\right)\right)\Big/$$

$$\left(8\,\left(a-i\,b\right)^2\,\left(a+i\,b\right)^2\,b^2\,d\,\left(b+a\,\text{Cot}[c+d\,x]\right)^3\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

Problem 605: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Cot}[c+d\,x]^{7/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 600 leaves, 18 steps):

$$-\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{ArcTan}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]+\frac{1}{\sqrt{2}\left(a^2+b^2\right)^3 d}\left(3 a^2 b (A-B)-b^3 (A-B)-a^3 (A+B)+3 a b^2 (A+B)\right) \text{ArcTan}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}\right]-\frac{1}{4 b^{7/2}\left(a^2+b^2\right)^3 d} a^{3/2}\left(3 a^4 A b+6 a^2 A b^3+35 A b^5-15 a^5 B-46 a^3 b^2 B-63 a b^4 B\right) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]-\frac{3 a^3 A b+11 a A b^3-15 a^4 B-31 a^2 b^2 B-8 b^4 B}{4 b^3\left(a^2+b^2\right)^2 d \sqrt{\text{Cot}[c+d x]}}+\frac{a (A b-a B)}{2 b\left(a^2+b^2\right) d \sqrt{\text{Cot}[c+d x]}\,(b+a \text{Cot}[c+d x])^2}+\frac{a\left(a^2 A b+9 A b^3-5 a^3 B-13 a b^2 B\right)}{4 b^2\left(a^2+b^2\right)^2 d \sqrt{\text{Cot}[c+d x]}\,(b+a \text{Cot}[c+d x])}-\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{Log}\left[1-\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]+\frac{1}{2 \sqrt{2}\left(a^2+b^2\right)^3 d}\left(a^3 (A-B)-3 a b^2 (A-B)+3 a^2 b (A+B)-b^3 (A+B)\right) \text{Log}\left[1+\sqrt{2} \sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\right]$$

Result (type 3, 1033 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\,(B+A\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\frac{a^2\,(-A b+a B)}{2\,(a-i b)^2\,(a+i b)^2\,b^2}+\frac{a^4\,(-A b+a B)}{2\,(a-i b)^2\,(a+i b)^2\,b^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^2}+\right.$$
$$(-3 a^4 A b\,\text{Sin}[c+d x]-15 a^2 A b^3\,\text{Sin}[c+d x]+7 a^5 B\,\text{Sin}[c+d x]+19 a^3 b^2 B\,\text{Sin}[c+d x])\Big/$$
$$\left.\left.\left(4\,(a-i b)^2\,(a+i b)^2\,b^3\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)+\frac{2\,B\,\text{Tan}[c+d x]}{b^3}\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)-$$
$$\left((B+A\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])^3\right.$$
$$\left(-\left(\left(2\,(-3 a^4 A b-7 a^2 A b^3-4 A b^5+15 a^5 B+31 a^3 b^2 B+16 a b^4 B)\right.\right.\right.$$
$$\left.\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\text{Sec}[c+d x]\right)\Big/$$
$$\left.\left(\sqrt{a}\,\sqrt{b}\,(1+\text{Cot}[c+d x]^2)^2\,(a+b\,\text{Tan}[c+d x])\right)\right)-\left(\left((-4 a^2 A b^3+4 A b^5-8 a b^4 B)\,\text{Cos}\Big[\right.\right.$$
$$2\,(c+d x)\Big]\,(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^3\,\left(-4\,(a^2-b^2)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\right.$$
$$\sqrt{2}\,\sqrt{a}\,\sqrt{b}\,\Big(-2\,(a-b)\,\text{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\Big]+2\,(a-b)\,\text{ArcTan}\Big[$$
$$1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\Big]+(a+b)\,\Big(\text{Log}\Big[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]-$$
$$\left.\left.\text{Log}\Big[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]\Big)\Big)\right)\,\text{Sec}[c+d x]\right)\Big/$$
$$\left(2\,\sqrt{a}\,\sqrt{b}\,(a^2+b^2)\,(-1+\text{Cot}[c+d x]^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])\right)-$$
$$\frac{1}{4\,(a^2+b^2)\,(1+\text{Cot}[c+d x]^2)\,(a+b\,\text{Tan}[c+d x])}\,(8 a A b^4-4 a^2 b^3 B+4 b^5 B)$$
$$(b+a\,\text{Cot}[c+d x])\,\text{Csc}[c+d x]^2\,\left(-8\,\sqrt{a}\,\sqrt{b}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{\text{Cot}[c+d x]}}{\sqrt{b}}\right]+\sqrt{2}\right.$$
$$\Big(-2\,(a+b)\,\text{ArcTan}\Big[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\Big]+2\,(a+b)\,\text{ArcTan}\Big[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}\Big]-$$
$$(a-b)\,\Big(\text{Log}\Big[1-\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]-$$
$$\left.\left.\left.\text{Log}\Big[1+\sqrt{2}\,\sqrt{\text{Cot}[c+d x]}+\text{Cot}[c+d x]\Big]\Big)\Big)\right)\,\text{Sec}[c+d x]^2\,\text{Sin}[2\,(c+d x)]\right)\right)\Big/$$
$$\left(8\,(a-i b)^2\,(a+i b)^2\,b^3\,d\,(b+a\,\text{Cot}[c+d x])^3\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right)$$

Problem 612: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{9/2}\,\sqrt{a+b\,\text{Tan}[c+d x]}\,(A+B\,\text{Tan}[c+d x])\,dx$$

Optimal (type 3, 354 leaves, 12 steps):

$$-\frac{1}{d}\sqrt{i a-b}\,(i A-B)\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}-\frac{1}{d}\sqrt{i a+b}\,(i A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}+\frac{1}{105 a^3 d}2\left(35 a^2 A b-8 A b^3+105 a^3 B+14 a b^2 B\right)\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}+\frac{2\left(35 a^2 A+4 A b^2-7 a b B\right)\text{Cot}[c+d x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{105 a^2 d}-\frac{2\,(A b+7 a B)\,\text{Cot}[c+d x]^{5/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{35 a d}-\frac{2 A\,\text{Cot}[c+d x]^{7/2}\sqrt{a+b\,\text{Tan}[c+d x]}}{7 d}$$

Result (type 4, 4853 leaves):

$$\left(\sqrt{\text{Cot}[c+d x]}\,(B+A\,\text{Cot}[c+d x])\left(\frac{4\left(19 a^2 A b-4 A b^3+63 a^3 B+7 a b^2 B\right)}{105 a^3}+\frac{1}{105 a^2}2\left(50 a^2 A\,\text{Cos}[c+d x]+4 A b^2\,\text{Cos}[c+d x]-7 a b B\,\text{Cos}[c+d x]\right)\text{Csc}[c+d x]-\frac{2\,(A b+7 a B)\,\text{Csc}[c+d x]^2}{35 a}-\frac{2}{7}A\,\text{Cot}[c+d x]\,\text{Csc}[c+d x]^2\right)\text{Sin}[c+d x]\sqrt{a+b\,\text{Tan}[c+d x]}\right)\bigg/\left(d\left(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\right)\right)+$$

$$\left(4 i\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}\,(B+A\,\text{Cot}[c+d x])$$

$$\left((a A-b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)\,(A+i B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)$$

$$\left.(A - i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sin}[c+d\,x]\left(\frac{a\,A\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} - \frac{b\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} + \frac{A\,b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} + \right.$$

$$\left.\left.\frac{a\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(-\left(\left(i\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left((a\,A - b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a + i b)\,(A + i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a - i b)\,(A - i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-\left(i\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg((a\,A-b\,B)\ \text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)\ (A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-\mathrm{i}\,b)\ (A-\mathrm{i}\,B)\ \text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg((a\,A-b\,B)\ \text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathrm{i}\,b)\ (A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(\left(a\,A-b\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)\,(A+\text{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\text{i}\,b)\,(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)\,(A+\text{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathrm{i}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,A-b\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right/\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)$$

Problem 613: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d x]^{7/2}\sqrt{a+b\,\mathrm{Tan}[c+d x]}\,(A+B\,\mathrm{Tan}[c+d x])\,dx$$

Optimal (type 3, 290 leaves, 11 steps):

$$\frac{1}{d}\sqrt{\mathrm{i}\,a-b}\,(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}-\frac{1}{d}$$

$$\sqrt{\mathrm{i}\,a+b}\,(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}+$$

$$\frac{2\left(15 a^2 A+2 A b^2-5 a b B\right)\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d x]}}{15 a^2 d}-$$

$$\frac{2(A b+5 a B)\,\mathrm{Cot}[c+d x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d x]}}{15 a d}-\frac{2 A\,\mathrm{Cot}[c+d x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d x]}}{5 d}$$

Result (type 4, 4786 leaves):

$$\left(\sqrt{\mathrm{Cot}[c+d x]}\,(B+A\,\mathrm{Cot}[c+d x])\left(\frac{2\left(18 a^2 A+2 A b^2-5 a b B\right)}{15 a^2}-\right.\right.$$

$$\left.\frac{2\,(A b\,\mathrm{Cos}[c+d x]+5 a B\,\mathrm{Cos}[c+d x])\,\mathrm{Csc}[c+d x]}{15 a}-\frac{2}{5}A\,\mathrm{Csc}[c+d x]^2\right)$$

$$\left.\mathrm{Sin}[c+d x]\sqrt{a+b\,\mathrm{Tan}[c+d x]}\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\right)-$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d x]}\,(B+A\,\mathrm{Cot}[c+d x])$$

$$\left(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)$$

$$\left.(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sin}[c+d\,x]\left(-\frac{A\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\left.\frac{b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(i\,(A\,b+a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+\left(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(i\,(A\,b+a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\text{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,(A-\text{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \Bigg(\mathrm{i}\left(A\,b+a\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\mathrm{i}\left(A\,b+a\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a-\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(A\,b+a\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(A+\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(A-\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right|\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

Problem 614: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 3, 239 leaves, 10 steps):

$$\frac{1}{d}\sqrt{i\,a-b}\,\left(i\,A-B\right)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{1}{d}$$
$$\sqrt{i\,a+b}\,\left(i\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-$$
$$\frac{2\,\left(A\,b+3\,a\,B\right)\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,a\,d}-\frac{2\,A\,\text{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{3\,d}$$

Result (type 4, 4756 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\left(-\frac{2\,\left(A\,b+3\,a\,B\right)}{3\,a}-\frac{2}{3}\,A\,\text{Cot}[c+d\,x]\right)\,\left(B+A\,\text{Cot}[c+d\,x]\right)\right.$$
$$\left.\text{Sin}[c+d\,x]\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\Big/\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)-$$
$$\left(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\,\left(B+A\,\text{Cot}[c+d\,x]\right)$$
$$\left(\left(a\,A-b\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+i\,b\right)\,\left(A+i\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathbb{i}\,b\right)$$

$$\left(A-\mathbb{i}\,B\right)\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sin}[c+d\,x]\ \Bigg(-\frac{a\,A\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{A\,b\,\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a\,B\,\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\Bigg)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)\Bigg/$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\Bigg)$$

$$\Bigg(\Bigg(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a\,A-b\,B\right)\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathbb{i}\,b\right)\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a - i\, b)\ (A - i\, B)\ \text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$i\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg) + \Bigg(i\, a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg((a\,A-b\,B)\ \text{EllipticF}\Big[i\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$(a + i\, b)\ (A + i\, B)\ \text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a - i\, b)\ (A - i\, B)\ \text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$i\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Big/$$

$$\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\Bigg) -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,3\,i\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A+i\,B)\right.$$

$$\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)\,(A-i\,B)\,\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{3/2}}\,2\,i\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A+i\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)\ (A-i\,B)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\Bigg((a\,A-b\,B)\ \text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\ (A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)\ (A-i\,B)\ \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A+i\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A-b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A+i\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathbb{i}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,A-b\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathbb{i}\,(a+\mathbb{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathbb{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathbb{i}\,(a-\mathbb{i}\,b)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathbb{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\Bigg(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 615: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\;(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 194 leaves, 9 steps):

$$-\frac{1}{d}\sqrt{i\,a-b}\;(A+i\,B)\;\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\;\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\;+$$

$$\frac{1}{d}\sqrt{i\,a+b}\;(A-i\,B)\;\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\;\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\;\sqrt{\mathrm{Tan}[c+d\,x]}\;-$$

$$\frac{2\,A\sqrt{\mathrm{Cot}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{d}$$

Result (type 4, 4716 leaves):

$$-\Big(\Big(2\,A\sqrt{\mathrm{Cot}[c+d\,x]}\;(B+A\,\mathrm{Cot}[c+d\,x])\;\mathrm{Sin}[c+d\,x]\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\Big)\Big/$$

$$\big(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\big)\Big)\;+$$

$$\Bigg(4\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\;(B+A\,\mathrm{Cot}[c+d\,x])$$

$$\Bigg(i\,(A\,b+a\,B)\;\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\;(A+i\,B)$$

$$\mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\;i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-i\,b)$$

$$\left(A - i B\right) \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right]\Bigg)$$

$$\text{Sin}[c + d x] \left(\frac{A b \sqrt{\text{Cot}[c + d x]}}{\sqrt{\text{Sec}[c + d x]} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} + \frac{a B \sqrt{\text{Cot}[c + d x]}}{\sqrt{\text{Sec}[c + d x]} \sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} - \frac{a A \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Sec}[c + d x]} \,\text{Sin}[c + d x]}{\sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}} + \frac{b B \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Sec}[c + d x]} \,\text{Sin}[c + d x]}{\sqrt{a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]}}\right) \text{Tan}\left[\frac{1}{2}\left(c + d x\right)\right]^{3/2} \sqrt{a + b \,\text{Tan}[c + d x]}\Bigg) \Big/$$

$$\left(\sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \; d \left(a \,\text{Cos}[c + d x] + b \,\text{Sin}[c + d x]\right) \left(A \,\text{Cos}[c + d x] + B \,\text{Sin}[c + d x]\right)\right.$$

$$\left(-\left(\left(a \sqrt{\frac{b + \sqrt{a^2 + b^2} + a \,\text{Cot}\left[\frac{1}{2}\left(c + d x\right)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{\text{Cot}[c + d x]}\right.\right.\right.$$

$$\left(i \left(A b + a B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d x\right)\right]}}\right], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] - \right.$$

$$\left(a + i b\right) \left(A + i B\right) \text{EllipticPi}\left[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c + d x\right)\right]}}\right],\right.$$

$$\left.\frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\right] + \left(a - i b\right) \left(A - i B\right) \text{EllipticPi}\left[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i\right.$$

$$\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Bigg]\Bigg)\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\Bigg)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}\right.$$

$$\left(\text{i}\,(A b+a B)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\text{i}\,b)\,(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,\left(A\,b+a\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\text{i}\,b\right)\,\left(A+\text{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)\,\left(A-\text{i}\,B\right)\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,\left(A\,b+a\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\text{i}\,b\right)\,\left(A+\text{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)\ (A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\mathrm{i}\,(A\,b+a\,B)\ \text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -\right.$$

$$(a+\mathrm{i}\,b)\ (A+\mathrm{i}\,B)\ \text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a-\mathrm{i}\,b)\ (A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} - \frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\left(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,(A\,b+a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathbb{i}\,b)\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A\,b+a\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 616: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \sqrt{\text{Cot}[c+d x]}\ \sqrt{a+b\,\text{Tan}[c+d x]}\ (A+B\,\text{Tan}[c+d x])\, dx$$

Optimal (type 3, 229 leaves, 13 steps):

$$-\frac{1}{d}\sqrt{i\,a-b}\ (i\,A-B)\ \text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}+\frac{2\sqrt{b}\ B\,\text{ArcTanh}\left[\frac{\sqrt{b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{d}-\frac{1}{d}\sqrt{i\,a+b}\ (i\,A+B)\ \text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}$$

Result (type 4, 12 351 leaves):

$$\left(4\,a\,\text{Cos}[c+d x]\ \sqrt{\text{Cot}[c+d x]}\ \left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a+i\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(i\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(i\,a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\Big(A\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}+$$

$$B\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Big)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\,d\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)$$

$$\left(\left(a^2\sqrt{\text{Cot}[c+d\,x]}\,\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-\text{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\Bigg(\text{i}\,b\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-\text{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(-\text{i}\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(\text{i}\,a\,A\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\text{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(\text{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\Bigg(A\,b\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\text{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(\text{i}\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(a\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{\text{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathbb{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)+$$

$$\left(2\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(\mathrm{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\mathbb{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$2\,a\,\mathrm{Csc}[c+d\,x]^2\left(A\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathbb{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(\mathbb{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)+\left(\mathrm{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ +$$

$$\frac{1}{\sqrt{a^2+b^2}\ \sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}$$

$$2\,a\,\sqrt{\text{Cot}[c+d\,x]}\ \left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathbb{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(\mathbb{i}\, a\, A\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(A\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(a\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right) + \left(\mathbb{i}\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Bigg/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\ \text{Sec}[c+d\,x]^{3/2}$$

$$\text{Sin}[c+d\,x]\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ -$$

$$\frac{1}{\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}$$

$$2\,a\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(A\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) - \left(\mathrm{i}\,a\,A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) + \left(\mathrm{i}\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) -$$

$$\left(b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}}\,4\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,A\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.\right.$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)-$$

$$\left(a\,b\,B\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\,A\,b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a^2\,A\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a^2\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(\mathbb{i}\, a\, b\, B\, \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathbb{i}\, a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(\mathbb{i}\, a^2\, A\, \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\, A\, b\, \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathbb{i}\, a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a^2\, B\, \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathbb{i}\, a+b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(\mathrm{i}\,a\,b\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a\,b\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)\Bigg)$$

Problem 617: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\,\left(A+B\,\mathrm{Tan}[c+d\,x]\right)}{\sqrt{\mathrm{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 261 leaves, 14 steps):

$$\frac{1}{d}\sqrt{\mathrm{i}\, a-b}\;(A+\mathrm{i}\, B)\;\text{ArcTan}\Big[\frac{\sqrt{\mathrm{i}\, a-b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+$$

$$\frac{(2\,A\,b+a\,B)\;\text{ArcTanh}\Big[\frac{\sqrt{b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{b}\;d}-\frac{1}{d}$$

$$\sqrt{\mathrm{i}\, a+b}\;(A-\mathrm{i}\, B)\;\text{ArcTanh}\Big[\frac{\sqrt{\mathrm{i}\, a+b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+$$

$$\frac{B\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 59 809 leaves) : Display of huge result suppressed!

Problem 618: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\text{Tan}[c+d\,x]}\;(A+B\,\text{Tan}[c+d\,x])}{\text{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 324 leaves, 15 steps) :

$$\frac{1}{d}\sqrt{\mathrm{i}\, a-b}\;(\mathrm{i}\, A-B)\;\text{ArcTan}\Big[\frac{\sqrt{\mathrm{i}\, a-b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+\frac{1}{4\,b^{3/2}\,d}$$

$$(4\,a\,A\,b-a^2\,B-8\,b^2\,B)\;\text{ArcTanh}\Big[\frac{\sqrt{b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+\frac{1}{d}$$

$$\sqrt{\mathrm{i}\, a+b}\;(\mathrm{i}\, A+B)\;\text{ArcTanh}\Big[\frac{\sqrt{\mathrm{i}\, a+b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\Big]\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}\;+$$

$$\frac{(4\,A\,b-a\,B)\;\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,b\,d\,\sqrt{\text{Cot}[c+d\,x]}}+\frac{B\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{2\,b\,d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 73 529 leaves) : Display of huge result suppressed!

Problem 619: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{11/2}\;(a+b\,\text{Tan}[c+d\,x])^{3/2}\;(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 422 leaves, 13 steps) :

$$\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{3/2}\left(\mathrm{i}\,A-B\right)\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}-\frac{1}{d}\left(\mathrm{i}\,a+b\right)^{3/2}\left(\mathrm{i}\,A+B\right)\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}-\frac{1}{315\,a^3\,d}2\left(315\,a^4\,A-63\,a^2\,A\,b^2+8\,A\,b^4-420\,a^3\,b\,B-18\,a\,b^3\,B\right)\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}+\frac{1}{315\,a^2\,d}2\left(126\,a^2\,A\,b+4\,A\,b^3+105\,a^3\,B-9\,a\,b^2\,B\right)\mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}+\frac{2\left(21\,a^2\,A-A\,b^2-24\,a\,b\,B\right)\mathrm{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,a\,d}-\frac{2\left(10\,A\,b+9\,a\,B\right)\mathrm{Cot}[c+d\,x]^{7/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{63\,d}-\frac{2\,a\,A\,\mathrm{Cot}[c+d\,x]^{9/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{9\,d}$$

Result (type 4, 5158 leaves):

$$\frac{1}{d\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)}\mathrm{Cos}[c+d\,x]^2\sqrt{\mathrm{Cot}[c+d\,x]}\left(-\frac{2\left(413\,a^4\,A-66\,a^2\,A\,b^2+8\,A\,b^4-492\,a^3\,b\,B-18\,a\,b^3\,B\right)}{315\,a^3}+\frac{1}{315\,a^2}2\left(176\,a^2\,A\,b\,\mathrm{Cos}[c+d\,x]+4\,A\,b^3\,\mathrm{Cos}[c+d\,x]+150\,a^3\,B\,\mathrm{Cos}[c+d\,x]-9\,a\,b^2\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]+\frac{2\left(133\,a^2\,A-3\,A\,b^2-72\,a\,b\,B\right)\mathrm{Csc}[c+d\,x]^2}{315\,a}-\frac{2}{63}\left(10\,A\,b\,\mathrm{Cos}[c+d\,x]+9\,a\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]^3-\frac{2}{9}a\,A\,\mathrm{Csc}[c+d\,x]^4\right)\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\mathrm{Tan}[c+d\,x]\right)+$$

$$\left(4\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Cos}[c+d\,x]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^2\right.$$

$$\left(A+\mathrm{i}\,B\right)\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\left(\frac{2\,a\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{a^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{2\,a\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(-\left(\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(\mathbb{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\right.$$

$$\left.\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}\right)\right)-\left(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}\left[c+d\,x\right]}\right.$$

$$\left(\mathbb{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathbb{i}\,b\right)^2\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathbb{i}\,b\right)^2\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\text{i}\,b\right)^2\left(A+\text{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)^2\left(A-\text{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\text{Csc}[c+d\,x]^2$$

$$\left(\text{i}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\text{i}\,b\right)^2\left(A+\text{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\text{i}\,b\right)^2\left(A-\text{i}\,B\right)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a-\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\left(a+\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(A+\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\left(a-\mathrm{i}\,b\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(A-\mathrm{i}\,B\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

Problem 620: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{9/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 351 leaves, 12 steps):

$$-\frac{1}{d}(i\,a-b)^{3/2}\,(A+i\,B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-\frac{1}{d}$$
$$(i\,a+b)^{3/2}\,(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+$$
$$\frac{1}{105\,a^2\,d}2\,(140\,a^2\,A\,b+6\,A\,b^3+105\,a^3\,B-21\,a\,b^2\,B)\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}+$$
$$\frac{2\,(35\,a^2\,A-3\,A\,b^2-42\,a\,b\,B)\,\text{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{105\,a\,d}-$$
$$\frac{2\,(8\,A\,b+7\,a\,B)\,\text{Cot}[c+d\,x]^{5/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{35\,d}-\frac{2\,a\,A\,\text{Cot}[c+d\,x]^{7/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{7\,d}$$

Result (type 4, 5099 leaves):

$$\left(\text{Cos}[c+d\,x]^2\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\frac{2\,(164\,a^2\,A\,b+6\,A\,b^3+126\,a^3\,B-21\,a\,b^2\,B)}{105\,a^2}+\frac{1}{105\,a}\right.\right.$$
$$2\,(50\,a^2\,A\,\text{Cos}[c+d\,x]-3\,A\,b^2\,\text{Cos}[c+d\,x]-42\,a\,b\,B\,\text{Cos}[c+d\,x])\,\text{Csc}[c+d\,x]-$$
$$\left.\frac{2}{35}\,(8\,A\,b+7\,a\,B)\,\text{Csc}[c+d\,x]^2-\frac{2}{7}\,a\,A\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]^2\right)$$
$$\left.(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$
$$(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]))+$$
$$\left(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[\mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+\mathrm{i}\, b)^2\right.$$

$$(A+\mathrm{i}\, B)\, \text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-\mathrm{i}\, b)^2 (A-\mathrm{i}\, B)\, \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \left(\frac{a^2 A \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\, \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}} -\right.$$

$$\frac{A b^2 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\, \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}} -$$

$$\frac{2 a b B \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\, \sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}} +$$

$$\frac{2 a A b \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Sec}[c+d x]}\, \text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}} +$$

$$\frac{a^2 B \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Sec}[c+d x]}\, \text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}} -$$

$$\left.\frac{b^2 B \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Sec}[c+d x]}\, \text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} (a+b \,\text{Tan}[c+d x])^{3/2} (A+B \,\text{Tan}[c+d x])\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; d\, (a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x])^2 (A \,\text{Cos}[c+d x] + B \,\text{Sin}[c+d x])\right.$$

$$\left(-\left(\left(\mathbb{i}\, a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\operatorname{Cot}[c+d x]}\right.\right.\right.$$

$$\left(\left(a^2 A-A b^2-2 a b B\right) \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i} b)^2 (A+\mathbb{i} B) \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i} b)^2 (A-\mathbb{i} B) \operatorname{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\right.$$

$$\left.\left.\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]}\right) \Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right.$$

$$\left.\left.\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}\right)\right)-\left(\mathbb{i}\, a \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\operatorname{Cot}[c+d x]}\right.$$

$$\left(\left(a^2 A-A b^2-2 a b B\right) \operatorname{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathbb{i} b)^2 (A+\mathbb{i} B) \operatorname{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a - \mathrm{i}\, b\right)^2 \left(A - \mathrm{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right) +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\mathrm{i}\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a^2\,A - A\,b^2 - 2\,a\,b\,B\right)\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a - \mathrm{i}\, b\right)^2 \left(A - \mathrm{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\mathrm{Csc}[c+d\,x]^2$$

$$\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+i b\right)^2 \left(A+i B\right) \text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a-i b\right)^2 \left(A-i B\right) \text{EllipticPi}\left[\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]} \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} 4 i \text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$\left(a+i b\right)^2 \left(A+i B\right) \text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \left(a-i b\right)^2 \left(A-i B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]} \text{Sin}\left[\frac{1}{2}\left(c+d x\right)\right] \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^{3/2} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} 2 i \text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a+\mathrm{i}\,b\right)^2\,\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2\,\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathrm{i}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left.\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,\left(a+\mathrm{i}\,b\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A+\mathrm{i}\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-i\,B)\ \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 621: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{7/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 299 leaves, 11 steps):

$$\frac{1}{\sqrt{i\,a-b}\ d}(a+i\,b)^2\,(i\,A-B)\ \text{ArcTan}\left[\frac{\sqrt{i\,a-b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{1}{d}(i\,a+b)^{3/2}\,(i\,A+B)\ \text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{2\,(15\,a^2\,A-3\,A\,b^2-20\,a\,b\,B)\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,a\,d}-$$

$$\frac{2\,(6\,A\,b+5\,a\,B)\ \text{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,d}-\frac{2\,a\,A\,\text{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}}{5\,d}$$

Result (type 4, 5041 leaves):

$$\Bigg(\text{Cos}[c+d\,x]^2\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\frac{2\,(18\,a^2\,A-3\,A\,b^2-20\,a\,b\,B)}{15\,a}-\frac{2}{15}(6\,A\,b\,\text{Cos}[c+d\,x]+5\,a\,B\,\text{Cos}[c+d\,x])\ \text{Csc}[c+d\,x]-\right.$$

$$\left.\frac{2}{5}\,a\,A\,\text{Csc}[c+d\,x]^2\right)(a+b\,\text{Tan}[c+d\,x])^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Big/$$

$$(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]))+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^2\right.$$

$$(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\right)\left(-\frac{2\,a\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{a^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^2\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\frac{2\,a\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(-i\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(a+i\,b\right)^2\left(A+i\,B\right)\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)^2\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\left.\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(-i\left(2aAb+a^2B-b^2B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+i b)^2(A+iB)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2(A-iB)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+dx]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+dx)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]}}\,3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+dx)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+dx)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+dx]}$$

$$\left(-i\left(2aAb+a^2B-b^2B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\ -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-\mathbb{i}\,(2\,a\,A\,b+a^2\,B-b^2\,B)\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\ +$$

$$(a+\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\text{Csc}[c+d\,x]^2$$

$$\left(-\mathbb{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$(a+\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-i\left(2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^2\,(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\operatorname{Sec}[c+d x]}\ \Bigg(-\Bigg(\Bigg(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(2 a A b+a^2 B-b^2 B\right) \operatorname{Sec}\left[\frac{1}{2}\ (c+d x)\right]^2\Bigg)\Big/$$

$$\Bigg(4 \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \operatorname{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}\Bigg)\Bigg)-$$

$$\Bigg(\mathrm{i}\ (a+\mathrm{i}\ b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathrm{i}\ B) \operatorname{Sec}\left[\frac{1}{2}\ (c+d x)\right]^2\Bigg)\Big/\Bigg(4 \left(1-\mathrm{i} \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]\right)$$

$$\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \operatorname{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}\Bigg)+$$

$$\Bigg(\mathrm{i}\ (a-\mathrm{i}\ b)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-\mathrm{i}\ B) \operatorname{Sec}\left[\frac{1}{2}\ (c+d x)\right]^2\Bigg)\Big/$$

$$\Bigg(4 \left(1+\mathrm{i} \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]\right) \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\ (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \operatorname{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}\Bigg)\Bigg)\ \operatorname{Tan}\left[\frac{1}{2}\ (c+d x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 622: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \operatorname{Cot}[c+d x]^{5/2}\ (a+b \operatorname{Tan}[c+d x])^{3/2}\ (A+B \operatorname{Tan}[c+d x])\ dx$$

Optimal (type 3, 236 leaves, 10 steps):

$$\frac{1}{d}(\mathrm{i}\ a-b)^{3/2}\ (A+\mathrm{i}\ B) \operatorname{ArcTan}\left[\frac{\sqrt{\mathrm{i}\ a-b}\ \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]}\ \sqrt{\operatorname{Tan}[c+d x]}+\frac{1}{d}$$

$$(\mathrm{i}\ a+b)^{3/2}\ (A-\mathrm{i}\ B) \operatorname{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\ a+b}\ \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]}\ \sqrt{\operatorname{Tan}[c+d x]}-$$

$$\frac{2\ (4 A b+3 a B) \sqrt{\operatorname{Cot}[c+d x]}\ \sqrt{a+b \operatorname{Tan}[c+d x]}}{3 d}-\frac{2 a A \operatorname{Cot}[c+d x]^{3/2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{3 d}$$

Result (type 4, 5000 leaves):

$$\left(\text{Cos}[c+d x]^2 \sqrt{\text{Cot}[c+d x]} \left(-\frac{2}{3} (4 A b+3 a B)-\frac{2}{3} a A \text{Cot}[c+d x]\right) (a+b \text{Tan}[c+d x])^{3/2} (A+B \text{Tan}[c+d x])\right) \Big/ (d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x]) (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]))-$$

$$\left(4 \mathrm{i} \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \text{Cos}[c+d x]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left((a^2 A-A b^2-2 a b B) \text{EllipticF}\left[\mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i} b)^2\right.$$

$$(A+\mathrm{i} B) \text{EllipticPi}\left[-\frac{\mathrm{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathrm{i} b)^2 (A-\mathrm{i} B) \text{EllipticPi}\left[\frac{\mathrm{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \left(-\frac{a^2 A \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+\right.$$

$$\frac{A b^2 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+$$

$$\frac{2 a b B \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$

$$\frac{2 a A b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}-$$

$$\frac{a^2 B \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}+$$

$$\left.\frac{b^2 B \sqrt{\mathrm{Cot}[c+d x]} \sqrt{\mathrm{Sec}[c+d x]} \mathrm{Sin}[c+d x]}{\sqrt{a \mathrm{Cos}[c+d x]+b \mathrm{Sin}[c+d x]}}\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}(a+b \mathrm{Tan}[c+d x])^{3/2}(A+B \mathrm{Tan}[c+d x])\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d\, (a \mathrm{Cos}[c+d x]+b \mathrm{Sin}[c+d x])^2 (A \mathrm{Cos}[c+d x]+B \mathrm{Sin}[c+d x])\right.$$

$$\left(\left(i a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\mathrm{Cot}[c+d x]}\right.\right.$$

$$\left((a^2 A-A b^2-2 a b B) \mathrm{EllipticF}\left[i \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)^2 (A+i B) \mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2 (A-i B) \mathrm{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\mathrm{Sec}[c+d x]}\right) \Big/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a \mathrm{Cos}[c+d x]+b \mathrm{Sin}[c+d x]}\right.$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+\left(\text{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+\text{i}\,b)^2\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\text{i}\,b)^2\,(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\text{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a+i b)^2 (A+i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-i b)^2 (A-i B) \,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]} +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(a \,\text{Cos}[c+d x] + b \,\text{Sin}[c+d x]\right)^{3/2}} 2 i \,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2} + a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left(\left(a^2 A - A b^2 - 2 a b B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a+i b)^2 (A+i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a-i b)^2 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \left(b \text{Cos}[c+d x]-a \text{Sin}[c+d x]\right) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\, 2\, \mathbb{i}\, \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d x]^2$$

$$\Bigg(\left(a^2 A-A b^2-2 a b B\right) \text{EllipticF}\left[\mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i} b)^2 (A+\mathbb{i} B) \text{EllipticPi}\left[-\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i} b)^2 (A-\mathbb{i} B) \text{EllipticPi}\left[\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg) \sqrt{\text{Sec}[c+d x]}\ \text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\, 4\, \mathbb{i}\, \text{Cos}\left[\frac{1}{2} (c+d x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}$$

$$\Bigg(\left(a^2 A-A b^2-2 a b B\right) \text{EllipticF}\left[\mathbb{i} \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathbb{i} b)^2 (A+\mathbb{i} B) \text{EllipticPi}\left[-\frac{\mathbb{i} \left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2\,A-A\,b^2-2\,a\,b\,B)\ \text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a+\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\ \text{EllipticPi}\Big[-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a-\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;\Bigg(-\Bigg(\Bigg(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(a^2\,A-A\,b^2-2\,a\,b\,B\right)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)+$$

$$\Bigg(i\,(a+i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(A+i\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/\Bigg(4\left(1-i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\Bigg(i\,(a-i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(A-i\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)\;\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 623: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cot}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}\,(A+B\,\mathrm{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 269 leaves, 14 steps):

$$-\frac{1}{\sqrt{\mathrm{i}\,a-b}\;d}\left(a+\mathrm{i}\,b\right)^2\left(\mathrm{i}\,A-B\right)\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{2\,b^{3/2}\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}}{d}-\frac{1}{d}$$

$$\left(\mathrm{i}\,a+b\right)^{3/2}\left(\mathrm{i}\,A+B\right)\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}-$$

$$\frac{2\,a\,A\,\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}$$

Result (type 4, 74 118 leaves): Display of huge result suppressed!

Problem 624: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\text{Cot}[c+d\,x]}\;\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 3, 264 leaves, 14 steps):

$$-\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{3/2}\left(A+\mathrm{i}\,B\right)\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{1}{d}\sqrt{b}\;\left(2\,A\,b+3\,a\,B\right)\text{ArcTanh}\left[\frac{\sqrt{b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}-\frac{1}{d}$$

$$\left(\mathrm{i}\,a+b\right)^{3/2}\left(A-\mathrm{i}\,B\right)\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\;\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\;\sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{b\,B\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 82 770 leaves): Display of huge result suppressed!

Problem 625: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 328 leaves, 15 steps):

$$\frac{1}{\sqrt{\text{i} a-b}\, d}(a+\text{i} b)^2 (\text{i} A-B) \text{ArcTan}\left[\frac{\sqrt{\text{i} a-b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+$$
$$\frac{1}{4 \sqrt{b}\, d}\left(12 a A b+3 a^2 B-8 b^2 B\right) \text{ArcTanh}\left[\frac{\sqrt{b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+$$
$$\frac{1}{d}(\text{i} a+b)^{3/2} (\text{i} A+B) \text{ArcTanh}\left[\frac{\sqrt{\text{i} a+b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+$$
$$\frac{b B \sqrt{a+b \text{Tan}[c+d x]}}{2 d \text{Cot}[c+d x]^{3/2}}+\frac{(4 A b+5 a B) \sqrt{a+b \text{Tan}[c+d x]}}{4 d \sqrt{\text{Cot}[c+d x]}}$$

Result (type 4, 91 499 leaves) : Display of huge result suppressed!

Problem 626: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b \text{Tan}[c+d x])^{3/2} (A+B \text{Tan}[c+d x])}{\text{Cot}[c+d x]^{3/2}} \, dx$$

Optimal (type 3, 383 leaves, 16 steps) :

$$\frac{1}{d}(\text{i} a-b)^{3/2} (A+\text{i} B) \text{ArcTan}\left[\frac{\sqrt{\text{i} a-b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+\frac{1}{8 b^{3/2} d}$$
$$\left(6 a^2 A b-16 A b^3-a^3 B-24 a b^2 B\right) \text{ArcTanh}\left[\frac{\sqrt{b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+$$
$$\frac{1}{d}(\text{i} a+b)^{3/2} (A-\text{i} B) \text{ArcTanh}\left[\frac{\sqrt{\text{i} a+b}\, \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]}\, \sqrt{\text{Tan}[c+d x]}+$$
$$\frac{\left(6 a A b-a^2 B-8 b^2 B\right) \sqrt{a+b \text{Tan}[c+d x]}}{8 b d \sqrt{\text{Cot}[c+d x]}}+$$
$$\frac{(6 A b-a B) (a+b \text{Tan}[c+d x])^{3/2}}{12 b d \sqrt{\text{Cot}[c+d x]}}+\frac{B (a+b \text{Tan}[c+d x])^{5/2}}{3 b d \sqrt{\text{Cot}[c+d x]}}$$

Result (type 4, 105 230 leaves) : Display of huge result suppressed!

Problem 627: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d x]^{13/2} (a+b \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x]) \, dx$$

Optimal (type 3, 500 leaves, 14 steps) :

$$-\frac{1}{d}\left(\mathrm{i}\, a-b\right)^{5/2}\left(\mathrm{i}\, A-B\right) \text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-\frac{1}{d}$$
$$\left(\mathrm{i}\, a+b\right)^{5/2}\left(\mathrm{i}\, A+B\right) \text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-$$
$$\frac{1}{3465\,a^3\,d}2\left(8085\,a^4\,A\,b-495\,a^2\,A\,b^3+40\,A\,b^5+3465\,a^5\,B-5313\,a^3\,b^2\,B-110\,a\,b^4\,B\right)$$
$$\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}-\frac{1}{3465\,a^2\,d}$$
$$2\left(1155\,a^4\,A-1485\,a^2\,A\,b^2-20\,A\,b^4-2541\,a^3\,b\,B+55\,a\,b^3\,B\right)\text{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}+$$
$$\frac{1}{1155\,a\,d}2\left(495\,a^2\,A\,b-5\,A\,b^3+231\,a^3\,B-275\,a\,b^2\,B\right)\text{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}+$$
$$\frac{2\left(99\,a^2\,A-113\,A\,b^2-209\,a\,b\,B\right)\text{Cot}[c+d\,x]^{7/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}}{693\,d}-$$
$$\frac{2\,a\left(14\,A\,b+11\,a\,B\right)\text{Cot}[c+d\,x]^{9/2}\sqrt{a+b\,\text{Tan}[c+d\,x]}}{99\,d}-\frac{2\,a\,A\,\text{Cot}[c+d\,x]^{11/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}{11\,d}$$

Result (type 4, 5419 leaves):

$$\frac{1}{d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)}\text{Cos}[c+d\,x]^3\sqrt{\text{Cot}[c+d\,x]}$$
$$\left(-\frac{1}{3465\,a^3}2\left(10\,375\,a^4\,A\,b-510\,a^2\,A\,b^3+40\,A\,b^5+4543\,a^5\,B-6138\,a^3\,b^2\,B-110\,a\,b^4\,B\right)-\right.$$
$$\frac{1}{3465\,a^2}2\left(1965\,a^4\,A\,\text{Cos}[c+d\,x]-2050\,a^2\,A\,b^2\,\text{Cos}[c+d\,x]-20\,A\,b^4\,\text{Cos}[c+d\,x]-\right.$$
$$\left.3586\,a^3\,b\,B\,\text{Cos}[c+d\,x]+55\,a\,b^3\,B\,\text{Cos}[c+d\,x]\right)\text{Csc}[c+d\,x]+$$
$$\frac{2\left(3095\,a^2\,A\,b-15\,A\,b^3+1463\,a^3\,B-825\,a\,b^2\,B\right)\text{Csc}[c+d\,x]^2}{3465\,a}+$$
$$\frac{2}{693}\left(225\,a^2\,A\,\text{Cos}[c+d\,x]-113\,A\,b^2\,\text{Cos}[c+d\,x]-209\,a\,b\,B\,\text{Cos}[c+d\,x]\right)\text{Csc}[c+d\,x]^3-$$
$$\left.\frac{2}{99}a\left(23\,A\,b+11\,a\,B\right)\text{Csc}[c+d\,x]^4-\frac{2}{11}a^2\,A\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]^4\right)$$
$$\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(A+B\,\text{Tan}[c+d\,x]\right)-$$
$$\left(4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Cos}[c+d\,x]^3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right) \text{EllipticF}\left[i \,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a+i b)^3 (A+i B) \,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^3 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(-\frac{a^3 A \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+\right.$$

$$\frac{3 a A b^2 \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{3 a^2 b B \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\frac{b^3 B \sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]} \sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\frac{3 a^2 A b \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \,\text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\frac{A b^3 \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \,\text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}-$$

$$\frac{a^3 B \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \,\text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}+$$

$$\left.\frac{3 a b^2 B \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \,\text{Sin}[c+d x]}{\sqrt{a \,\text{Cos}[c+d x]+b \,\text{Sin}[c+d x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} (a+b \,\text{Tan}[c+d x])^{5/2} (A+B \,\text{Tan}[c+d x])\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\ \left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(\left(\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^3\ \left(A+\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-\mathbb{i}\,b\right)^3\ \left(A-\mathbb{i}\,B\right)\ \text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\left(b-\sqrt{a^2+b^2}\right)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\left(\mathbb{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i\,b)^3\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,i\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\Bigg(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)$$

$$\text{EllipticPi}\left[-\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\dot{\imath}\,b)^3\,(A-\dot{\imath}\,B)\,\text{EllipticPi}\left[\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ +$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\dot{\imath}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\text{EllipticF}\left[\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\dot{\imath}\,b)^3\,(A+\dot{\imath}\,B)\,\text{EllipticPi}\left[-\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\dot{\imath}\,b)^3\,(A-\dot{\imath}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i\,b)^3\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^3\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\dot{\imath}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a-\dot{\imath}\,b\right)^3\left(A-\dot{\imath}\,B\right)$$

$$\left.\text{EllipticPi}\Big[\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\ \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\dot{\imath}\,\text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\text{EllipticF}\Big[\dot{\imath}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a+\dot{\imath}\,b\right)^3\left(A+\dot{\imath}\,B\right)\text{EllipticPi}\Big[-\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\dot{\imath}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\left(a-\dot{\imath}\,b\right)^3\left(A-\dot{\imath}\,B\right)$$

$$\left.\text{EllipticPi}\Big[\frac{\dot{\imath}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\dot{\imath}\,\text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a^3 A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+\right.$$

$$\left(i\,(a+i\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a-i\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 628: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{11/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 418 leaves, 13 steps):

$$\frac{1}{d}\left(\mathrm{i}\, a-b\right)^{5/2}\left(A+\mathrm{i}\, B\right) \operatorname{ArcTan}\left[\frac{\sqrt{\mathrm{i}\, a-b}\, \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]}\, \sqrt{\operatorname{Tan}[c+d x]}-\frac{1}{d}$$
$$\left(\mathrm{i}\, a+b\right)^{5/2}\left(A-\mathrm{i}\, B\right) \operatorname{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\, a+b}\, \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]}\, \sqrt{\operatorname{Tan}[c+d x]}-\frac{1}{315\, a^2\, d}$$
$$2\left(315\, a^4 A-483\, a^2 A\, b^2-10\, A\, b^4-735\, a^3\, b\, B+45\, a\, b^3\, B\right) \sqrt{\operatorname{Cot}[c+d x]}\, \sqrt{a+b \operatorname{Tan}[c+d x]}+$$
$$\frac{1}{315\, a\, d} 2\left(231\, a^2 A\, b-5\, A\, b^3+105\, a^3\, B-135\, a\, b^2\, B\right) \operatorname{Cot}[c+d x]^{3/2} \sqrt{a+b \operatorname{Tan}[c+d x]}+$$
$$\frac{2\left(21\, a^2 A-25\, A\, b^2-45\, a\, b\, B\right) \operatorname{Cot}[c+d x]^{5/2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{105\, d}-$$
$$\frac{2\, a\left(4\, A\, b+3\, a\, B\right) \operatorname{Cot}[c+d x]^{7/2} \sqrt{a+b \operatorname{Tan}[c+d x]}}{21\, d}-\frac{2\, a\, A \operatorname{Cot}[c+d x]^{9/2}\left(a+b \operatorname{Tan}[c+d x]\right)^{3/2}}{9\, d}$$

Result (type 4, 5348 leaves):

$$\frac{1}{d\left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^2\left(A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]\right)}$$
$$\operatorname{Cos}[c+d x]^3 \sqrt{\operatorname{Cot}[c+d x]}\left(-\frac{2\left(413\, a^4 A-558\, a^2 A\, b^2-10\, A\, b^4-870\, a^3\, b\, B+45\, a\, b^3\, B\right)}{315\, a^2}+\frac{1}{315\, a}\right.$$
$$2\left(326\, a^2 A\, b \operatorname{Cos}[c+d x]-5\, A\, b^3 \operatorname{Cos}[c+d x]+150\, a^3\, B \operatorname{Cos}[c+d x]-135\, a\, b^2\, B \operatorname{Cos}[c+d x]\right)$$
$$\operatorname{Csc}[c+d x]+\frac{2}{315}\left(133\, a^2 A-75\, A\, b^2-135\, a\, b\, B\right) \operatorname{Csc}[c+d x]^2-$$
$$\left.\frac{2}{63}\left(19\, a\, A\, b \operatorname{Cos}[c+d x]+9\, a^2\, B \operatorname{Cos}[c+d x]\right) \operatorname{Csc}[c+d x]^3-\frac{2}{9}\, a^2 A \operatorname{Csc}[c+d x]^4\right)$$
$$\left(a+b \operatorname{Tan}[c+d x]\right)^{5/2}\left(A+B \operatorname{Tan}[c+d x]\right)+$$
$$\left(4 \operatorname{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \operatorname{Cos}[c+d x]^3 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}\left(c+d x\right)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{\operatorname{Cot}[c+d x]}\left(\mathrm{i}\left(3\, a^2 A\, b-A\, b^3+a^3\, B-3\, a\, b^2\, B\right)\right.$$
$$\operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\, b\right)^3\left(A+\mathrm{i}\, B\right)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-i\,b\right)^3$$

$$\left.\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{3\,a^2\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{A\,b^3\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^3\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{3\,a\,b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^3\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{3\,a\,A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{3\,a^2\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\frac{b^3\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\mathbb{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\mathbb{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathbb{i}\,b\right)^3\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}}\,3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}\left[c+d\,x\right]}\left(\mathbb{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^3\left(A+\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\,-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\big(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\big)^{3/2}}\,2\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\mathbb{i}\,\big(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\big)\,\text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathbb{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\,\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\big(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\big)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\mathrm{Csc}[c+d\,x]^2\left(\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\;\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}$$

$$4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\left(\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a-\mathrm{i}\,b\right)^3\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^3\left(A+\mathrm{i}\,B\right)\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a-\mathrm{i}\,b\right)^3\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.$$

$$\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(\mathbb{i}\,(a+\mathbb{i}\,b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathbb{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathbb{i}\,(a-\mathbb{i}\,b)^3\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A-\mathbb{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+\mathbb{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)$$

Problem 629: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{9/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 349 leaves, 12 steps):

$$\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{5/2}\left(\mathrm{i}\,A-B\right)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+\frac{1}{d}$$
$$\left(\mathrm{i}\,a+b\right)^{5/2}\left(\mathrm{i}\,A+B\right)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}+$$
$$\frac{1}{105\,a\,d}2\left(245\,a^2\,A\,b-15\,A\,b^3+105\,a^3\,B-161\,a\,b^2\,B\right)\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}+$$
$$\frac{2\left(35\,a^2\,A-45\,A\,b^2-77\,a\,b\,B\right)\mathrm{Cot}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{105\,d}-$$
$$\frac{2\,a\left(10\,A\,b+7\,a\,B\right)\mathrm{Cot}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{35\,d}-\frac{2\,a\,A\,\mathrm{Cot}[c+d\,x]^{7/2}\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}{7\,d}$$

Result (type 4, 5276 leaves) :

$$\Bigg(\mathrm{Cos}[c+d\,x]^3\sqrt{\mathrm{Cot}[c+d\,x]}\,\Bigg(\frac{2\left(290\,a^2\,A\,b-15\,A\,b^3+126\,a^3\,B-161\,a\,b^2\,B\right)}{105\,a}+$$
$$\frac{2}{105}\left(50\,a^2\,A\,\mathrm{Cos}[c+d\,x]-45\,A\,b^2\,\mathrm{Cos}[c+d\,x]-77\,a\,b\,B\,\mathrm{Cos}[c+d\,x]\right)\mathrm{Csc}[c+d\,x]-$$
$$\frac{2}{35}\,a\left(15\,A\,b+7\,a\,B\right)\mathrm{Csc}[c+d\,x]^2-\frac{2}{7}\,a^2\,A\,\mathrm{Cot}[c+d\,x]\,\mathrm{Csc}[c+d\,x]^2\Bigg)$$
$$\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{5/2}\left(A+B\,\mathrm{Tan}[c+d\,x]\right)\Bigg)\Bigg/$$
$$\left(d\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^2\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\right)+$$
$$\Bigg(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Cos}[c+d\,x]^3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$
$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\Bigg(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)$$
$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)^3\left(A+\mathrm{i}\,B\right)$$
$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^3$$

$$\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\left(\frac{a^3\,A\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{3\,a\,A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{3\,a^2\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{b^3\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{3\,a^2\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{A\,b^3\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\frac{a^3\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{3\,a\,b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+\text{i} b)^3 (A+\text{i} B)$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-\text{i} b)^3 (A-\text{i} B)\, \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\right) \Big/ \left(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right) -$$

$$\left(\text{i}\, a \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]} \left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right)\right.\right.$$

$$\text{EllipticF}\left[\text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+\text{i} b)^3 (A+\text{i} B)$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-\text{i} b)^3 (A-\text{i} B)\, \text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\mathbb{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}\,+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\;\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\;\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\;\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathbb{i}\,b)^3\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\,\left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^3\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\dot{\imath}\,b)^3\,(A-\dot{\imath}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\dot{\imath}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\dot{\imath}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \left(\left(a^3\,A-3\,a\,A\,b^2-3\,a^2\,b\,B+b^3\,B\right)\,\text{EllipticF}\left[\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\dot{\imath}\,b)^3\,(A+\dot{\imath}\,B)\,\text{EllipticPi}\left[-\frac{\dot{\imath}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\dot{\imath}\,b)^3\,(A-\dot{\imath}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\dot{\imath}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \dot{\imath}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\dot{\imath}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^3(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(\mathrm{i}\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a^3 A-3 a A b^2-3 a^2 b B+b^3 B\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)+$$

$$\left(\text{i}\,(a-\text{i}\,b)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\text{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\left(1+\text{i}\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 630: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{7/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 287 leaves, 11 steps):

$$-\frac{1}{d}(\text{i}\,a-b)^{5/2}\,(A+\text{i}\,B)\,\text{ArcTan}\left[\frac{\sqrt{\text{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{1}{d}$$

$$(\text{i}\,a+b)^{5/2}\,(A-\text{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{\text{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+$$

$$\frac{2\,(15\,a^2\,A-23\,A\,b^2-35\,a\,b\,B)\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,d}-$$

$$\frac{2\,a\,(8\,A\,b+5\,a\,B)\,\text{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{15\,d}-\frac{2\,a\,A\,\text{Cot}[c+d\,x]^{5/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{5\,d}$$

Result (type 4, 5229 leaves):

$$\Bigg(\text{Cos}[c+d\,x]^3\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\frac{2}{15}(18\,a^2\,A-23\,A\,b^2-35\,a\,b\,B)-\frac{2}{15}(11\,a\,A\,b\,\text{Cos}[c+d\,x]+5\,a^2\,B\,\text{Cos}[c+d\,x])\,\text{Csc}[c+d\,x]-\right.$$

$$\left.\frac{2}{5}a^2\,A\,\text{Csc}[c+d\,x]^2\right)(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Bigg/$$

$$\left(d\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right)+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Cos}[c+d\,x]^3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\left(-\mathrm{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3$$

$$\left.\left.(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\right)$$

$$\left(-\frac{3\,a^2\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+\right.$$

$$\frac{A\,b^3\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^3\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{3\,a\,b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{a^3\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{3\,a\,A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{3\,a^2\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{b^3 B \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2} (c+d x)\right]^{3/2} (a+b \text{Tan}[c+d x])^{5/2} (A+B \text{Tan}[c+d x])\right) \Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} d (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^3 (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right.$$

$$\left(-\left(\left(a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]} \left(-i \left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^3 (A+i B)$$

$$\text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i b)^3 (A-i B) \text{EllipticPi}\left[\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\right) \Big/ \left(\left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}\right)\right)-$$

$$\left(a \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\operatorname{Cot}[c+d x]}\left(-i\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\right.\right.$$

$$\operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^3 (A+i B)$$

$$\operatorname{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-i b)^3 (A-i B) \operatorname{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left. i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\operatorname{Sec}[c+d x]}\right) \Bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]} \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}} 3 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\operatorname{Cot}[c+d x]}\left(-i\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\right.$$

$$\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)^3\,(A+\text{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\text{i}\,b)^3\,(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-\text{i}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i}\,b)^3\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\text{i}\,b)^3\,(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ (b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x])\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\ 2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d x]^2$$

$$\left(-\mathrm{i}\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)^3\,(A+\mathrm{i}\,B)\ \text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^3\,(A-\mathrm{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\left(-\text{i}\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\right.$$

$$\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i} b)^3 (A+\text{i} B)$$

$$\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a-\text{i} b)^3 (A-\text{i} B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\left(-\text{i}\left(3 a^2 A b-A b^3+a^3 B-3 a b^2 B\right)\right.$$

$$\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\text{i} b)^3 (A+\text{i} B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a-i\,b\right)^3\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}\left[c+d\,x\right]^{3/2}\text{Sin}\left[c+d\,x\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}}\,4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}\left[c+d\,x\right]}$$

$$\sqrt{\text{Sec}\left[c+d\,x\right]}\,\left(-\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(3\,a^2\,A\,b-A\,b^3+a^3\,B-3\,a\,b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right/\right.\right.$$

$$\left.\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)-$$

$$\left(i\left(a+i\,b\right)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A+i\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(i\left(a-i\,b\right)^3\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A-i\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\Bigg)$$

Problem 631: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{5/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 300 leaves, 15 steps):

$$-\frac{1}{d}(i\,a-b)^{5/2}\,(i\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\,+$$

$$\frac{2\,b^{5/2}\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{d}-\frac{1}{d}$$

$$(i\,a+b)^{5/2}\,(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}\,-$$

$$\frac{2\,a\,(2\,A\,b+a\,B)\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d}-\frac{2\,a\,A\,\text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{3\,d}$$

Result (type 4, 97 068 leaves): Display of huge result suppressed!

Problem 632: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 301 leaves, 15 steps):

$$\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{5/2}(A+\mathrm{i}\,B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{1}{d}b^{3/2}\,(2\,A\,b+5\,a\,B)\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}-\frac{1}{d}\left(\mathrm{i}\,a+b\right)^{5/2}(A-\mathrm{i}\,B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{b\,(2\,a\,A+b\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{d\,\sqrt{\text{Cot}[c+d\,x]}}-\frac{2\,a\,A\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{d}$$

Result (type 4, 105 692 leaves) : Display of huge result suppressed!

Problem 633: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 3, 320 leaves, 15 steps) :

$$\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{5/2}(\mathrm{i}\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{1}{4\,d}\sqrt{b}\,\left(20\,a\,A\,b+15\,a^2\,B-8\,b^2\,B\right)\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{1}{d}\left(\mathrm{i}\,a+b\right)^{5/2}(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}+\frac{b\,(4\,A\,b+7\,a\,B)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}{4\,d\,\sqrt{\text{Cot}[c+d\,x]}}+\frac{b\,B\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}{2\,d\,\sqrt{\text{Cot}[c+d\,x]}}$$

Result (type 4, 114 434 leaves) : Display of huge result suppressed!

Problem 634: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Tan}[c+d\,x])^{5/2}\,(A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Cot}[c+d\,x]}}\,dx$$

Optimal (type 3, 376 leaves, 16 steps) :

$$-\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{5/2}\left(A+\mathrm{i}\,B\right)\operatorname{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}+\frac{1}{8\sqrt{b}\,d}$$
$$\left(30\,a^2\,A\,b-16\,A\,b^3+5\,a^3\,B-40\,a\,b^2\,B\right)\operatorname{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}+$$
$$\frac{1}{d}\left(\mathrm{i}\,a+b\right)^{5/2}\left(A-\mathrm{i}\,B\right)\operatorname{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}+$$
$$\frac{\left(14\,a\,A\,b+5\,a^2\,B-8\,b^2\,B\right)\sqrt{a+b\operatorname{Tan}[c+d\,x]}}{8\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}+$$
$$\frac{b\,B\,\left(a+b\operatorname{Tan}[c+d\,x]\right)^{3/2}}{3\,d\operatorname{Cot}[c+d\,x]^{3/2}}+\frac{\left(2\,A\,b+3\,a\,B\right)\left(a+b\operatorname{Tan}[c+d\,x]\right)^{3/2}}{4\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}$$

Result (type 4, 123 145 leaves) : Display of huge result suppressed!

Problem 635: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\operatorname{Tan}[c+d\,x]\right)^{5/2}\left(A+B\operatorname{Tan}[c+d\,x]\right)}{\operatorname{Cot}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 457 leaves, 17 steps) :

$$-\frac{1}{d}\left(\mathrm{i}\,a-b\right)^{5/2}\left(\mathrm{i}\,A-B\right)\operatorname{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}+$$
$$\frac{1}{64\,b^{3/2}\,d}\left(40\,a^3\,A\,b-320\,a\,A\,b^3-5\,a^4\,B-240\,a^2\,b^2\,B+128\,b^4\,B\right)$$
$$\operatorname{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}-\frac{1}{d}$$
$$\left(\mathrm{i}\,a+b\right)^{5/2}\left(\mathrm{i}\,A+B\right)\operatorname{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\operatorname{Tan}[c+d\,x]}}{\sqrt{a+b\operatorname{Tan}[c+d\,x]}}\right]\sqrt{\operatorname{Cot}[c+d\,x]}\,\sqrt{\operatorname{Tan}[c+d\,x]}+$$
$$\frac{\left(40\,a^2\,A\,b-64\,A\,b^3-5\,a^3\,B-112\,a\,b^2\,B\right)\sqrt{a+b\operatorname{Tan}[c+d\,x]}}{64\,b\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}+$$
$$\frac{\left(40\,a\,A\,b-5\,a^2\,B-48\,b^2\,B\right)\left(a+b\operatorname{Tan}[c+d\,x]\right)^{3/2}}{96\,b\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}+$$
$$\frac{\left(8\,A\,b-a\,B\right)\left(a+b\operatorname{Tan}[c+d\,x]\right)^{5/2}}{24\,b\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}+\frac{B\,\left(a+b\operatorname{Tan}[c+d\,x]\right)^{7/2}}{4\,b\,d\,\sqrt{\operatorname{Cot}[c+d\,x]}}$$

Result (type 4, 136 892 leaves) : Display of huge result suppressed!

Problem 636: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d x]^{7/2} (A+B \text{Tan}[c+d x])}{\sqrt{a+b \text{Tan}[c+d x]}} \, dx$$

Optimal (type 3, 296 leaves, 11 steps):

$$\frac{(i A-B) \text{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\sqrt{i a-b}\, d}-\frac{(i A+B) \text{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b \text{Tan}[c+d x]}}\right] \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Tan}[c+d x]}}{\sqrt{i a+b}\, d}+\frac{2 \left(15 a^2 A-8 A b^2+10 a b B\right) \sqrt{\text{Cot}[c+d x]} \sqrt{a+b \text{Tan}[c+d x]}}{15 a^3 d}+\frac{2 (4 A b-5 a B) \text{Cot}[c+d x]^{3/2} \sqrt{a+b \text{Tan}[c+d x]}}{15 a^2 d}-\frac{2 A \text{Cot}[c+d x]^{5/2} \sqrt{a+b \text{Tan}[c+d x]}}{5 a d}$$

Result (type 4, 4516 leaves):

$$\left((B+A \text{Cot}[c+d x]) \left(\frac{4 \left(9 a^2 A-4 A b^2+5 a b B\right)}{15 a^3}-\frac{2 (-4 A b \text{Cos}[c+d x]+5 a B \text{Cos}[c+d x]) \text{Csc}[c+d x]}{15 a^2}-\frac{2 A \text{Csc}[c+d x]^2}{5 a}\right) (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])\right)\Big/$$
$$\left(d \sqrt{\text{Cot}[c+d x]} (A \text{Cos}[c+d x]+B \text{Sin}[c+d x]) \sqrt{a+b \text{Tan}[c+d x]}\right)-$$
$$\left(4 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{\frac{b-\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$
$$(B+A \text{Cot}[c+d x]) \left(i B \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$
$$(A+i B) \text{EllipticPi}\left[-\frac{i \left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(A - i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\left(-\frac{B\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.\right.$$

$$\left.\left.\frac{A\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\bigg/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d\,\sqrt{\text{Cot}[c+d x]}\,\left(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x]\right)\right.$$

$$\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}\right.\right.$$

$$\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (A + i B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+i\,B\right)\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(A-i\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+i\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+i\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Csc}[c+d\,x]^2$$

$$\Bigg(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\text{i}\,B\right)\,\text{EllipticPi}\Big[$$

$$-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(A-\text{i}\,B\right)$$

$$\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\Bigg(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\text{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+i\,B)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}}+\right.$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(A+i\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)-$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\left(A-i\,B\right)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}\right)\Bigg/\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)$$

Problem 637: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^{5/2}\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 243 leaves, 10 steps):

$$-\frac{(A+i B)\,\text{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{i a-b}\,d}-\frac{(A-i B)\,\text{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Tan}[c+d x]}}{\sqrt{i a+b}\,d}+\frac{2\,(2 A b-3 a B)\,\sqrt{\text{Cot}[c+d x]}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{3 a^2 d}-\frac{2 A\,\text{Cot}[c+d x]^{3/2}\,\sqrt{a+b\,\text{Tan}[c+d x]}}{3 a d}$$

Result (type 4, 4488 leaves):

$$\left((B+A\,\text{Cot}[c+d x])\left(-\frac{2\,(-2 A b+3 a B)}{3 a^2}-\frac{2 A\,\text{Cot}[c+d x]}{3 a}\right)(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])\right)\Big/\left(d\,\sqrt{\text{Cot}[c+d x]}\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\,\sqrt{a+b\,\text{Tan}[c+d x]}\right)+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$(B+A\,\text{Cot}[c+d x])\left(-i A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\right.$$

$$i\,(A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(i A+B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\left(-\frac{A\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-\frac{B\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\sqrt{\text{Cot}[c+d\,x]}\ \left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(A+\mathbb{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathbb{i}\,A+B\right)\ \text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \left(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(A+\mathbb{i}\,B\right)\ \text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(\mathrm{i}\,A+B)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\left.\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,A\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\mathrm{i}\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\Big[\right.$$

$$-\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(\mathrm{i}\,A+B)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\big(b+\sqrt{a^2+b^2}\big)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]} - \frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathbb{i}\,A+B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2} -$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,A+B\right)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-i\,A\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+i\,\left(A+i\,B\right)\,\text{EllipticPi}\Bigg[$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(i\,A+B\right)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,A\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\right.\right.$$

$$\left.-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,A+B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\ \sqrt{\mathrm{Sec}[c+d\,x]}\ \left(-\left(\left(A\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(i A+B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1+i\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\Bigg)\sqrt{a+b\,\mathrm{Tan}[c+d x]}\Bigg)$$

Problem 638: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Cot}[c+d x]^{3/2}\,(A+B\,\mathrm{Tan}[c+d x])}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 199 leaves, 9 steps):

$$-\frac{(i A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{i a-b}\,d}+\frac{(i A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d x]}}\right]\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{\mathrm{Tan}[c+d x]}}{\sqrt{i a+b}\,d}-\frac{2 A\sqrt{\mathrm{Cot}[c+d x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d x]}}{a d}$$

Result (type 4, 4447 leaves):

$$-\left(\left(2 A\,(B+A\,\mathrm{Cot}[c+d x])\,(a\,\mathrm{Cos}[c+d x]+b\,\mathrm{Sin}[c+d x])\right)\Big/\left(a d\sqrt{\mathrm{Cot}[c+d x]}\,(A\,\mathrm{Cos}[c+d x]+B\,\mathrm{Sin}[c+d x])\sqrt{a+b\,\mathrm{Tan}[c+d x]}\right)\right)+$$

$$\Bigg(4\,\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$(B+A\,\mathrm{Cot}[c+d x])\left(i B\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{B\,\sqrt{\text{Cot}[c+d\,x]}}{\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\left.\left.\frac{A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\sqrt{\text{Cot}[c+d\,x]}\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(a\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(\mathrm{i}\,B\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(A-\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\Bigg)-\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(A+i\,B\right)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(A-i\,B\right)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\text{i}\,B)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\left.\right]+(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ -\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\text{i}\,B\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+\text{i}\,B)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(i\,B\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(A+i\,B)\ \text{EllipticPi}\left[\right.\right.$$

$$-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}-\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\left(\mathbb{i}\,B\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\mathbb{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,B\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\right.\right.$$

$$-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(A-\mathbb{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d x]}$$

$$\sqrt{\text{Sec}[c+d x]}\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,B\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}}+\right.$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)-$$

$$\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\Bigg/\left(\sqrt{a+b\,\text{Tan}[c+d x]}\right)$$

Problem 639: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Cot}[c+d x]}\ (A+B\,\text{Tan}[c+d x])}{\sqrt{a+b\,\text{Tan}[c+d x]}}\,dx$$

Optimal (type 3, 163 leaves, 8 steps):

$$\frac{(A+\mathrm{i} B)\ \text{ArcTan}\left[\frac{\sqrt{\mathrm{i} a-b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{\mathrm{i} a-b}\ d}+\frac{(A-\mathrm{i} B)\ \text{ArcTanh}\left[\frac{\sqrt{\mathrm{i} a+b}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{a+b\,\text{Tan}[c+d x]}}\right]\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Tan}[c+d x]}}{\sqrt{\mathrm{i} a+b}\ d}$$

Result (type 4, 4378 leaves):

$$-\left(\left(4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d x]}\right.\right.$$

$$\left(-\mathrm{i} A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i} B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left.(\mathrm{i} A+B)\ \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left(\frac{A\sqrt{\text{Cot}[c+d x]}}{\sqrt{\text{Sec}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}+\right.$$

$$\left.\left.\frac{B\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}(A+B\,\text{Tan}[c+d x])\right)\Big/$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right)$$

$$\left(\left(a\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(A+\mathbb{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathbb{i}\,A+B\right)\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \left(-\mathbb{i}\,A\,\text{EllipticF}\right[\right.\right.$$

$$\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[\right.$$

$$-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(\mathrm{i}\,A+B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\left.\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,3\,\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathbb{i}\,A+B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\,+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-\mathbb{i}\,A\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathbb{i}\,\left(A+\mathbb{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathbb{i}\,A+B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(\mathrm{i}\,A+B)\ \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\,A+B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-\mathrm{i}\,A\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\mathrm{i}\,\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(\mathrm{i}\,A+B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\ \text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \left(-\left(\left(A\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+\right.$$

$$\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A+\mathrm{i}\,B)\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (\mathrm{i}\,A+B)\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\ \sqrt{a+b\,\text{Tan}[c+d\,x]}\right)\right)$$

Problem 640: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a+b\,\text{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 228 leaves, 13 steps):

$$\frac{(\mathrm{i}\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a-b}\,d}+$$

$$\frac{2\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{b}\,d}-$$

$$\frac{(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a+b}\,d}$$

Result (type 4, 6452 leaves):

$$\Bigg(4\,a\,(B+A\,\text{Cot}[c+d\,x])$$

$$\Bigg(\Bigg(\Bigg(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\Bigg((A+\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Bigg/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\text{A EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-\frac{1}{a+b+\sqrt{a^2+b^2}}$$

$$\left.\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)$$

$$(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\left(\frac{B\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\right.$$

$$\frac{B\,\text{Cos}[2(c+d\,x)]\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\left.\frac{A\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[2(c+d\,x)]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\,d\sqrt{\text{Cot}[c+d\,x]}\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\right.$$

$$(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])$$

$$\left(\left(a^2\sqrt{\text{Cot}[c+d x]}\left(\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left((A+i B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-i a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-i a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\text{A EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i a+b+\sqrt{a^2+b^2}\right)+\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \Bigg)\Big/$$

$$\left(\sqrt{a^2+b^2}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)+\left(2\,a\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\left(\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\left(\left(A+\mathbb{i}\,B\right)\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a-i\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/\left(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\frac{a\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 (a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\,\mathrm{Csc}[c+d\,x]^2$$

$$\left(\left(\left(B\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\right/\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left((A+\mathbb{i}\,B)\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(A\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(B\,\mathrm{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left((A+\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\text{A EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}[c+d\,x]^{3/2}$$

$$\text{Sin}[c+d\,x]\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}-$$

$$\frac{1}{\sqrt{a^2+b^2}\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}2\,a\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\right.$$

$$\left(-a+b+\sqrt{a^2+b^2}\right)-\left((A+\mathrm{i}\,B)\ \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(\text{A EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(\text{B EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/$$

$$\left(\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\right.$$

$$\left.\frac{1}{a^2+b^2}a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}4\,a\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(-\left(\left(a\,B\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{2\sqrt{a^2+b^2}}}$$

$$\left.\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)\right)+$$

$$\left(a\,(A+\mathrm{i}\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a\,A\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,B\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(a-\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(a\,B\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\ \sqrt{a^2+b^2}\ \left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)\Bigg/\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}\Bigg)$$

Problem 641: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\mathrm{Cot}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\,dx$$

Optimal (type 3, 266 leaves, 14 steps):

$$-\frac{(A+i\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{i\,a-b}\,d}+\frac{(2\,A\,b-a\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{b^{3/2}\,d}-\frac{(A-i\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{i\,a+b}\,d}+\frac{B\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}{b\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}}$$

Result (type 4, 11 682 leaves):

$$\frac{B\,(B+A\,\mathrm{Cot}[c+d\,x])\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])}{b\,d\,\mathrm{Cot}[c+d\,x]^{3/2}\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}-$$

$$\Bigg(\sqrt{2}\,\sqrt{a^2+b^2}\,(B+A\,\mathrm{Cot}[c+d\,x])$$

$$\Bigg(-B\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+$$

$$\left((2 A b - a B)\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-a+b+\sqrt{a^2+b^2}\right) - \left(2\,\text{i}\, A\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\text{i}\, a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\text{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\text{i}\, a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\,\text{i}\, A\, b\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\text{i}\, a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\, b\, B\, \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i}\, a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/$$

$$\left(\mathbb{i}\, a + b + \sqrt{a^2+b^2}\right) -$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(a + b + \sqrt{a^2+b^2}\right) +$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a + b + \sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\left(\frac{A\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} - \frac{a\,B\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}}{2\,b\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} -\right.$$

$$\frac{A\,\text{Cos}\left[2\,(c+d\,x)\right]\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} -$$

$$\left.\frac{B\sqrt{\text{Cot}[c+d\,x]}\;\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}\left[2\,(c+d\,x)\right]}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\sqrt{\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)\Bigg/$$

$$\left(b\,d\,\left(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x]\right)\,\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right.$$

$$\left(\frac{1}{b\,\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)^2}\right.$$

$$\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-B\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.$$

$$\left(\left(2\,A\,b-a\,B\right)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathrm{i}\,A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\Bigg(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\Bigg(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\Bigg[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Bigg]\Bigg)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\Bigg(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\Bigg(2\,A\,b\,\text{EllipticPi}\Bigg[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},$$

$$\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\Bigg)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,B\,\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]\right)\Big/$$

$$\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)\sqrt{\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\left(-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}-$$

$$\Bigg(a\Bigg(-B\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\Big]+$$

$$\Bigg(\left(2\,A\,b-a\,B\right)\text{EllipticPi}\Big[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\, a+b+\sqrt{a^2+b^2}\right) - \left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\right) \sqrt{\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left.\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\ \sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right) \Big/$$

$$\left(\sqrt{2}\ b\,\sqrt{a^2+b^2}\ \sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2+b^2}}\right.$$

$$\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\left(a\,\sqrt{a^2+b^2}\,\left(-B\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-\left(2\,\mathrm{i}\,A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,\mathrm{i}\,A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\right.$$

$$\left.\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left.\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\ \sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)\Big/\left(2\,\sqrt{2}\,b\,\left(b+\sqrt{a^2+b^2}\right)\right.$$

$$\left.\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\left(-2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\sqrt{a^2+b^2}\,\left(-B\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,i\,A\,b\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-i\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\left(-\frac{1}{2}\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]^2-\frac{1}{2}\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\ \sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\left.\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right)\Big/$$

$$\left(\sqrt{2}\ b\sqrt{\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(\sqrt{a^2+b^2}\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-a+b+\sqrt{a^2+b^2}\right) - \left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(-\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) + \left(2\,\mathrm{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right) +$$

$$\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\text{i}\, a+b+\sqrt{a^2+b^2}\right)-\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)\sqrt{\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.\right.$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\Big/$$

$$\left(\sqrt{2}\, b \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}} \left(-2\, b\, \text{Tan}\left[\frac{1}{2}(c+d x)\right]+a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(\sqrt{a^2+b^2}\left(-B\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]+\right.\right.$$

$$\left((2\,A\,b-a\,B)\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,\mathbb{i}\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(-\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+$$

$$\left(2\,i\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(i\,a+b+\sqrt{a^2+b^2}\right)+\left(2\,b\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{i\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(i\,a+b+\sqrt{a^2+b^2}\right)-$$

$$\left(2\,A\,b\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+b+\sqrt{a^2+b^2}\right)+\left(a\,B\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\bigg/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\;\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\left(\frac{b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2-a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}-\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\right)\Big/$$

$$\left(\sqrt{2}\,b\,\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right.$$

$$\left.\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\frac{1}{b\,\left(-2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)}$$

$$\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}$$

$$\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2+b^2}}$$

$$\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\left(a\,B\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\right.\right.$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg) -$$

$$\left(a\,(2\,A\,b-a\,B)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\Bigg) +$$

$$\left(i\,a\,A\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-i\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-i\,a+b+\sqrt{a^2+b^2}}\right)\Bigg) -$$

$$\left(a\,b\,B\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-i\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-i\,a+b+\sqrt{a^2+b^2}}\right)\Bigg) -$$

$$\left(i\,a\,A\,b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\Bigg(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(i\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\text{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a\,b\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\text{i}\,a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\text{i}\,a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\,A\,b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(2\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)-$$

$$\left(a^2\,B\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left.\left.\left.\left.\left.\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{a+b+\sqrt{a^2+b^2}}\right)\right)\right)\right)\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)$$

Problem 642: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[c+d\,x]^{5/2}\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 316 leaves, 11 steps):

$$-\frac{(i\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{3/2}\,d}-\frac{(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{3/2}\,d}+\frac{2\,b\,(5\,a^2\,A\,b+8\,A\,b^3-3\,a^3\,B-6\,a\,b^2\,B)}{3\,a^3\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}+\frac{2\,(4\,A\,b-3\,a\,B)\,\sqrt{\text{Cot}[c+d\,x]}}{3\,a^2\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}-\frac{2\,A\,\text{Cot}[c+d\,x]^{3/2}}{3\,a\,d\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4988 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\left(-\frac{2\,(-5\,A\,b+3\,a\,B)}{3\,a^3}-\frac{2\,A\,\text{Cot}[c+d\,x]}{3\,a^2}-\frac{2\,(-A\,b^4\,\text{Sin}[c+d\,x]+a\,b^3\,B\,\text{Sin}[c+d\,x])}{a^3\,(a-i\,b)\,(a+i\,b)\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)(A+B\,\text{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{3/2}\right)-$$

$$\left(4\,i\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left((a A+b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)\,(A+i B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)$$

$$\left.(A-i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])$$

$$\left(-\left(\left(a A\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)\,(a+i b)\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)-\right.$$

$$\left(b B\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)\,(a+i b)\,\sqrt{\text{Sec}[c+d x]}\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)+$$

$$\frac{A b\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{(a-i b)\,(a+i b)\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-$$

$$\left.\frac{a B\sqrt{\text{Cot}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{(a-i b)\,(a+i b)\,\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

$$\left.(A+B\,\text{Tan}[c+d x])\right)\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right.$$

$$\left(\left(i\,a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d x]}\right.\right.$$

$$\left((a A+b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)\,\left(b-\sqrt{a^2+b^2}\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}\right)+\left(\mathbb{i}\,a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\text{Cot}\left[c+d\,x\right]}\,\left(\left(a\,A+b\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}\left[c+d\,x\right]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\ \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}$$

$$3\,\mathrm{i}\sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\operatorname{Cot}[c+d x]}$$

$$\left((a A+b B) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i} b)(A+\mathrm{i} B)\right.$$

$$\operatorname{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i} b)(A-\mathrm{i} B) \operatorname{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\operatorname{Sec}[c+d x]}\ \sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]\right)^{3/2}}\ 2\,\mathrm{i} \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\operatorname{Cot}[c+d x]}$$

$$\left((a A+b B) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i} b)(A+\mathrm{i} B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a+i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\Bigg((a\,A+b\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a+i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a\,A+b\,B)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)\,\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(-\left(\left(\mathrm{i}\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,A+b\,B\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\right)\right)+$$

$$\left(\mathrm{i}\,\left(a-\mathrm{i}\,b\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A+\mathrm{i}\,B\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\right)+$$

$$\left(\mathrm{i}\,\left(a+\mathrm{i}\,b\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(A-\mathrm{i}\,B\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\Big/$$

$$\left(4\,\left(1+\mathrm{i}\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}\right)$$

Problem 643: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\operatorname{Cot}[c+d x]^{3/2}\,(A+B\operatorname{Tan}[c+d x])}{(a+b\operatorname{Tan}[c+d x])^{3/2}}\,dx$$

Optimal (type 3, 256 leaves, 10 steps):

$$\frac{(A+i B)\operatorname{ArcTan}\left[\frac{\sqrt{i a-b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{(i a-b)^{3/2}\,d}-\frac{(A-i B)\operatorname{ArcTanh}\left[\frac{\sqrt{i a+b}\,\sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b\operatorname{Tan}[c+d x]}}\right]\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{\operatorname{Tan}[c+d x]}}{(i a+b)^{3/2}\,d}-\frac{2 b\left(a^2 A+2 A b^2-a b B\right)}{a^2\left(a^2+b^2\right) d\sqrt{\operatorname{Cot}[c+d x]}\,\sqrt{a+b\operatorname{Tan}[c+d x]}}-\frac{2 A\sqrt{\operatorname{Cot}[c+d x]}}{a d\sqrt{a+b\operatorname{Tan}[c+d x]}}$$

Result (type 4, 4969 leaves):

$$\left(\sqrt{\operatorname{Cot}[c+d x]}\operatorname{Sec}[c+d x]\left(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]\right)^2\left(-\frac{2 A}{a^2}+\frac{2\left(-A b^3\operatorname{Sin}[c+d x]+a b^2 B\operatorname{Sin}[c+d x]\right)}{a^2 (a-i b)(a+i b)\left(a\operatorname{Cos}[c+d x]+b\operatorname{Sin}[c+d x]\right)}\right)\left(A+B\operatorname{Tan}[c+d x]\right)\right)\Big/\left(d\left(A\operatorname{Cos}[c+d x]+B\operatorname{Sin}[c+d x]\right)\left(a+b\operatorname{Tan}[c+d x]\right)^{3/2}\right)+$$

$$\left(4\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\operatorname{Cot}[c+d x]}\right.$$

$$\left(-i(A b-a B)\operatorname{EllipticF}\left[i\operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)(A+i B)\right)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+i b)$$

$$\left.(A-i B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]\,(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x])$$

$$\left(-\left(\left(A\,b\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)(a+i b)\sqrt{\text{Sec}[c+d x]}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)\right)+\right.$$

$$\left(a\,B\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)(a+i b)\sqrt{\text{Sec}[c+d x]}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)-$$

$$\frac{a\,A\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{(a-i b)(a+i b)\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}-$$

$$\left.\frac{b\,B\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{(a-i b)(a+i b)\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}$$

$$\left.(A+B\,\text{Tan}[c+d x])\right)\Bigg/\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,(A\,\text{Cos}[c+d x]+B\,\text{Sin}[c+d x])\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}\left(-i(A b-a B)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)(A+i B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/\left(\left(a^2+b^2\right)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\left(-\mathrm{i}\left(A\,b-a\,B\right)\text{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$\left(a+\mathrm{i}\,b\right)\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,(A-i\,B)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\ (b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x])\ \mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\left(1\Big/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}$$

$$\mathrm{Csc}[c+d\,x]^2\left(-\mathrm{i}\,(A\,b-a\,B)\ \mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\ \mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\ \mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\ \mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{(a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\big[\frac{1}{2}\,(c+d\,x)\big]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\,\left(-i\,(A\,b-a\,B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)\,(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(A\,b-a\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(A+i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(i\,(a+i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Bigg/\left((a+b\,\text{Tan}[c+d\,x])^{3/2}\right)$$

Problem 644: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Cot}[c+d\,x]}\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 215 leaves, 9 steps):

$$\frac{\left(\mathrm{i}\,A-B\right)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\left(\mathrm{i}\,a-b\right)^{3/2}\,d}+\frac{\left(\mathrm{i}\,A+B\right)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\left(\mathrm{i}\,a+b\right)^{3/2}\,d}+\frac{2\,b\,\left(A\,b-a\,B\right)}{a\,\left(a^2+b^2\right)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 4931 leaves):

$$-\left(\left(2\,\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\,\left(-A\,b^2\,\text{Sin}[c+d\,x]+a\,b\,B\,\text{Sin}[c+d\,x]\right)\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(a\,\left(a-\mathrm{i}\,b\right)\,\left(a+\mathrm{i}\,b\right)\,d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\right)\right)+$$

$$\left(4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\left(a\,A+b\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)$$

$$\left.\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)$$

$$\left(\left(a\,A\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)\,\left(a+\mathbb{i}\,b\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\right.$$

$$\left(b\,B\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)\,\left(a+\mathbb{i}\,b\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\frac{A\,b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)\,\left(a+\mathbb{i}\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{a\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)\,\left(a+\mathbb{i}\,b\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{3/2}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(\left(a^2+b^2\right)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(\mathbb{i}\,a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}\right.\right.\right.$$

$$\left(\left(a\,A+b\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)\,\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\right.$$

$$\left.\left.\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\,\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\Bigg)-\left(i\,a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\sqrt{\mathrm{Cot}[c+d\,x]}\left((a\,A+b\,B)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)\,(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)\,(A-i\,B)\,\mathrm{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{(a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}$$

$$3\,i\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left((a A+b B)\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)(A+i B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i b)(A-i B)\, \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\, \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\, -$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\, \text{Cos}[c+d x]+b\, \text{Sin}[c+d x])^{3/2}}\, 2\, i\, \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\, \sqrt{1+\frac{a\, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\, \sqrt{\text{Cot}[c+d x]}$$

$$\left((a A+b B)\, \text{EllipticF}\left[i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)(A+i B)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+i b)(A-i B)\, \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\left(1\Bigg/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\text{Csc}[c+d\,x]^2\left(\left(a\,A+b\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathrm{i}\,b\right)\,\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a\,A+b\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)\,\left(A+\mathrm{i}\,B\right)\right.$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+i\,b\right)\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,2\,i\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a\,A+b\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-i\,b\right)\left(A+i\,B\right)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+i\,b\right)\left(A-i\,B\right)\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,A+b\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\ \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}\Bigg)$$

Problem 645: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Cot}[c+d\,x]}\ \left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 210 leaves, 9 steps):

$$-\frac{(A+iB)\,\text{ArcTan}\left[\frac{\sqrt{ia-b}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+b\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}}{(ia-b)^{3/2}\,d}+\frac{(A-iB)\,\text{ArcTanh}\left[\frac{\sqrt{ia+b}\,\sqrt{\text{Tan}[c+dx]}}{\sqrt{a+b\,\text{Tan}[c+dx]}}\right]\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Tan}[c+dx]}}{(ia+b)^{3/2}\,d}-\frac{2\,(Ab-aB)}{(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+dx]}\,\sqrt{a+b\,\text{Tan}[c+dx]}}$$

Result (type 4, 4928 leaves):

$$\Big(2\sqrt{\text{Cot}[c+dx]}\,\text{Sec}[c+dx]\,(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx])\,(-A\,b\,\text{Sin}[c+dx]+a\,B\,\text{Sin}[c+dx])\,(A+B\,\text{Tan}[c+dx])\Big)\Big/\Big((a-ib)\,(a+ib)\,d\,(A\,\text{Cos}[c+dx]+B\,\text{Sin}[c+dx])\,(a+b\,\text{Tan}[c+dx])^{3/2}\Big)-$$

$$\Bigg(4\,\text{Cos}\left[\frac{1}{2}(c+dx)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+dx)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+dx)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+dx]}$$

$$\Bigg(-i\,(Ab-aB)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-ib)\,(A+iB)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+ib)$$

$$(A-iB)\,\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+dx)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+dx]\,(a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx])$$

$$\Bigg(\left(A\,b\sqrt{\text{Cot}[c+dx]}\right)\Big/\left((a-ib)\,(a+ib)\,\sqrt{\text{Sec}[c+dx]}\,\sqrt{a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]}\right)-$$

$$\left(a\,B\sqrt{\text{Cot}[c+dx]}\right)\Big/\left((a-ib)\,(a+ib)\,\sqrt{\text{Sec}[c+dx]}\,\sqrt{a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]}\right)+$$

$$\frac{a\,A\sqrt{\text{Cot}[c+dx]}\,\sqrt{\text{Sec}[c+dx]}\,\text{Sin}[c+dx]}{(a-ib)\,(a+ib)\,\sqrt{a\,\text{Cos}[c+dx]+b\,\text{Sin}[c+dx]}}+$$

$$\left.\frac{b\,B\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{(a-\mathrm{i}\,b)\,(a+\mathrm{i}\,b)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

$$\left.(A+B\,\mathrm{Tan}[c+d\,x])\right)\Bigg/\left((a^2+b^2)\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right.$$

$$\left(\left(a\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\right.\right.$$

$$\left(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\Bigg)\Bigg/\left((a^2+b^2)\right.$$

$$\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}$$

$$\left.\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+\left(a\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\right.$$

$$\left(-\mathbb{i}\,(A\,b-a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left((a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)-$$

$$\frac{1}{(a^2+b^2)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\mathbb{i}\,(A\,b-a\,B)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\ +$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(-\mathrm{i}\,(A\,b-a\,B)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\ -$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + (a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\mathrm{Csc}[c+d\,x]^2\left(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(-\mathrm{i}\,(A\,b-a\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathrm{i}\,b)\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}\left[\frac{1}{2}(c+d x)\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\frac{1}{\left(a^2+b^2\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}$$

$$2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\ \left(-\mathrm{i}\,(A b-a B)\ \text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] -\right.$$

$$(a-\mathrm{i}\,b)\ (A+\mathrm{i}\,B)\ \text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+\mathrm{i}\,b)\ (A-\mathrm{i}\,B)\ \text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \text{Sec}[c+d x]^{3/2}\ \text{Sin}[c+d x]$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} - \frac{1}{\left(a^2+b^2\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}$$

$$4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d x]}\ \sqrt{\text{Sec}[c+d x]}\ \left(-\left(\left(\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (A b-a B)\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \middle/ \right.\right.$$

$$\left.\left.\left(4 \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1-\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+\mathrm{i}\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg|\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}\Bigg)$$

Problem 646: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\mathrm{Tan}[c+d\,x]}{\mathrm{Cot}[c+d\,x]^{3/2}\,\left(a+b\,\mathrm{Tan}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 279 leaves, 14 steps):

$$-\frac{(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{3/2}\,d}+\frac{2\,B\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{b^{3/2}\,d}-\frac{(\mathrm{i}\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{3/2}\,d}+\frac{2\,a\,(A\,b-a\,B)}{b\,(a^2+b^2)\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 65 204 leaves): Display of huge result suppressed!

Problem 647: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cot}[c+d x]^{5/2} (A+B \operatorname{Tan}[c+d x])}{(a+b \operatorname{Tan}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 399 leaves, 12 steps):

$$\frac{(A+i B) \operatorname{ArcTan}\left[\frac{\sqrt{i a-b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{(i a-b)^{5/2} d}+$$
$$\frac{(A-i B) \operatorname{ArcTanh}\left[\frac{\sqrt{i a+b} \sqrt{\operatorname{Tan}[c+d x]}}{\sqrt{a+b \operatorname{Tan}[c+d x]}}\right] \sqrt{\operatorname{Cot}[c+d x]} \sqrt{\operatorname{Tan}[c+d x]}}{(i a+b)^{5/2} d}+$$
$$\frac{2 b (7 a^2 A b+8 A b^3-3 a^3 B-4 a b^2 B)}{3 a^3 (a^2+b^2) d \sqrt{\operatorname{Cot}[c+d x]} (a+b \operatorname{Tan}[c+d x])^{3/2}}+\frac{2 (2 A b-a B) \sqrt{\operatorname{Cot}[c+d x]}}{a^2 d (a+b \operatorname{Tan}[c+d x])^{3/2}}-$$
$$\frac{2 A \operatorname{Cot}[c+d x]^{3/2}}{3 a d (a+b \operatorname{Tan}[c+d x])^{3/2}}+\frac{2 b (8 a^4 A b+30 a^2 A b^3+16 A b^5-3 a^5 B-17 a^3 b^2 B-8 a b^4 B)}{3 a^4 (a^2+b^2)^2 d \sqrt{\operatorname{Cot}[c+d x]} \sqrt{a+b \operatorname{Tan}[c+d x]}}$$

Result (type 4, 5403 leaves):

$$\left(\sqrt{\operatorname{Cot}[c+d x]} \operatorname{Sec}[c+d x]^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^3\right.$$
$$\left(-\frac{2 (-8 a^4 A b-16 a^2 A b^3-9 A b^5+3 a^5 B+6 a^3 b^2 B+4 a b^4 B)}{3 a^4 (a-i b)^2 (a+i b)^2}-\right.$$
$$\frac{2 A \operatorname{Cot}[c+d x]}{3 a^3}+\frac{2 b^4 (-A b+a B)}{3 a^2 (a-i b)^2 (a+i b)^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])^2}-$$
$$\left(2 (-15 a^2 A b^4 \operatorname{Sin}[c+d x]-7 A b^6 \operatorname{Sin}[c+d x]+12 a^3 b^3 B \operatorname{Sin}[c+d x]+\right.$$
$$\left.\left.4 a b^5 B \operatorname{Sin}[c+d x])\right) \Big/ \left(3 a^4 (a-i b)^2 (a+i b)^2 (a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x])\right)\right)$$
$$\left.(A+B \operatorname{Tan}[c+d x])\right) \Big/ \left(d (A \operatorname{Cos}[c+d x]+B \operatorname{Sin}[c+d x]) (a+b \operatorname{Tan}[c+d x])^{5/2}\right)-$$
$$\left(4 i \operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \operatorname{Cot}\left[\frac{1}{2} (c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\operatorname{Cot}[c+d x]}\right.$$
$$\left((a^2 A-A b^2+2 a b B) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a - i b)^2 (A + i B) \text{ EllipticPi}\Big[-\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a},$$

$$i \text{ ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big] - (a + i b)^2 (A - i B)$$

$$\text{EllipticPi}\Big[\frac{i \left(b + \sqrt{a^2 + b^2}\right)}{a}, i \text{ ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c + d x)\right]}}\Big], \frac{b + \sqrt{a^2 + b^2}}{b - \sqrt{a^2 + b^2}}\Big]\Bigg)$$

$$\text{Sec}[c + d x]^2 (a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x])^2 \Bigg(-\left(\left(a^2 A \sqrt{\text{Cot}[c + d x]}\right) \Big/\right.$$

$$\left.\left((a - i b)^2 (a + i b)^2 \sqrt{\text{Sec}[c + d x]} \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}\right)\right) +$$

$$\left(A b^2 \sqrt{\text{Cot}[c + d x]}\right) \Big/ \left((a - i b)^2 (a + i b)^2 \sqrt{\text{Sec}[c + d x]} \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}\right) -$$

$$\left(2 a b B \sqrt{\text{Cot}[c + d x]}\right) \Big/$$

$$\left((a - i b)^2 (a + i b)^2 \sqrt{\text{Sec}[c + d x]} \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}\right) +$$

$$\frac{2 a A b \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Sec}[c + d x]} \text{ Sin}[c + d x]}{(a - i b)^2 (a + i b)^2 \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}} -$$

$$\frac{a^2 B \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Sec}[c + d x]} \text{ Sin}[c + d x]}{(a - i b)^2 (a + i b)^2 \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}} +$$

$$\frac{b^2 B \sqrt{\text{Cot}[c + d x]} \sqrt{\text{Sec}[c + d x]} \text{ Sin}[c + d x]}{(a - i b)^2 (a + i b)^2 \sqrt{a \text{ Cos}[c + d x] + b \text{ Sin}[c + d x]}}\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c + d x)\right]^{3/2} (A + B \text{ Tan}[c + d x])\Bigg) \Bigg/$$

$$\Bigg((a^2 + b^2)^2 \sqrt{\frac{a}{b + \sqrt{a^2 + b^2}}} \; d \; (A \text{ Cos}[c + d x] + B \text{ Sin}[c + d x])$$

$$\Bigg(\Bigg(i a \sqrt{\frac{b + \sqrt{a^2 + b^2} + a \text{ Cot}\left[\frac{1}{2}(c + d x)\right]}{b + \sqrt{a^2 + b^2}}} \sqrt{\text{Cot}[c + d x]}$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\right) \Big/$$

$$\left(\left(a^2+b^2\right)^2 \left(b-\sqrt{a^2+b^2}\right) \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \, \text{Cos}[c+d x] + b \, \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right) +$$

$$\left(i \, a \sqrt{1+\frac{a \, \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.$$

$$\left(\left(a^2 A - A b^2 + 2 a b B\right) \text{EllipticF}\left[i \, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \, \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a + i b)^2 (A - i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}$$

$$3\,\mathrm{i}\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\ \sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ +$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ (a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{3/2}}\,2\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ (b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])\ \text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \text{Csc}[c+d\,x]^2$$

$$\left(\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a+\mathrm{i}\, b\right)^2 \left(A-\mathrm{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c+d\,x]}\; \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2} +$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} 4\,\mathrm{i}\, \text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\; \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\; \sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right) \text{EllipticF}\Big[\mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$\left(a-\mathrm{i}\, b\right)^2 \left(A+\mathrm{i}\, B\right) \text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - \left(a+\mathrm{i}\, b\right)^2 \left(A-\mathrm{i}\, B\right)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\; \text{Sin}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\; \text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2} -$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\; \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}} 2\,\mathrm{i}\, \text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\; \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\; \sqrt{\text{Cot}[c+d\,x]}$$

$$\left((a^2 A - A b^2 + 2 a b B)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - \right.$$

$$(a - i b)^2 (A + i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left. i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] - (a + i b)^2 (A - i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} -$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\sqrt{\text{Sec}[c+d x]}\left(-\left(\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a^2 A - A b^2 + 2 a b B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\right/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right)\right) +$$

$$\left(i\,(a - i b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A + i B)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(4\left(1 - i\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\right) +$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\Bigg)$$

Problem 648: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cot}[c+d\,x]^{3/2}\,(A+B\,\text{Tan}[c+d\,x])}{(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 341 leaves, 11 steps):

$$\frac{(i\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{5/2}\,d}-\frac{(i\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{5/2}\,d}-\frac{2\,b\,(3\,a^2\,A+4\,A\,b^2-a\,b\,B)}{3\,a^2\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}-\frac{2\,A\,\sqrt{\text{Cot}[c+d\,x]}}{a\,d\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}-\frac{2\,b\,(3\,a^4\,A+17\,a^2\,A\,b^2+8\,A\,b^4-8\,a^3\,b\,B-2\,a\,b^3\,B)}{3\,a^3\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5368 leaves):

$$\Bigg(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\,\Bigg(-\frac{2\,(3\,a^4\,A+6\,a^2\,A\,b^2+4\,A\,b^4-a\,b^3\,B)}{3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2}-\frac{2\,b^3\,(-A\,b+a\,B)}{3\,a\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\Big(2\,(-12\,a^2\,A\,b^3\,\text{Sin}[c+d\,x]-4\,A\,b^5\,\text{Sin}[c+d\,x]+9\,a^3\,b^2\,B\,\text{Sin}[c+d\,x]+a\,b^4\,B\,\text{Sin}[c+d\,x])\Big)\Big/\Big(3\,a^3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\Big)\Bigg)\,(A+B\,\text{Tan}[c+d\,x])\Bigg)\Bigg/$$

$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)+$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\,\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)^2\,\left(A-\mathbb{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\,\left(-\left(\left(2\,a\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\right.\right.$$

$$\left.\left(\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+$$

$$\left(a^2\,B\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\frac{a^2\,A\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\frac{A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\left.\frac{2\,a\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a-\mathbb{i}\,b\right)^2\,\left(a+\mathbb{i}\,b\right)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ (A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\right.$$

$$\left(-\left(\left(a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}\ \left(\mathrm{i}\ (-2\,a\,A\,b+a^2\,B-b^2\,B)\right.\right.\right.\right.$$

$$\mathrm{EllipticF}\left[\mathrm{i}\ \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\ (A+\mathrm{i}\,B)$$

$$\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+\mathrm{i}\,b)^2\ (A-\mathrm{i}\,B)\ \mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\ \mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Bigg/\left((a^2+b^2)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\ \sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)\right)-$$

$$\left(a\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}\ \left(\mathrm{i}\ (-2\,a\,A\,b+a^2\,B-b^2\,B)\right.\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2(A+\mathrm{i}\,B)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+$$

$$(a+\mathrm{i}\,b)^2(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)+$$

$$\frac{1}{(a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + \left(a+\mathbb{i}\, b\right)^2 \left(A-\mathbb{i}\, B\right) \text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg) \sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]} -$$

$$\frac{1}{\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}} 2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\mathbb{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right) \text{EllipticF}\Big[\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -$$

$$\left(a-\mathbb{i}\, b\right)^2 \left(A+\mathbb{i}\, B\right) \text{EllipticPi}\Big[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] + \left(a+\mathbb{i}\, b\right)^2 \left(A-\mathbb{i}\, B\right)$$

$$\text{EllipticPi}\Big[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \mathbb{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right) \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2} -$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)$$

$$2\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2 \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\text{Csc}[c+d\,x]^2$$

$$\left(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d x]}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\left(i\left(-2 a A b+a^2 B-b^2 B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i b)^2 (A-i B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\, i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}}\,4\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}$$

$$\sqrt{\operatorname{Sec}[c+d\,x]}\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{4\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\,\left(1+\mathrm{i}\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\operatorname{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\Bigg/\left(\operatorname{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,\left(a+b\operatorname{Tan}[c+d\,x]\right)^{5/2}\right)$$

Problem 649: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\operatorname{Cot}[c+d\,x]}\,\left(A+B\operatorname{Tan}[c+d\,x]\right)}{\left(a+b\operatorname{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 287 leaves, 10 steps):

$$-\frac{(A+\mathrm{i}\,B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{5/2}\,d}-\frac{(A-\mathrm{i}\,B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{5/2}\,d}+\frac{2\,b\,(A\,b-a\,B)}{3\,a\,(a^2+b^2)\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+\frac{2\,b\,(8\,a^2\,A\,b+2\,A\,b^3-5\,a^3\,B+a\,b^2\,B)}{3\,a^2\,(a^2+b^2)^2\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 5350 leaves):

$$\left(\sqrt{\mathrm{Cot}[c+d\,x]}\,\mathrm{Sec}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^3\left(-\frac{2\,b^2\,(-A\,b+a\,B)}{3\,a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}+\frac{2\,b^2\,(-A\,b+a\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^2}-\left(2\,(-9\,a^2\,A\,b^2\,\mathrm{Sin}[c+d\,x]-A\,b^4\,\mathrm{Sin}[c+d\,x]+6\,a^3\,b\,B\,\mathrm{Sin}[c+d\,x]-2\,a\,b^3\,B\,\mathrm{Sin}[c+d\,x])\right)\Big/\left(3\,a^2\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])\right)\right)(A+B\,\mathrm{Tan}[c+d\,x])\right)\Big/\left(d\,(A\,\mathrm{Cos}[c+d\,x]+B\,\mathrm{Sin}[c+d\,x])\,(a+b\,\mathrm{Tan}[c+d\,x])^{5/2}\right)+$$

$$\left(4\,\mathrm{i}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\right.$$

$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-\mathrm{i}\,b)^2\right.$$

$$(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\right.$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\text{Sec}[c+d x]^2\left(a\text{Cos}[c+d x]+b\text{Sin}[c+d x]\right)^2$$

$$\left(\left(a^2 A\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)^2(a+i b)^2\sqrt{\text{Sec}[c+d x]}\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}\right)-\right.$$

$$\left(A b^2\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)^2(a+i b)^2\sqrt{\text{Sec}[c+d x]}\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}\right)+$$

$$\left(2 a b B\sqrt{\text{Cot}[c+d x]}\right)\Big/\left((a-i b)^2(a+i b)^2\sqrt{\text{Sec}[c+d x]}\right.$$

$$\left.\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}\right)-\frac{2 a A b\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Sec}[c+d x]}\text{Sin}[c+d x]}{(a-i b)^2(a+i b)^2\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}}+$$

$$\frac{a^2 B\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Sec}[c+d x]}\text{Sin}[c+d x]}{(a-i b)^2(a+i b)^2\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}}-$$

$$\left.\frac{b^2 B\sqrt{\text{Cot}[c+d x]}\sqrt{\text{Sec}[c+d x]}\text{Sin}[c+d x]}{(a-i b)^2(a+i b)^2\sqrt{a\text{Cos}[c+d x]+b\text{Sin}[c+d x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2}\left(A+B\text{Tan}[c+d x]\right)\right)\Big/$$

$$\left((a^2+b^2)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\left(A\text{Cos}[c+d x]+B\text{Sin}[c+d x]\right)\right.$$

$$\left(-\left(\left(i a\sqrt{\frac{b+\sqrt{a^2+b^2}+a\text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d x]}\left((a^2 A-A b^2+2 a b B)\right.\right.\right.\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a-i b)^2(A+i B)$$

$$\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/\left(\left(a^2+b^2\right)^2\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)\right)-$$

$$\left(\mathrm{i}\,a\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\ \left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\right.\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Bigg/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\,\mathrm{i}\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\text{EllipticPi}\left[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\;-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^{3/2}}\,2\,\mathrm{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\left.\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} -$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\mathrm{Csc}[c+d\,x]^2$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] -\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\left.\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2} -$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}\,4\,\mathrm{i}\,\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2 A-A b^2+2 a b B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\,(A-i\,B)$$

$$\left.\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\;2\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2 A-A b^2+2 a b B\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i\,b)^2\,(A-i\,B)$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(i\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\right.\right.$$

$$\left.\left.\left(4\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(4\left(1-i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\Bigg)\Big/\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Bigg)$$

Problem 650: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 284 leaves, 10 steps):

$$-\frac{(\mathrm{i}\,A-B)\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{5/2}\,d}+\frac{(\mathrm{i}\,A+B)\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{5/2}\,d}-\frac{2\,(A\,b-a\,B)}{3\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{3/2}}-\frac{2\,(5\,a^2\,A\,b-A\,b^3-2\,a^3\,B+4\,a\,b^2\,B)}{3\,a\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5338 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^3\right.$$

$$\left(\frac{2\,b\,(-A\,b+a\,B)}{3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2}-\frac{2\,a\,b\,(-A\,b+a\,B)}{3\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2}+\right.$$

$$\left(2\,\left(-6\,a^2\,A\,b\,\text{Sin}[c+d\,x]+2\,A\,b^3\,\text{Sin}[c+d\,x]+3\,a^3\,B\,\text{Sin}[c+d\,x]-5\,a\,b^2\,B\,\text{Sin}[c+d\,x]\right)\right)\Big/$$

$$\left.\left.\left(3\,a\,(a-\mathrm{i}\,b)^2\,(a+\mathrm{i}\,b)^2\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)\right)\right)\left(A+B\,\text{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\,\left(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x]\right)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\right)-$$

$$\left(4\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\mathrm{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}, \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right] + (a+\text{i} b)^2 (A-\text{i} B)$$

$$\left.\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a}, \text{i ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d x]^2 (a \text{Cos}[c+d x]+b \text{Sin}[c+d x])^2 \left(\left(2 a A b \sqrt{\text{Cot}[c+d x]}\right) \Big/\right.$$
$$\left(\left(a-\text{i} b\right)^2 (a+\text{i} b)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right) -$$
$$\left(a^2 B \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left(\left(a-\text{i} b\right)^2 (a+\text{i} b)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right) +$$
$$\left(b^2 B \sqrt{\text{Cot}[c+d x]}\right) \Big/ \left(\left(a-\text{i} b\right)^2 (a+\text{i} b)^2 \sqrt{\text{Sec}[c+d x]} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}\right) +$$
$$\frac{a^2 A \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{(a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} -$$
$$\frac{A b^2 \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{(a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}} +$$
$$\left.\frac{2 a b B \sqrt{\text{Cot}[c+d x]} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{(a-\text{i} b)^2 (a+\text{i} b)^2 \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^{3/2} (A+B \text{Tan}[c+d x])\right) \Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\, d\, (A \text{Cos}[c+d x]+B \text{Sin}[c+d x])\right.$$

$$\left(\left(a \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}\right.\right.$$

$$\left(\mathbb{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}\left[c+d\,x\right]}\Bigg)\Bigg/\left(\left(a^2+b^2\right)^2\right.$$

$$\left(b-\sqrt{a^2+b^2}\right)\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}\left[c+d\,x\right]+b\,\text{Sin}\left[c+d\,x\right]}$$

$$\left.\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}\right)+\left(a\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}\left[c+d\,x\right]}\right.$$

$$\left(\mathbb{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+\left(a+\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)\,\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}$$

$$3\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathbb{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)\,\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\ +$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{3/2}}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\left(i\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]+(a+i\,b)^2\,(A-i\,B)$$

$$\left.\mathrm{EllipticPi}\left[\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\left(1\middle/\left(\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\mathrm{Csc}[c+d\,x]^2$$

$$\left(i\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i\,b)^2\,(A+i\,B)\,\mathrm{EllipticPi}\left[-\frac{i\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,i\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)\,\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\left.\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)\sqrt{\text{Sec}[c+d\,x]}\,\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}4\,\text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\mathrm{i}\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\right.$$

$$\left(a-\mathrm{i}\,b\right)^2\left(A+\mathrm{i}\,B\right)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+\left(a+\mathrm{i}\,b\right)^2\left(A-\mathrm{i}\,B\right)$$

$$\left.\text{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\Big],\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\,\text{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}2\,\text{Cos}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\mathrm{i}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\text{EllipticPi}\Big[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]+(a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\text{EllipticPi}\Big[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\Big],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(-2\,a\,A\,b+a^2\,B-b^2\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}}+\right.$$

$$\left(\mathrm{i}\,(a-\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+\mathrm{i}\,B)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\right)\Big/\left(4\,\left(1-\mathrm{i}\,\text{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{3/2}\right)-$$

$$\left(\mathrm{i}\,(a+\mathrm{i}\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-\mathrm{i}\,B)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\right)\Big/$$

$$\left(4\left(1+i\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^{3/2}\right)(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)$$

Problem 651: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 3, 284 leaves, 10 steps):

$$\frac{(A+i\,B)\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a-b)^{5/2}\,d}+$$

$$\frac{(A-i\,B)\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{(i\,a+b)^{5/2}\,d}+$$

$$\frac{2\,a\,(A\,b-a\,B)}{3\,b\,(a^2+b^2)\,d\,\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}+$$

$$\frac{2\,(2\,a^2\,A\,b-4\,A\,b^3+a^3\,B+7\,a\,b^2\,B)}{3\,b\,(a^2+b^2)^2\,d\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

Result (type 4, 5323 leaves):

$$\left(\sqrt{\text{Cot}[c+d\,x]}\,\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^3\right.$$

$$\left(-\frac{2\,(-A\,b+a\,B)}{3\,(a-i\,b)^2\,(a+i\,b)^2}+\frac{2\,a^2\,(-A\,b+a\,B)}{3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2}+\right.$$

$$\left.\left.\frac{2\,(3\,a^2\,A\,\text{Sin}[c+d\,x]-5\,A\,b^2\,\text{Sin}[c+d\,x]+8\,a\,b\,B\,\text{Sin}[c+d\,x])}{3\,(a-i\,b)^2\,(a+i\,b)^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}\right)(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left(d\,(A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\,(a+b\,\text{Tan}[c+d\,x])^{5/2}\right)-$$

$$\left(4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\mathbb{i}\,b)^2\,(A+\mathbb{i}\,B)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\mathbb{i}\,b)^2\,(A-\mathbb{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\,\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])^2\,\left(-\left(\left(a^2\,A\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\right.\right.$$

$$\left.\left(\left(a-\mathbb{i}\,b\right)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\right)+$$

$$\left(A\,b^2\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)-$$

$$\left(2\,a\,b\,B\,\sqrt{\text{Cot}[c+d\,x]}\right)\Big/\left(\left(a-\mathbb{i}\,b\right)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{\text{Sec}[c+d\,x]}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\frac{2\,a\,A\,b\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-$$

$$\frac{a^2\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}+$$

$$\left.\frac{b^2\,B\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{(a-\mathbb{i}\,b)^2\,(a+\mathbb{i}\,b)^2\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\,(A+B\,\text{Tan}[c+d\,x])\right)\Big/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ (A\,\text{Cos}[c+d\,x]+B\,\text{Sin}[c+d\,x])\right.$$

$$\left(\left(\text{i}\ a \sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left((a^2\,A-A\,b^2+2\,a\,b\,B)\ \text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i}\,b)^2\ (A+\text{i}\,B)\ \text{EllipticPi}\left[-\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\ (A-\text{i}\,B)\ \text{EllipticPi}\left[\frac{\text{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\ \sqrt{\text{Sec}[c+d\,x]}\Bigg)\Bigg/$$

$$\left((a^2+b^2)^2\ \left(b-\sqrt{a^2+b^2}\right)\ \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)+$$

$$\left(\text{i}\ a \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}\right.$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+i b)^2 (A-i B) \text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left. i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right) \sqrt{\text{Sec}[c+d x]}\Bigg) \Bigg/$$

$$\left((a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \left(b+\sqrt{a^2+b^2}\right) \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]} \sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)-$$

$$\frac{1}{(a^2+b^2)^2 \sqrt{\frac{a}{b+\sqrt{a^2+b^2}}} \sqrt{a \text{Cos}[c+d x]+b \text{Sin}[c+d x]}}$$

$$3 i \sqrt{\frac{b+\sqrt{a^2+b^2}+a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}} \sqrt{1+\frac{a \text{Cot}\left[\frac{1}{2}(c+d x)\right]}{b-\sqrt{a^2+b^2}}} \sqrt{\text{Cot}[c+d x]}$$

$$\left(\left(a^2 A-A b^2+2 a b B\right) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right], \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-i b)^2 (A+i B) \text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a}, i \text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}(c+d x)\right]}}\right],\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\sqrt{\mathrm{Sec}[c+d\,x]}\ \sqrt{\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]}\ +$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]\right)^{3/2}}\,2\,\mathrm{i}\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}$$

$$\Bigg(\left(a^2 A-A\,b^2+2\,a\,b\,B\right)\mathrm{EllipticF}\Big[\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$(a-\mathrm{i}\,b)^2\,(A+\mathrm{i}\,B)\,\mathrm{EllipticPi}\Big[-\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},$$

$$\mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big] - (a+\mathrm{i}\,b)^2\,(A-\mathrm{i}\,B)$$

$$\mathrm{EllipticPi}\Big[\frac{\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\mathrm{ArcSinh}\Big[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}}\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\ \left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^{3/2}+$$

$$\left(1\Big/\left(\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{\mathrm{Cot}[c+d\,x]}\ \sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\right)$$

$$2\,\mathrm{i}\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\text{Csc}[c+d\,x]^2$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i}\,b)^2\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\,\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\,(A-\text{i}\,B)\,\text{EllipticPi}\left[\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}+$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\,4\,\text{i}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$(a-\text{i}\,b)^2\,(A+\text{i}\,B)\,\text{EllipticPi}\left[-\frac{\text{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\text{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\,\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-(a+\text{i}\,b)^2\,(A-\text{i}\,B)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 2\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\left(\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\left(a-\mathbb{i}\,b\right)^2\left(A+\mathbb{i}\,B\right)\,\text{EllipticPi}\left[-\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\left(a+\mathbb{i}\,b\right)^2\left(A-\mathbb{i}\,B\right)$$

$$\left.\text{EllipticPi}\left[\frac{\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{3/2}-$$

$$\frac{1}{\left(a^2+b^2\right)^2\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\ 4\,\mathbb{i}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{\text{Cot}[c+d\,x]}$$

$$\sqrt{\text{Sec}[c+d\,x]}\left(-\left(\left(i\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,\left(a^2\,A-A\,b^2+2\,a\,b\,B\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\right.\right.$$

$$\left.\left(4\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)+$$

$$\left(i\,(a-i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A+i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/\left(4\,\left(1-i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)+$$

$$\left(i\,(a+i\,b)^2\,\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\,(A-i\,B)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg/$$

$$\left(4\,\left(1+i\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\,\sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\right)\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}\Bigg)\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}\Bigg)$$

Problem 652: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Tan}[c+d\,x]}{\text{Cot}[c+d\,x]^{5/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 342 leaves, 15 steps):

$$\frac{(\mathrm{i}\,A-B)\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a-b)^{5/2}\,d}+$$

$$\frac{2\,B\,\mathrm{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{b^{5/2}\,d}-$$

$$\frac{(\mathrm{i}\,A+B)\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{(\mathrm{i}\,a+b)^{5/2}\,d}+$$

$$\frac{2\,a\,(A\,b-a\,B)}{3\,b\,(a^2+b^2)\,d\,\mathrm{Cot}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}+$$

$$\frac{2\,a\,(2\,A\,b^3-a\,(a^2+3\,b^2)\,B)}{b^2\,(a^2+b^2)^2\,d\,\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}$$

Result (type 4, 97 014 leaves) : Display of huge result suppressed!

Problem 653: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\mathrm{Cot}[c+d\,x]}\,(a\,B+b\,B\,\mathrm{Tan}[c+d\,x])}{(a+b\,\mathrm{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 151 leaves, 9 steps) :

$$\frac{B\,\mathrm{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a-b}\,d}+$$

$$\frac{B\,\mathrm{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Tan}[c+d\,x]}}\right]\sqrt{\mathrm{Cot}[c+d\,x]}\,\sqrt{\mathrm{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a+b}\,d}$$

Result (type 4, 431 leaves) :

$$\frac{1}{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}\ d\ \sqrt{a+b\,\text{Tan}[c+d\,x]}}$$

$$4\,\mathrm{i}\,B\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{\frac{b-\sqrt{a^2+b^2}+a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1+\frac{a\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\sqrt{\text{Cot}[c+d\,x]}\ \left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[-\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\left.\text{EllipticPi}\left[\frac{\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)}{a},\ \mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{b+\sqrt{a^2+b^2}}}}{\sqrt{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)$$

$$\text{Sec}[c+d\,x]\ \text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^{3/2}$$

Problem 654: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{a\,B+b\,B\,\text{Tan}[c+d\,x]}{\sqrt{\text{Cot}[c+d\,x]}\ (a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 157 leaves, 9 steps):

$$\frac{\mathrm{i}\,B\,\text{ArcTan}\left[\frac{\sqrt{\mathrm{i}\,a-b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a-b}\ d}-$$

$$\frac{\mathrm{i}\,B\,\text{ArcTanh}\left[\frac{\sqrt{\mathrm{i}\,a+b}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Tan}[c+d\,x]}}{\sqrt{\mathrm{i}\,a+b}\ d}$$

Result (type 4, 2641 leaves):

$$\Bigg(2\,B\,\Bigg(\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\ \Bigg)\Bigg/$$

$$\Bigg(d\,\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\Bigg(\Bigg(a\,\sqrt{\text{Cot}[c+d\,x]}\ \Bigg(\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\Bigg(2\,\left(-b+\sqrt{a^2+b^2}\right)\ \sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}$$

$$\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\ \Bigg)-\Bigg(\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\text{EllipticPi}\Big[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]-$$

$$\text{EllipticPi}\Big[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\Big[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,\Big],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]\ \left(b\,\text{Cos}[c+d x]-a\,\text{Sin}[c+d x]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d x)\right]}}\ \left(a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]\right)^{3/2}\right)+$$

$$\left(2\sqrt{\text{Cot}[c+d x]}\ \left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.\right.$$

$$\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\right.$$

$$\left.\left.i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d x)\right]}}\ \sqrt{\text{Sec}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)-$$

$$\left(\text{Csc}[c+d x]\ \left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\right.\right.$$

$$\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],$$

$$\left.\left.\frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\right)\sqrt{\text{Sec}[c+d x]}\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d x)\right]}}\ \sqrt{\text{Cot}[c+d x]}\ \sqrt{a\,\text{Cos}[c+d x]+b\,\text{Sin}[c+d x]}\right)+$$

$$\left(a\left(b+\sqrt{a^2+b^2}\right)\sqrt{\text{Cot}[c+d x]}\ \text{Csc}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

$$\left(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-\right.$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(2\left(\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{3/2}\left(a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\right.$$

$$\left.\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+\Bigg(\sqrt{\text{Cot}[c+d\,x]}$$

$$\Bigg(\text{EllipticPi}\left[-\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]-$$

$$\text{EllipticPi}\left[\frac{i\left(b+\sqrt{a^2+b^2}\right)}{a},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right],\ \frac{b+\sqrt{a^2+b^2}}{b-\sqrt{a^2+b^2}}\right]\Bigg)$$

$$\text{Sec}[c+d\,x]^{3/2}\ \text{Sin}[c+d\,x]^2\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]}}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)+$$

$$\Bigg(2\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]\ \sqrt{1+\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{a^2+b^2}}}$$

$$\Bigg(\left(i\,a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg/\Bigg(4\left(b+\sqrt{a^2+b^2}\right)\left(1-i\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg)-$$

$$\left(i\,a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\left(b+\sqrt{a^2+b^2}\right)\left(1+i\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$

$$\left.\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b-\sqrt{a^2+b^2}}}\;\sqrt{1-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\right)\Big/$$

$$\left(\sqrt{\frac{a}{a-\left(b+\sqrt{a^2+b^2}\right)\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]}}\;\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)\Bigg)$$

$$\left.\sqrt{a+b\,\text{Tan}[c+d\,x]}\right)$$

Problem 655: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{a\,B+b\,B\,\text{Tan}[c+d\,x]}{\text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 3, 215 leaves, 14 steps):

$$-\frac{B\,\text{ArcTan}\left[\frac{\sqrt{i\,a-b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{i\,a-b}\,d}+$$

$$\frac{2\,B\,\text{ArcTanh}\left[\frac{\sqrt{b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{b}\,d}-$$

$$\frac{B\,\text{ArcTanh}\left[\frac{\sqrt{i\,a+b}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{a+b\,\text{Tan}[c+d\,x]}}\right]\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\text{Tan}[c+d\,x]}}{\sqrt{i\,a+b}\,d}$$

Result (type 4, 5277 leaves):

$$-\left(\left(4\,a\,B\,\sqrt{\text{Cot}[c+d\,x]}\right.\right.$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathbb{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/$$

$$\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)\text{Sec}[c+d\,x]\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)$$

$$\left(\frac{\sqrt{\text{Cot}[c+d\,x]}\ \text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}-\frac{\text{Cos}\left[2\,(c+d\,x)\right]\,\sqrt{\text{Cot}[c+d\,x]}\ \text{Sec}[c+d\,x]^{3/2}}{2\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}}\right)$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Big/$$

$$\left(\sqrt{a^2+b^2}\;d\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}\right.$$

$$-\left(\left(\left(a^2\,\sqrt{\text{Cot}[c+d\,x]}\;\left(-\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.\right.\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathbb{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathbb{i}\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\Bigg)\Bigg/$$

$$\left(\sqrt{a^2+b^2}\ \left(b+\sqrt{a^2+b^2}\right)\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right.$$

$$\left.\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\right)\Bigg) -$$

$$\Bigg(2\,a\,\sqrt{\text{Cot}[c+d\,x]}\ \Bigg(-\Bigg(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(-a+b+\sqrt{a^2+b^2}\right)\Bigg) - \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Bigg/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(\text{i EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\text{i } a+b+\sqrt{a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right) \Big/ \left(\text{i } a+b+\sqrt{a^2+b^2}\right) + \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right] \Big/ \left(a+b+\sqrt{a^2+b^2}\right)\Bigg)$$

$$\sqrt{\text{Sec}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\Bigg) \Big/$$

$$\left(\sqrt{a^2+b^2}\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right.$$

$$\left.\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}\right)+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\text{Cot}[c+d\,x]}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)}{a^2+b^2}}}\,2\,a\,\text{Csc}[c+d\,x]^2$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right/\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right) - \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathbb{i}\left(b+\sqrt{a^2+b^2}\right)\right) -$$

$$\left(\mathbb{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{a^2+b^2}},\ \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathbb{i}\,a+b+\sqrt{a^2+b^2}\right) + \text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}} -$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathrm{i}\,\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\,+$$

$$\frac{1}{\sqrt{a^2+b^2}\,\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}\right)^{3/2}}\,2\,a\,\sqrt{\text{Cot}[c+d\,x]}$$

$$\left(-\left(\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\right.\right.$$

$$\left.\left(-a+b+\sqrt{a^2+b^2}\right)\right)-\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+\mathrm{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)-$$

$$\left(\mathrm{i}\,\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\right)\Big/\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)+\text{EllipticPi}\left[\frac{2\,\sqrt{a^2+b^2}}{a+b+\sqrt{a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{a^2+b^2}}{b+\sqrt{a^2+b^2}}\right]\Big/\left(a+b+\sqrt{a^2+b^2}\right)\right)$$

$$\sqrt{\text{Sec}[c+d\,x]}\ \sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x])}{a^2+b^2}+\frac{1}{a^2+b^2}\right.$$

$$\left.a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)-$$

$$\frac{1}{\sqrt{a^2+b^2}\,\sqrt{\frac{a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x])}{a^2+b^2}}}\,4\,a\,\sqrt{\text{Cot}[c+d\,x]}\ \sqrt{\text{Sec}[c+d\,x]}$$

$$\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\ \sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(-a+b+\sqrt{a^2+b^2}\right)\right.\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\left.\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{a^2+b^2}}}\ \left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-a+b+\sqrt{a^2+b^2}}\right)\right)+$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/\left(4\,\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+\text{i}\,\left(b+\sqrt{a^2+b^2}\right)\right)\right.$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}}\ \sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)+$$

$$\left(\mathrm{i}\,a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(\mathrm{i}\,a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\mathrm{i}\,a+b+\sqrt{a^2+b^2}}\right)\Bigg)-$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg/\Bigg(4\sqrt{2}\,\sqrt{a^2+b^2}\,\left(a+b+\sqrt{a^2+b^2}\right)$$

$$\sqrt{\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{a^2+b^2}}}\,\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{2\sqrt{a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{a^2+b^2}}}$$

$$\left(1-\frac{b+\sqrt{a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{a+b+\sqrt{a^2+b^2}}\right)\Bigg)\Bigg)\Bigg)\,\sqrt{a+b\,\text{Tan}[c+d\,x]}\Bigg)\Bigg)$$

Problem 656: Unable to integrate problem.

$$\int \text{Cot}[c+d\,x]^m\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 6, 195 leaves, 8 steps):

$$\frac{1}{2\,d\,(1-m)}(A+i\,B)\,\text{AppellF1}\left[1-m,-n,1,2-m,-\frac{b\,\text{Tan}[c+d\,x]}{a},-i\,\text{Tan}[c+d\,x]\right]$$
$$\text{Cot}[c+d\,x]^{-1+m}\,(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{2\,d\,(1-m)}$$
$$(A-i\,B)\,\text{AppellF1}\left[1-m,-n,1,2-m,-\frac{b\,\text{Tan}[c+d\,x]}{a},i\,\text{Tan}[c+d\,x]\right]$$
$$\text{Cot}[c+d\,x]^{-1+m}\,(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 33 leaves):

$$\int \text{Cot}[c+d\,x]^m\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Problem 657: Unable to integrate problem.

$$\int \text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 6, 169 leaves, 10 steps):

$$-\frac{1}{d}(A+i\,B)\,\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}-\frac{1}{d}$$
$$(A-i\,B)\,\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$\sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \text{Cot}[c+d\,x]^{3/2}\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Problem 658: Unable to integrate problem.

$$\int \sqrt{\text{Cot}[c+d\,x]}\,(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])\,dx$$

Optimal (type 6, 167 leaves, 10 steps):

$$\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}(A+i\,B)\,\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{d\,\sqrt{\text{Cot}[c+d\,x]}}$$
$$(A-i\,B)\,\text{AppellF1}\left[\frac{1}{2},1,-n,\frac{3}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]$$
$$(a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \sqrt{\text{Cot}[c+d x]}\ (a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])\, dx$$

Problem 659: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])}{\sqrt{\text{Cot}[c+d x]}}\, dx$$

Optimal (type 6, 173 leaves, 10 steps):

$$\left((A+i B)\ \text{AppellF1}\left[\frac{3}{2},\ 1,\ -n,\ \frac{5}{2},\ -i\,\text{Tan}[c+d x],\ -\frac{b\,\text{Tan}[c+d x]}{a}\right] (a+b\,\text{Tan}[c+d x])^n \left(1+\frac{b\,\text{Tan}[c+d x]}{a}\right)^{-n}\right) \Big/ \left(3\, d\,\text{Cot}[c+d x]^{3/2}\right) + \left((A-i B)\ \text{AppellF1}\left[\frac{3}{2},\ 1,\ -n,\ \frac{5}{2},\ i\,\text{Tan}[c+d x],\ -\frac{b\,\text{Tan}[c+d x]}{a}\right] (a+b\,\text{Tan}[c+d x])^n \left(1+\frac{b\,\text{Tan}[c+d x]}{a}\right)^{-n}\right) \Big/ \left(3\, d\,\text{Cot}[c+d x]^{3/2}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{(a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])}{\sqrt{\text{Cot}[c+d x]}}\, dx$$

Problem 660: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])}{\text{Cot}[c+d x]^{3/2}}\, dx$$

Optimal (type 6, 173 leaves, 10 steps):

$$\left((A+i B)\ \text{AppellF1}\left[\frac{5}{2},\ 1,\ -n,\ \frac{7}{2},\ -i\,\text{Tan}[c+d x],\ -\frac{b\,\text{Tan}[c+d x]}{a}\right] (a+b\,\text{Tan}[c+d x])^n \left(1+\frac{b\,\text{Tan}[c+d x]}{a}\right)^{-n}\right) \Big/ \left(5\, d\,\text{Cot}[c+d x]^{5/2}\right) + \left((A-i B)\ \text{AppellF1}\left[\frac{5}{2},\ 1,\ -n,\ \frac{7}{2},\ i\,\text{Tan}[c+d x],\ -\frac{b\,\text{Tan}[c+d x]}{a}\right] (a+b\,\text{Tan}[c+d x])^n \left(1+\frac{b\,\text{Tan}[c+d x]}{a}\right)^{-n}\right) \Big/ \left(5\, d\,\text{Cot}[c+d x]^{5/2}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{(a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])}{\text{Cot}[c+d x]^{3/2}}\, dx$$

Problem 661: Unable to integrate problem.

$$\int \text{Tan}[c+d x]^{3/2}\ (a+b\,\text{Tan}[c+d x])^n\ (A+B\,\text{Tan}[c+d x])\, dx$$

Optimal (type 6, 173 leaves, 9 steps):

$$\frac{1}{5\,d}\left(A+\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{5}{2},\,1,\,-n,\,\frac{7}{2},\,-\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\text{Tan}[c+d\,x]^{5/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{5\,d}\left(A-\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{5}{2},\,1,\,-n,\,\frac{7}{2},\,\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\text{Tan}[c+d\,x]^{5/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \text{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,\mathrm{d}x$$

Problem 662: Unable to integrate problem.

$$\int \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,\mathrm{d}x$$

Optimal (type 6, 173 leaves, 9 steps):

$$\frac{1}{3\,d}\left(A+\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{3}{2},\,1,\,-n,\,\frac{5}{2},\,-\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\text{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{3\,d}\left(A-\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{3}{2},\,1,\,-n,\,\frac{5}{2},\,\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\text{Tan}[c+d\,x]^{3/2}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)\,\mathrm{d}x$$

Problem 663: Unable to integrate problem.

$$\int \frac{\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(A+B\,\text{Tan}[c+d\,x]\right)}{\sqrt{\text{Tan}[c+d\,x]}}\,\mathrm{d}x$$

Optimal (type 6, 167 leaves, 9 steps):

$$\frac{1}{d}\left(A+\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{1}{2},\,1,\,-n,\,\frac{3}{2},\,-\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}+\frac{1}{d}\left(A-\mathrm{i}\,B\right)\,\text{AppellF1}\left[\frac{1}{2},\,1,\,-n,\,\frac{3}{2},\,\mathrm{i}\,\text{Tan}[c+d\,x],\,-\frac{b\,\text{Tan}[c+d\,x]}{a}\right]\,\sqrt{\text{Tan}[c+d\,x]}\,\left(a+b\,\text{Tan}[c+d\,x]\right)^n\,\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \frac{(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])}{\sqrt{\text{Tan}[c+d\,x]}}\,dx$$

Problem 664: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 6, 169 leaves, 9 steps):

$$-\frac{1}{d\sqrt{\text{Tan}[c+d\,x]}}(A+i\,B)\,\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},-i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right](a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}-\frac{1}{d\sqrt{\text{Tan}[c+d\,x]}}(A-i\,B)\,\text{AppellF1}\left[-\frac{1}{2},1,-n,\frac{1}{2},i\,\text{Tan}[c+d\,x],-\frac{b\,\text{Tan}[c+d\,x]}{a}\right](a+b\,\text{Tan}[c+d\,x])^n\left(1+\frac{b\,\text{Tan}[c+d\,x]}{a}\right)^{-n}$$

Result (type 8, 35 leaves):

$$\int \frac{(a+b\,\text{Tan}[c+d\,x])^n\,(A+B\,\text{Tan}[c+d\,x])}{\text{Tan}[c+d\,x]^{3/2}}\,dx$$

Problem 666: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\text{Tan}[e+f\,x])\,(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^4\,dx$$

Optimal (type 3, 59 leaves, 3 steps):

$$\frac{a\,(i\,A+B)\,c^4\,(1-i\,\text{Tan}[e+f\,x])^4}{4\,f}-\frac{a\,B\,c^4\,(1-i\,\text{Tan}[e+f\,x])^5}{5\,f}$$

Result (type 3, 226 leaves):

$$\frac{1}{40\,f}a\,c^4\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^5\,(5\,(-5\,i\,A+3\,B)\,\text{Cos}[f\,x]+5\,(-5\,i\,A+3\,B)\,\text{Cos}[2\,e+f\,x]-10\,i\,A\,\text{Cos}[2\,e+3\,f\,x]+10\,B\,\text{Cos}[2\,e+3\,f\,x]-10\,i\,A\,\text{Cos}[4\,e+3\,f\,x]+10\,B\,\text{Cos}[4\,e+3\,f\,x]+25\,A\,\text{Sin}[f\,x]+15\,i\,B\,\text{Sin}[f\,x]-25\,A\,\text{Sin}[2\,e+f\,x]-15\,i\,B\,\text{Sin}[2\,e+f\,x]+15\,A\,\text{Sin}[2\,e+3\,f\,x]+5\,i\,B\,\text{Sin}[2\,e+3\,f\,x]-10\,A\,\text{Sin}[4\,e+3\,f\,x]-10\,i\,B\,\text{Sin}[4\,e+3\,f\,x]+5\,A\,\text{Sin}[4\,e+5\,f\,x]+3\,i\,B\,\text{Sin}[4\,e+5\,f\,x])$$

Problem 667: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\text{Tan}[e+f\,x])\,(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^3\,dx$$

Optimal (type 3, 59 leaves, 3 steps):

$$\frac{a\,(\mathrm{i}\,A+B)\,c^3\,(1-\mathrm{i}\,\mathrm{Tan}[e+f\,x])^3}{3\,f}-\frac{a\,B\,c^3\,(1-\mathrm{i}\,\mathrm{Tan}[e+f\,x])^4}{4\,f}$$

Result (type 3, 161 leaves):

$$\frac{1}{12\,f}a\,c^3\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]^4\,(3\,(-2\,\mathrm{i}\,A+B)\,\mathrm{Cos}[e]+3\,(-\mathrm{i}\,A+B)\,\mathrm{Cos}[e+2\,f\,x]-3\,\mathrm{i}\,A\,\mathrm{Cos}[3\,e+2\,f\,x]+3\,B\,\mathrm{Cos}[3\,e+2\,f\,x]-6\,A\,\mathrm{Sin}[e]-3\,\mathrm{i}\,B\,\mathrm{Sin}[e]+5\,A\,\mathrm{Sin}[e+2\,f\,x]+\mathrm{i}\,B\,\mathrm{Sin}[e+2\,f\,x]-3\,A\,\mathrm{Sin}[3\,e+2\,f\,x]-3\,\mathrm{i}\,B\,\mathrm{Sin}[3\,e+2\,f\,x]+2\,A\,\mathrm{Sin}[3\,e+4\,f\,x]+\mathrm{i}\,B\,\mathrm{Sin}[3\,e+4\,f\,x])$$

Problem 671: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x])}{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 54 leaves, 3 steps):

$$\frac{\mathrm{i}\,a\,B\,x}{c}+\frac{a\,B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{c\,f}+\frac{a\,(A-\mathrm{i}\,B)}{c\,f\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 123 leaves):

$$\frac{1}{2\,c\,f}a\,(-\mathrm{i}\,\mathrm{Cos}[e+f\,x]+\mathrm{Sin}[e+f\,x])\,(\mathrm{Cos}[e+f\,x]\,(A-\mathrm{i}\,B-4\,B\,f\,x+\mathrm{i}\,B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2])+2\,B\,\mathrm{ArcTan}[\mathrm{Tan}[2\,e+f\,x]]\,(\mathrm{Cos}[e+f\,x]-\mathrm{i}\,\mathrm{Sin}[e+f\,x])+(\mathrm{i}\,A+B+4\,\mathrm{i}\,B\,f\,x+B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2])\,\mathrm{Sin}[e+f\,x])$$

Problem 675: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x])}{(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^5}\,dx$$

Optimal (type 3, 55 leaves, 3 steps):

$$\frac{a\,(A-\mathrm{i}\,B)}{5\,c^5\,f\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])^5}+\frac{a\,B}{4\,c^5\,f\,(\mathrm{i}+\mathrm{Tan}[e+f\,x])^4}$$

Result (type 3, 124 leaves):

$$-\frac{1}{320\,c^5\,f}\mathrm{i}\,a\,(20\,A+5\,(6\,A+\mathrm{i}\,B)\,\mathrm{Cos}[2\,(e+f\,x)]+4\,(3\,A+2\,\mathrm{i}\,B)\,\mathrm{Cos}[4\,(e+f\,x)]-10\,\mathrm{i}\,A\,\mathrm{Sin}[2\,(e+f\,x)]+15\,B\,\mathrm{Sin}[2\,(e+f\,x)]-8\,\mathrm{i}\,A\,\mathrm{Sin}[4\,(e+f\,x)]+12\,B\,\mathrm{Sin}[4\,(e+f\,x)])\,(\mathrm{Cos}[6\,(e+f\,x)]+\mathrm{i}\,\mathrm{Sin}[6\,(e+f\,x)])$$

Problem 677: Result more than twice size of optimal antiderivative.

$$\int (a+i a \text{Tan}[e+f x])^2 (A+B \text{Tan}[e+f x]) (c-i c \text{Tan}[e+f x])^5 \, dx$$

Optimal (type 3, 99 leaves, 3 steps):

$$\frac{2 a^2 (i A+B) c^5 (1-i \text{Tan}[e+f x])^5}{5 f}-\frac{a^2 (i A+3 B) c^5 (1-i \text{Tan}[e+f x])^6}{6 f}+\frac{a^2 B c^5 (1-i \text{Tan}[e+f x])^7}{7 f}$$

Result (type 3, 254 leaves):

$$\frac{1}{840 f} a^2 c^5 \text{Sec}[e] \text{Sec}[e+f x]^7 \left(35 (-7 i A+3 B) \text{Cos}[f x]+35 (-7 i A+3 B) \text{Cos}[2 e+f x]-105 i A \text{Cos}[2 e+3 f x]+105 B \text{Cos}[2 e+3 f x]-105 i A \text{Cos}[4 e+3 f x]+105 B \text{Cos}[4 e+3 f x]+245 A \text{Sin}[f x]+105 i B \text{Sin}[f x]-245 A \text{Sin}[2 e+f x]-105 i B \text{Sin}[2 e+f x]+189 A \text{Sin}[2 e+3 f x]+21 i B \text{Sin}[2 e+3 f x]-105 A \text{Sin}[4 e+3 f x]-105 i B \text{Sin}[4 e+3 f x]+98 A \text{Sin}[4 e+5 f x]+42 i B \text{Sin}[4 e+5 f x]+14 A \text{Sin}[6 e+7 f x]+6 i B \text{Sin}[6 e+7 f x]\right)$$

Problem 682: Result more than twice size of optimal antiderivative.

$$\int (a+i a \text{Tan}[e+f x])^2 (A+B \text{Tan}[e+f x]) \, dx$$

Optimal (type 3, 80 leaves, 3 steps):

$$2 a^2 (A-i B) x-\frac{2 a^2 (i A+B) \text{Log}[\text{Cos}[e+f x]]}{f}-\frac{a^2 (A-i B) \text{Tan}[e+f x]}{f}+\frac{B (a+i a \text{Tan}[e+f x])^2}{2 f}$$

Result (type 3, 263 leaves):

$$\frac{1}{4 f (\text{Cos}[f x]+i \text{Sin}[f x])^2} a^2 \text{Sec}[e] \text{Sec}[e+f x]^2 (\text{Cos}[2 f x]+i \text{Sin}[2 f x]) \left(-8 (A-i B) \text{ArcTan}[\text{Tan}[3 e+f x]] \text{Cos}[e] \text{Cos}[e+f x]^2-i \left(4 i A f x \text{Cos}[3 e+2 f x]+4 B f x \text{Cos}[3 e+2 f x]+(i A+B) \text{Cos}[e+2 f x] \left(4 f x-i \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)+A \text{Cos}[3 e+2 f x] \text{Log}\left[\text{Cos}[e+f x]^2\right]-i B \text{Cos}[3 e+2 f x] \text{Log}\left[\text{Cos}[e+f x]^2\right]+2 \text{Cos}[e] \left(-i B+4 i A f x+4 B f x+(A-i B) \text{Log}\left[\text{Cos}[e+f x]^2\right]\right)+2 i A \text{Sin}[e]+4 B \text{Sin}[e]-2 i A \text{Sin}[e+2 f x]-4 B \text{Sin}[e+2 f x]\right)\right)$$

Problem 683: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \text{Tan}[e+f x])^2 (A+B \text{Tan}[e+f x])}{c-i c \text{Tan}[e+f x]} \, dx$$

Optimal (type 3, 93 leaves, 3 steps):

$$-\frac{a^2\,(A-3\,i\,B)\,x}{c}+\frac{a^2\,(i\,A+3\,B)\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{c\,f}-\frac{i\,a^2\,B\,\mathrm{Tan}[e+f\,x]}{c\,f}+\frac{2\,a^2\,(A-i\,B)}{c\,f\,(i+\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 418 leaves):

$$\frac{1}{2\,c\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^2\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])}$$
$$a^2\,\mathrm{Sec}[e]\,\big(2\,(A-3\,i\,B)\,f\,x\,\mathrm{Cos}[e]^3\,\mathrm{Cos}[e+f\,x]+A\,f\,x\,\mathrm{Cos}[3\,e]\,\mathrm{Cos}[e+f\,x]+$$
$$2\,i\,A\,f\,x\,\mathrm{Cos}[2\,e]\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e]+6\,B\,f\,x\,\mathrm{Cos}[2\,e]\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e]-$$
$$2\,i\,\mathrm{Cos}[e]^2\,\mathrm{Cos}[e+f\,x]\,\big((5\,A-9\,i\,B)\,f\,x+(-i\,A-3\,B)\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2]\big)\,\mathrm{Sin}[e]+$$
$$2\,i\,A\,f\,x\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e]^3+6\,B\,f\,x\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e]^3-2\,(A-3\,i\,B)\,\mathrm{ArcTan}[\mathrm{Tan}[3\,e+f\,x]]$$
$$\mathrm{Cos}[e]\,\mathrm{Cos}[e+f\,x]\,(\mathrm{Cos}[2\,e]-i\,\mathrm{Sin}[2\,e])-6\,i\,B\,f\,x\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e]\,\mathrm{Sin}[2\,e]+$$
$$2\,i\,B\,\mathrm{Cos}[2\,e]\,\mathrm{Sin}[f\,x]+2\,B\,\mathrm{Sin}[2\,e]\,\mathrm{Sin}[f\,x]+\mathrm{Cos}[e]\,\mathrm{Cos}[e+f\,x]$$
$$\big(A\,f\,x+2\,(i\,A+B)\,\mathrm{Cos}[2\,f\,x]-i\,\mathrm{Cos}[2\,e]\,\big(6\,B\,f\,x+(A-3\,i\,B)\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2]\big)-$$
$$2\,A\,f\,x\,\mathrm{Sin}[e]^2+18\,i\,B\,f\,x\,\mathrm{Sin}[e]^2-6\,B\,f\,x\,\mathrm{Sin}[2\,e]-2\,A\,\mathrm{Sin}[2\,f\,x]+2\,i\,B\,\mathrm{Sin}[2\,f\,x]\big)\big)$$
$$(-i\,\mathrm{Cos}[e+f\,x]+\mathrm{Sin}[e+f\,x])^2\,(A+B\,\mathrm{Tan}[e+f\,x])$$

Problem 684: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\mathrm{Tan}[e+f\,x])^2\,(A+B\,\mathrm{Tan}[e+f\,x])}{(c-i\,c\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 91 leaves, 3 steps):

$$-\frac{i\,a^2\,B\,x}{c^2}-\frac{a^2\,B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{c^2\,f}+\frac{a^2\,(i\,A+B)}{c^2\,f\,(i+\mathrm{Tan}[e+f\,x])^2}-\frac{a^2\,(A-3\,i\,B)}{c^2\,f\,(i+\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 184 leaves):

$$\frac{1}{4\,c^2\,f\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])^2}$$
$$a^2\,\big(4\,B-i\,\mathrm{Cos}[2\,(e+f\,x)]\,\big(A-i\,B+8\,B\,f\,x-2\,i\,B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2]\big)+A\,\mathrm{Sin}[2\,(e+f\,x)]-$$
$$i\,B\,\mathrm{Sin}[2\,(e+f\,x)]-8\,B\,f\,x\,\mathrm{Sin}[2\,(e+f\,x)]+2\,i\,B\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]^2]\,\mathrm{Sin}[2\,(e+f\,x)]+$$
$$4\,B\,\mathrm{ArcTan}[\mathrm{Tan}[3\,e+f\,x]]\,(i\,\mathrm{Cos}[2\,(e+f\,x)]+\mathrm{Sin}[2\,(e+f\,x)])\big)$$
$$(\mathrm{Cos}[2\,(e+2\,f\,x)]+i\,\mathrm{Sin}[2\,(e+2\,f\,x)])$$

Problem 689: Result more than twice size of optimal antiderivative.

$$\int(a+i\,a\,\mathrm{Tan}[e+f\,x])^3\,(A+B\,\mathrm{Tan}[e+f\,x])\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^n\,dx$$

Optimal (type 3, 151 leaves, 3 steps):

$$\frac{4\,a^3\,(i\,A+B)\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^n}{f\,n}-\frac{4\,a^3\,(i\,A+2\,B)\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{1+n}}{c\,f\,(1+n)}+$$
$$\frac{a^3\,(i\,A+5\,B)\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{2+n}}{c^2\,f\,(2+n)}-\frac{a^3\,B\,(c-i\,c\,\mathrm{Tan}[e+f\,x])^{3+n}}{c^3\,f\,(3+n)}$$

Result (type 3, 822 leaves):

$$\frac{1}{f\,\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^3\,\left(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x]\right)}$$

$$\text{Cos}[e+f\,x]^4\,\left(\frac{1}{(2+n)\,(3+n)}\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\right.$$

$$\left(3\,A\,\text{Cos}[e]-9\,i\,B\,\text{Cos}[e]+A\,n\,\text{Cos}[e]-2\,i\,B\,n\,\text{Cos}[e]+2\,B\,\text{Sin}[e]+B\,n\,\text{Sin}[e]\right)$$

$$\left(-i\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Cos}[3\,e]-e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Sin}[3\,e]\right)+$$

$$\frac{1}{(1+n)\,(2+n)\,(3+n)}\,\text{Sec}[e]\,\left(12\,i\,A\,\text{Cos}[e]+12\,B\,\text{Cos}[e]+13\,i\,A\,n\,\text{Cos}[e]+9\,B\,n\,\text{Cos}[e]+6\,i\,A\,n^2\,\text{Cos}[e]+6\,B\,n^2\,\text{Cos}[e]+i\,A\,n^3\,\text{Cos}[e]+B\,n^3\,\text{Cos}[e]-9\,A\,n\,\text{Sin}[e]+13\,i\,B\,n\,\text{Sin}[e]-6\,A\,n^2\,\text{Sin}[e]+6\,i\,B\,n^2\,\text{Sin}[e]-A\,n^3\,\text{Sin}[e]+i\,B\,n^3\,\text{Sin}[e]\right)$$

$$\left(\frac{2\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Cos}[3\,e]}{n}-\frac{2\,i\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Sin}[3\,e]}{n}\right)+$$

$$\Big(\left(9\,A-13\,i\,B+6\,A\,n-6\,i\,B\,n+A\,n^2-i\,B\,n^2\right)\,\text{Sec}[e]\,\text{Sec}[e+f\,x]$$

$$\left(-2\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Cos}[3\,e]+2\,i\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Sin}[3\,e]\right)\,\text{Sin}[f\,x]\Big)\Big/$$

$$\left((1+n)\,(2+n)\,(3+n)\right)-\frac{1}{3+n}i\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^3$$

$$\left(B\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Cos}[3\,e]-\left.i\,B\,e^{-i\,f\,n\,x+n\,(i\,f\,x-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}\,\text{Sin}[3\,e]\right)\,\text{Sin}[f\,x]\right)$$

$$\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\,\left(A+B\,\text{Tan}[e+f\,x]\right)\,\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^{n-\frac{n\,(-\text{Log}[c\,\text{Sec}[e+f\,x]]+\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]])}{\text{Log}[c-i\,c\,\text{Tan}[e+f\,x]]}}$$

Problem 695: Result more than twice size of optimal antiderivative.

$$\int \left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\,\left(A+B\,\text{Tan}[e+f\,x]\right)\,\left(c-i\,c\,\text{Tan}[e+f\,x]\right)\,dx$$

Optimal (type 3, 61 leaves, 3 steps):

$$-\frac{a^3\,(i\,A-B)\,c\,\left(1+i\,\text{Tan}[e+f\,x]\right)^3}{3\,f}-\frac{a^3\,B\,c\,\left(1+i\,\text{Tan}[e+f\,x]\right)^4}{4\,f}$$

Result (type 3, 161 leaves):

$$\frac{1}{12\,f}a^3\,c\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^4$$

$$\left(3\,(2\,i\,A+B)\,\text{Cos}[e]+3\,(i\,A+B)\,\text{Cos}[e+2\,f\,x]+3\,i\,A\,\text{Cos}[3\,e+2\,f\,x]+3\,B\,\text{Cos}[3\,e+2\,f\,x]-6\,A\,\text{Sin}[e]+3\,i\,B\,\text{Sin}[e]+5\,A\,\text{Sin}[e+2\,f\,x]-i\,B\,\text{Sin}[e+2\,f\,x]-3\,A\,\text{Sin}[3\,e+2\,f\,x]+3\,i\,B\,\text{Sin}[3\,e+2\,f\,x]+2\,A\,\text{Sin}[3\,e+4\,f\,x]-i\,B\,\text{Sin}[3\,e+4\,f\,x]\right)$$

Problem 696: Result more than twice size of optimal antiderivative.

$$\int (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x]) \, dx$$

Optimal (type 3, 110 leaves, 4 steps):

$$4 a^3 (A-i B) x-\frac{4 a^3 (i A+B) \operatorname{Log}[\operatorname{Cos}[e+f x]]}{f}-\frac{2 a^3 (A-i B) \operatorname{Tan}[e+f x]}{f}+\frac{a (i A+B) (a+i a \operatorname{Tan}[e+f x])^2}{2 f}+\frac{B (a+i a \operatorname{Tan}[e+f x])^3}{3 f}$$

Result (type 3, 883 leaves):

$$\left(\operatorname{Cos}[e+f x]^4 \left(A \operatorname{Cos}\left[\frac{3 e}{2}\right]-i B \operatorname{Cos}\left[\frac{3 e}{2}\right]-i A \operatorname{Sin}\left[\frac{3 e}{2}\right]-B \operatorname{Sin}\left[\frac{3 e}{2}\right]\right) \left(-2 i \operatorname{Cos}\left[\frac{3 e}{2}\right] \operatorname{Log}\left[\operatorname{Cos}[e+f x]^2\right]-2 \operatorname{Log}\left[\operatorname{Cos}[e+f x]^2\right] \operatorname{Sin}\left[\frac{3 e}{2}\right]\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$

$$\left(\operatorname{Cos}[e+f x]^2 (3 A \operatorname{Cos}[e]-9 i B \operatorname{Cos}[e]+2 B \operatorname{Sin}[e]) \left(-\frac{1}{6} i \operatorname{Cos}[3 e]-\frac{1}{6} \operatorname{Sin}[3 e]\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right]-\operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right]+\operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$

$$\left((A-i B) \operatorname{Cos}[e+f x]^4 (4 f x \operatorname{Cos}[3 e]-4 i f x \operatorname{Sin}[3 e]) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)-$$

$$\left(i B \operatorname{Cos}[e+f x] \left(\frac{1}{3} \operatorname{Cos}[3 e]-\frac{1}{3} i \operatorname{Sin}[3 e]\right) \operatorname{Sin}[f x] (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right]-\operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right]+\operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$

$$\left(\operatorname{Cos}[e+f x]^3 \left(\frac{1}{3} \operatorname{Cos}[3 e]-\frac{1}{3} i \operatorname{Sin}[3 e]\right) (-9 A \operatorname{Sin}[f x]+13 i B \operatorname{Sin}[f x]) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f \left(\operatorname{Cos}\left[\frac{e}{2}\right]-\operatorname{Sin}\left[\frac{e}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{e}{2}\right]+\operatorname{Sin}\left[\frac{e}{2}\right]\right) (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$

$$\frac{1}{(\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])} x \operatorname{Cos}[e+f x]^4 \left(-2 A \operatorname{Cos}[e]+2 i B \operatorname{Cos}[e]+2 A \operatorname{Cos}[e]^3-2 i B \operatorname{Cos}[e]^3+4 i A \operatorname{Sin}[e]+4 B \operatorname{Sin}[e]-8 i A \operatorname{Cos}[e]^2 \operatorname{Sin}[e]-8 B \operatorname{Cos}[e]^2 \operatorname{Sin}[e]-12 A \operatorname{Cos}[e] \operatorname{Sin}[e]^2+12 i B \operatorname{Cos}[e] \operatorname{Sin}[e]^2+8 i A \operatorname{Sin}[e]^3+8 B \operatorname{Sin}[e]^3+2 A \operatorname{Sin}[e] \operatorname{Tan}[e]-2 i B \operatorname{Sin}[e] \operatorname{Tan}[e]+2 A \operatorname{Sin}[e]^3 \operatorname{Tan}[e]-2 i B \operatorname{Sin}[e]^3 \operatorname{Tan}[e]+i (A-i B) (4 \operatorname{Cos}[3 e]-4 i \operatorname{Sin}[3 e]) \operatorname{Tan}[e]\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])$$

Problem 697: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + i\, a \,\mathrm{Tan}[e + f\, x])^3\,(A + B\,\mathrm{Tan}[e + f\, x])}{c - i\, c\,\mathrm{Tan}[e + f\, x]}\, dx$$

Optimal (type 3, 119 leaves, 3 steps):

$$-\frac{4\, a^3\,(A - 2\, i\, B)\, x}{c} + \frac{4\, a^3\,(i\, A + 2\, B)\,\mathrm{Log}[\mathrm{Cos}[e + f\, x]]}{c\, f} + \frac{a^3\,(A - 4\, i\, B)\,\mathrm{Tan}[e + f\, x]}{c\, f} + \frac{a^3\, B\,\mathrm{Tan}[e + f\, x]^2}{2\, c\, f} + \frac{4\, a^3\,(A - i\, B)}{c\, f\,(i + \mathrm{Tan}[e + f\, x])}$$

Result (type 3, 944 leaves):

$$\left((A-i B)\,\text{Cos}[2 f x]\,\text{Cos}[e+f x]^4\left(-\frac{2 i\,\text{Cos}[e]}{c}-\frac{2\,\text{Sin}[e]}{c}\right)(a+i a\,\text{Tan}[e+f x])^3\right.$$
$$\left.(A+B\,\text{Tan}[e+f x])\right)\Big/\left(f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\left(\text{Cos}[e+f x]^2\left(\frac{B\,\text{Cos}[3 e]}{2 c}-\frac{i B\,\text{Sin}[3 e]}{2 c}\right)(a+i a\,\text{Tan}[e+f x])^3\,(A+B\,\text{Tan}[e+f x])\right)\Big/$$
$$\left(f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\left((A-2 i B)\,\text{Cos}[e+f x]^4\left(-\frac{4 f x\,\text{Cos}[3 e]}{c}+\frac{4 i f x\,\text{Sin}[3 e]}{c}\right)(a+i a\,\text{Tan}[e+f x])^3\right.$$
$$\left.(A+B\,\text{Tan}[e+f x])\right)\Big/\left(f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\left((i A+2 B)\,\text{Cos}[e+f x]^4\left(\frac{2\,\text{Cos}[3 e]\,\text{Log}\left[\text{Cos}[e+f x]^2\right]}{c}-\frac{2 i\,\text{Log}\left[\text{Cos}[e+f x]^2\right]\text{Sin}[3 e]}{c}\right)\right.$$
$$\left.(a+i a\,\text{Tan}[e+f x])^3\,(A+B\,\text{Tan}[e+f x])\right)\Big/$$
$$\left(f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\left(\text{Cos}[e+f x]^3\left(\frac{\text{Cos}[3 e]}{c}-\frac{i\,\text{Sin}[3 e]}{c}\right)(A\,\text{Sin}[f x]-4 i B\,\text{Sin}[f x])\right.$$
$$\left.(a+i a\,\text{Tan}[e+f x])^3\,(A+B\,\text{Tan}[e+f x])\right)\Big/\left(f\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\right.$$
$$\left.\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\left((A-i B)\,\text{Cos}[e+f x]^4\left(\frac{2\,\text{Cos}[e]}{c}-\frac{2 i\,\text{Sin}[e]}{c}\right)\text{Sin}[2 f x]\,(a+i a\,\text{Tan}[e+f x])^3\right.$$
$$\left.(A+B\,\text{Tan}[e+f x])\right)\Big/\left(f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])\right)+$$
$$\frac{1}{(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])}$$
$$x\,\text{Cos}[e+f x]^4\left(\frac{2 A\,\text{Cos}[e]}{c}-\frac{4 i B\,\text{Cos}[e]}{c}-\frac{2 A\,\text{Cos}[e]^3}{c}+\frac{4 i B\,\text{Cos}[e]^3}{c}-\right.$$
$$\frac{4 i A\,\text{Sin}[e]}{c}-\frac{8 B\,\text{Sin}[e]}{c}+\frac{8 i A\,\text{Cos}[e]^2\,\text{Sin}[e]}{c}+\frac{16 B\,\text{Cos}[e]^2\,\text{Sin}[e]}{c}+$$
$$\frac{12 A\,\text{Cos}[e]\,\text{Sin}[e]^2}{c}-\frac{24 i B\,\text{Cos}[e]\,\text{Sin}[e]^2}{c}-\frac{8 i A\,\text{Sin}[e]^3}{c}-\frac{16 B\,\text{Sin}[e]^3}{c}-$$
$$\frac{2 A\,\text{Sin}[e]\,\text{Tan}[e]}{c}+\frac{4 i B\,\text{Sin}[e]\,\text{Tan}[e]}{c}-\frac{2 A\,\text{Sin}[e]^3\,\text{Tan}[e]}{c}+\frac{4 i B\,\text{Sin}[e]^3\,\text{Tan}[e]}{c}-$$
$$\left.i\,(A-2 i B)\left(\frac{4\,\text{Cos}[3 e]}{c}-\frac{4 i\,\text{Sin}[3 e]}{c}\right)\text{Tan}[e]\right)(a+i a\,\text{Tan}[e+f x])^3\,(A+B\,\text{Tan}[e+f x])$$

Problem 698: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i a\,\text{Tan}[e+f x])^3\,(A+B\,\text{Tan}[e+f x])}{(c-i c\,\text{Tan}[e+f x])^2}\,dx$$

Optimal (type 3, 123 leaves, 3 steps):

$$\frac{a^3 (A-5 i B) x}{c^2}-\frac{a^3 (i A+5 B) \text{Log}[\text{Cos}[e+f x]]}{c^2 f}+\frac{i a^3 B \text{Tan}[e+f x]}{c^2 f}+\frac{2 a^3 (i A+B)}{c^2 f (i+\text{Tan}[e+f x])^2}-\frac{4 a^3 (A-2 i B)}{c^2 f (i+\text{Tan}[e+f x])}$$

Result (type 3, 1063 leaves):

$$\left((\mathrm{i}\,A+3B)\,\mathrm{Cos}[2fx]\,\mathrm{Cos}[e+fx]^4\left(\frac{\mathrm{Cos}[e]}{c^2}-\frac{\mathrm{i}\,\mathrm{Sin}[e]}{c^2}\right)(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[e+fx])\right)\Big/\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left((A-\mathrm{i}\,B)\,\mathrm{Cos}[4fx]\,\mathrm{Cos}[e+fx]^4\left(-\frac{\mathrm{i}\,\mathrm{Cos}[e]}{2c^2}+\frac{\mathrm{Sin}[e]}{2c^2}\right)(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[e+fx])\right)\Big/\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left((A-5\,\mathrm{i}\,B)\,\mathrm{Cos}[e+fx]^4\left(\frac{f\,x\,\mathrm{Cos}[3e]}{c^2}-\frac{\mathrm{i}\,f\,x\,\mathrm{Sin}[3e]}{c^2}\right)(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[e+fx])\right)\Big/\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left((A-5\,\mathrm{i}\,B)\,\mathrm{Cos}[e+fx]^4\left(-\frac{\mathrm{i}\,\mathrm{Cos}[3e]\,\mathrm{Log}\left[\mathrm{Cos}[e+fx]^2\right]}{2c^2}-\frac{\mathrm{Log}\left[\mathrm{Cos}[e+fx]^2\right]\mathrm{Sin}[3e]}{2c^2}\right)\right.$$
$$\left.(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\,(A+B\,\mathrm{Tan}[e+fx])\right)\Big/$$
$$\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left(\mathrm{i}\,B\,\mathrm{Cos}[e+fx]^3\left(\frac{\mathrm{Cos}[3e]}{c^2}-\frac{\mathrm{i}\,\mathrm{Sin}[3e]}{c^2}\right)\mathrm{Sin}[fx]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\,(A+B\,\mathrm{Tan}[e+fx])\right)\Big/$$
$$\left(f\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\right.$$
$$\left.(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left((A-3\,\mathrm{i}\,B)\,\mathrm{Cos}[e+fx]^4\left(-\frac{\mathrm{Cos}[e]}{c^2}+\frac{\mathrm{i}\,\mathrm{Sin}[e]}{c^2}\right)\mathrm{Sin}[2fx]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[e+fx])\right)\Big/\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\left((A-\mathrm{i}\,B)\,\mathrm{Cos}[e+fx]^4\left(\frac{\mathrm{Cos}[e]}{2c^2}+\frac{\mathrm{i}\,\mathrm{Sin}[e]}{2c^2}\right)\mathrm{Sin}[4fx]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\right.$$
$$\left.(A+B\,\mathrm{Tan}[e+fx])\right)\Big/\left(f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)+$$
$$\frac{1}{(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])}$$
$$x\,\mathrm{Cos}[e+fx]^4\left(-\frac{A\,\mathrm{Cos}[e]}{2c^2}+\frac{5\,\mathrm{i}\,B\,\mathrm{Cos}[e]}{2c^2}+\frac{A\,\mathrm{Cos}[e]^3}{2c^2}-\frac{5\,\mathrm{i}\,B\,\mathrm{Cos}[e]^3}{2c^2}+\frac{\mathrm{i}\,A\,\mathrm{Sin}[e]}{c^2}+\frac{5B\,\mathrm{Sin}[e]}{c^2}-\right.$$
$$\frac{2\,\mathrm{i}\,A\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]}{c^2}-\frac{10B\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]}{c^2}-\frac{3A\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2}{c^2}+\frac{15\,\mathrm{i}\,B\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2}{c^2}+$$
$$\frac{2\,\mathrm{i}\,A\,\mathrm{Sin}[e]^3}{c^2}+\frac{10B\,\mathrm{Sin}[e]^3}{c^2}+\frac{A\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]}{2c^2}-\frac{5\,\mathrm{i}\,B\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]}{2c^2}+$$
$$\left.\frac{A\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]}{2c^2}-\frac{5\,\mathrm{i}\,B\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]}{2c^2}+\mathrm{i}\,(A-5\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[3e]}{c^2}-\frac{\mathrm{i}\,\mathrm{Sin}[3e]}{c^2}\right)\mathrm{Tan}[e]\right)$$
$$(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^3\,(A+B\,\mathrm{Tan}[e+fx])$$

Problem 702: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])}{(c-i c \operatorname{Tan}[e+f x])^6} \, dx$$

Optimal (type 3, 127 leaves, 3 steps):

$$\frac{2 a^3 (i A+B)}{3 c^6 f (i+\operatorname{Tan}[e+f x])^6}-\frac{4 a^3 (A-2 i B)}{5 c^6 f (i+\operatorname{Tan}[e+f x])^5}-\frac{a^3 (i A+5 B)}{4 c^6 f (i+\operatorname{Tan}[e+f x])^4}-\frac{i a^3 B}{3 c^6 f (i+\operatorname{Tan}[e+f x])^3}$$

Result (type 3, 871 leaves):

$$\left((-i A+B) \operatorname{Cos}[6 f x] \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[3 e]}{48 c^6}+\frac{i \operatorname{Sin}[3 e]}{48 c^6}\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((-3 i A+B) \operatorname{Cos}[8 f x] \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[5 e]}{64 c^6}+\frac{i \operatorname{Sin}[5 e]}{64 c^6}\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((3 A-i B) \operatorname{Cos}[10 f x] \operatorname{Cos}[e+f x]^4 \left(-\frac{i \operatorname{Cos}[7 e]}{80 c^6}+\frac{\operatorname{Sin}[7 e]}{80 c^6}\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((A-i B) \operatorname{Cos}[12 f x] \operatorname{Cos}[e+f x]^4 \left(-\frac{i \operatorname{Cos}[9 e]}{96 c^6}+\frac{\operatorname{Sin}[9 e]}{96 c^6}\right) (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((A+i B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[3 e]}{48 c^6}+\frac{i \operatorname{Sin}[3 e]}{48 c^6}\right) \operatorname{Sin}[6 f x] (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((3 A+i B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[5 e]}{64 c^6}+\frac{i \operatorname{Sin}[5 e]}{64 c^6}\right) \operatorname{Sin}[8 f x] (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((3 A-i B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[7 e]}{80 c^6}+\frac{i \operatorname{Sin}[7 e]}{80 c^6}\right) \operatorname{Sin}[10 f x] (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((A-i B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[9 e]}{96 c^6}+\frac{i \operatorname{Sin}[9 e]}{96 c^6}\right) \operatorname{Sin}[12 f x] (a+i a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)$$

Problem 704: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+\mathrm{i}\, a \operatorname{Tan}[e+f x])^3 (A+B \operatorname{Tan}[e+f x])}{(c-\mathrm{i}\, c \operatorname{Tan}[e+f x])^8} \, dx$$

Optimal (type 3, 127 leaves, 3 steps):

$$-\frac{a^3 (\mathrm{i} A+B)}{2 c^8 f (\mathrm{i}+\operatorname{Tan}[e+f x])^8}+\frac{4 a^3 (A-2 \mathrm{i} B)}{7 c^8 f (\mathrm{i}+\operatorname{Tan}[e+f x])^7}+\frac{a^3 (\mathrm{i} A+5 B)}{6 c^8 f (\mathrm{i}+\operatorname{Tan}[e+f x])^6}+\frac{\mathrm{i} a^3 B}{5 c^8 f (\mathrm{i}+\operatorname{Tan}[e+f x])^5}$$

Result (type 3, 1311 leaves):

$$\left((-\mathrm{i} A+B) \operatorname{Cos}[6 f x] \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[3 e]}{192 c^8}+\frac{\mathrm{i} \operatorname{Sin}[3 e]}{192 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((-5 \mathrm{i} A+3 B) \operatorname{Cos}[8 f x] \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[5 e]}{256 c^8}+\frac{\mathrm{i} \operatorname{Sin}[5 e]}{256 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((-5 \mathrm{i} A+B) \operatorname{Cos}[10 f x] \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[7 e]}{160 c^8}+\frac{\mathrm{i} \operatorname{Sin}[7 e]}{160 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((5 A-\mathrm{i} B) \operatorname{Cos}[12 f x] \operatorname{Cos}[e+f x]^4 \left(-\frac{\mathrm{i} \operatorname{Cos}[9 e]}{192 c^8}+\frac{\operatorname{Sin}[9 e]}{192 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((5 A-3 \mathrm{i} B) \operatorname{Cos}[14 f x] \operatorname{Cos}[e+f x]^4 \left(-\frac{\mathrm{i} \operatorname{Cos}[11 e]}{448 c^8}+\frac{\operatorname{Sin}[11 e]}{448 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((A-\mathrm{i} B) \operatorname{Cos}[16 f x] \operatorname{Cos}[e+f x]^4 \left(-\frac{\mathrm{i} \operatorname{Cos}[13 e]}{512 c^8}+\frac{\operatorname{Sin}[13 e]}{512 c^8}\right) (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((A+\mathrm{i} B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[3 e]}{192 c^8}+\frac{\mathrm{i} \operatorname{Sin}[3 e]}{192 c^8}\right) \operatorname{Sin}[6 f x] (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((5 A+3 \mathrm{i} B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[5 e]}{256 c^8}+\frac{\mathrm{i} \operatorname{Sin}[5 e]}{256 c^8}\right) \operatorname{Sin}[8 f x] (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$
$$\left.(A+B \operatorname{Tan}[e+f x])\right) \Big/ \left(f (\operatorname{Cos}[f x]+\mathrm{i} \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])\right)+$$
$$\left((5 A+\mathrm{i} B) \operatorname{Cos}[e+f x]^4 \left(\frac{\operatorname{Cos}[7 e]}{160 c^8}+\frac{\mathrm{i} \operatorname{Sin}[7 e]}{160 c^8}\right) \operatorname{Sin}[10 f x] (a+\mathrm{i} a \operatorname{Tan}[e+f x])^3 \right.$$

$$\left.\left(A+B\,\text{Tan}[e+f\,x]\right)\right) \Big/ \left(f\,\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^3\,\left(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x]\right)\right)+$$
$$\left(\left(5\,A-i\,B\right)\,\text{Cos}[e+f\,x]^4\,\left(\frac{\text{Cos}[9\,e]}{192\,c^8}+\frac{i\,\text{Sin}[9\,e]}{192\,c^8}\right)\,\text{Sin}[12\,f\,x]\,\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\text{Tan}[e+f\,x]\right)\right) \Big/ \left(f\,\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^3\,\left(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x]\right)\right)+$$
$$\left(\left(5\,A-3\,i\,B\right)\,\text{Cos}[e+f\,x]^4\,\left(\frac{\text{Cos}[11\,e]}{448\,c^8}+\frac{i\,\text{Sin}[11\,e]}{448\,c^8}\right)\,\text{Sin}[14\,f\,x]\,\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\text{Tan}[e+f\,x]\right)\right) \Big/ \left(f\,\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^3\,\left(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x]\right)\right)+$$
$$\left(\left(A-i\,B\right)\,\text{Cos}[e+f\,x]^4\,\left(\frac{\text{Cos}[13\,e]}{512\,c^8}+\frac{i\,\text{Sin}[13\,e]}{512\,c^8}\right)\,\text{Sin}[16\,f\,x]\,\left(a+i\,a\,\text{Tan}[e+f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\text{Tan}[e+f\,x]\right)\right) \Big/ \left(f\,\left(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x]\right)^3\,\left(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x]\right)\right)$$

Problem 707: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A+B\,\text{Tan}[e+f\,x]\right)\,\left(c-i\,c\,\text{Tan}[e+f\,x]\right)^3}{a+i\,a\,\text{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 121 leaves, 3 steps):

$$-\frac{4\,\left(A+2\,i\,B\right)\,c^3\,x}{a}-\frac{4\,\left(i\,A-2\,B\right)\,c^3\,\text{Log}[\text{Cos}[e+f\,x]]}{a\,f}-$$
$$\frac{4\,\left(A+i\,B\right)\,c^3}{a\,f\,\left(i-\text{Tan}[e+f\,x]\right)}+\frac{\left(A+4\,i\,B\right)\,c^3\,\text{Tan}[e+f\,x]}{a\,f}+\frac{B\,c^3\,\text{Tan}[e+f\,x]^2}{2\,a\,f}$$

Result (type 3, 972 leaves):

$$\Big(\Big(-i\,A\,c^3\,\mathrm{Cos}\big[\tfrac{e}{2}\big]+2\,B\,c^3\,\mathrm{Cos}\big[\tfrac{e}{2}\big]+A\,c^3\,\mathrm{Sin}\big[\tfrac{e}{2}\big]+2\,i\,B\,c^3\,\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)$$
$$\Big(-4\,i\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,\mathrm{Cos}\big[\tfrac{e}{2}\big]+4\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])$$
$$(A+B\,\mathrm{Tan}[e+f\,x])\Big)\Big/\,(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$\Big(\Big(-i\,A\,c^3\,\mathrm{Cos}\big[\tfrac{e}{2}\big]+2\,B\,c^3\,\mathrm{Cos}\big[\tfrac{e}{2}\big]+A\,c^3\,\mathrm{Sin}\big[\tfrac{e}{2}\big]+2\,i\,B\,c^3\,\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)$$
$$\Big(2\,\mathrm{Cos}\big[\tfrac{e}{2}\big]\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]+2\,i\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\,\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])$$
$$(A+B\,\mathrm{Tan}[e+f\,x])\Big)\Big/\,(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$((A+i\,B)\,\mathrm{Cos}[2\,f\,x]\,(2\,i\,c^3\,\mathrm{Cos}[e]+2\,c^3\,\mathrm{Sin}[e])\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x]))\,/$$
$$(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$\Big(\mathrm{Sec}[e+f\,x]^2\,\Big(\frac{1}{2}\,B\,c^3\,\mathrm{Cos}[e]+\frac{1}{2}\,i\,B\,c^3\,\mathrm{Sin}[e]\Big)\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x])\Big)\Big/$$
$$(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$((A+2\,i\,B)\,(-4\,c^3\,f\,x\,\mathrm{Cos}[e]-4\,i\,c^3\,f\,x\,\mathrm{Sin}[e])\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x]))\,/$$
$$(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$((A+i\,B)\,(2\,c^3\,\mathrm{Cos}[e]-2\,i\,c^3\,\mathrm{Sin}[e])\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])\,\mathrm{Sin}[2\,f\,x]\,(A+B\,\mathrm{Tan}[e+f\,x]))\,/$$
$$(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))+$$
$$(\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])\,(i\,A\,c^3\,\mathrm{Cos}[e-f\,x]-4\,B\,c^3\,\mathrm{Cos}[e-f\,x]-$$
$$i\,A\,c^3\,\mathrm{Cos}[e+f\,x]+4\,B\,c^3\,\mathrm{Cos}[e+f\,x]-A\,c^3\,\mathrm{Sin}[e-f\,x]-4\,i\,B\,c^3\,\mathrm{Sin}[e-f\,x]+$$
$$A\,c^3\,\mathrm{Sin}[e+f\,x]+4\,i\,B\,c^3\,\mathrm{Sin}[e+f\,x])\,(A+B\,\mathrm{Tan}[e+f\,x]))\Big/$$
$$\Big(2\,f\,\Big(\mathrm{Cos}\big[\tfrac{e}{2}\big]-\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)\,\Big(\mathrm{Cos}\big[\tfrac{e}{2}\big]+\mathrm{Sin}\big[\tfrac{e}{2}\big]\Big)\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])$$
$$(a+i\,a\,\mathrm{Tan}[e+f\,x])\Big)+(x\,(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x])$$
$$(4\,A\,c^3\,\mathrm{Sec}[e]+8\,i\,B\,c^3\,\mathrm{Sec}[e]+i\,(A+2\,i\,B)\,(4\,c^3\,\mathrm{Cos}[e]+4\,i\,c^3\,\mathrm{Sin}[e])\,\mathrm{Tan}[e])$$
$$(A+B\,\mathrm{Tan}[e+f\,x]))\,/\,((A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+i\,a\,\mathrm{Tan}[e+f\,x]))$$

Problem 709: Result more than twice size of optimal antiderivative.

$$\int\frac{(A+B\,\mathrm{Tan}[e+f\,x])\,(c-i\,c\,\mathrm{Tan}[e+f\,x])}{a+i\,a\,\mathrm{Tan}[e+f\,x]}\,dx$$

Optimal (type 3, 57 leaves, 3 steps):

$$-\frac{i\,B\,c\,x}{a}+\frac{B\,c\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]}{a\,f}-\frac{(A+i\,B)\,c}{a\,f\,(i-\mathrm{Tan}[e+f\,x])}$$

Result (type 3, 124 leaves):

$$\Big(c\,\mathrm{Cos}[e+f\,x]\,(A+B\,\mathrm{Tan}[e+f\,x])\,\Big(A+i\,B-i\,B\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]+$$
$$\Big(-i\,A+B+B\,\mathrm{Log}\big[\mathrm{Cos}[e+f\,x]^2\big]\Big)\,\mathrm{Tan}[e+f\,x]-2\,i\,B\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,(-i+\mathrm{Tan}[e+f\,x])\Big)\Big)\Big/$$
$$(2\,a\,f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(-i+\mathrm{Tan}[e+f\,x]))$$

Problem 710: Result more than twice size of optimal antiderivative.

$$\int \frac{A + B \operatorname{Tan}[e + f x]}{a + i a \operatorname{Tan}[e + f x]} \, dx$$

Optimal (type 3, 47 leaves, 2 steps):

$$\frac{(A - i B) x}{2 a} + \frac{i A - B}{2 f (a + i a \operatorname{Tan}[e + f x])}$$

Result (type 3, 102 leaves):

$$\Big(\operatorname{Cos}[e + f x] (A + B \operatorname{Tan}[e + f x]) \\ \big(A - 2 i A f x + B (i - 2 f x) + (B - 2 i B f x + A (-i + 2 f x)) \operatorname{Tan}[e + f x]\big)\Big) \Big/ \\ \big(4 a f (A \operatorname{Cos}[e + f x] + B \operatorname{Sin}[e + f x]) (-i + \operatorname{Tan}[e + f x])\big)$$

Problem 715: Attempted integration timed out after 120 seconds.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^n}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 5, 115 leaves, 3 steps):

$$\frac{1}{16 a^2 f n} (i A (2 - n) + B (2 + n)) \operatorname{Hypergeometric2F1}\left[2, n, 1 + n, \frac{1}{2} (1 - i \operatorname{Tan}[e + f x])\right] \\ (c - i c \operatorname{Tan}[e + f x])^n + \frac{(i A - B) (c - i c \operatorname{Tan}[e + f x])^n}{4 a^2 f (1 + i \operatorname{Tan}[e + f x])^2}$$

Result (type 1, 1 leaves):

???

Problem 716: Result more than twice size of optimal antiderivative.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^5}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 194 leaves, 3 steps):

$$\frac{8 (3 A + 7 i B) c^5 x}{a^2} + \frac{8 (3 i A - 7 B) c^5 \operatorname{Log}[\operatorname{Cos}[e + f x]]}{a^2 f} - \\ \frac{8 (i A - B) c^5}{a^2 f (i - \operatorname{Tan}[e + f x])^2} + \frac{16 (2 A + 3 i B) c^5}{a^2 f (i - \operatorname{Tan}[e + f x])} - \\ \frac{(7 A + 24 i B) c^5 \operatorname{Tan}[e + f x]}{a^2 f} + \frac{(i A - 7 B) c^5 \operatorname{Tan}[e + f x]^2}{2 a^2 f} + \frac{i B c^5 \operatorname{Tan}[e + f x]^3}{3 a^2 f}$$

Result (type 3, 1357 leaves):

$$\Big(4\,(-3\,i\,A+5\,B)\,c^5\,\text{Cos}[2\,f\,x]\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e+f\,x]\,(3\,A\,c^5\,\text{Cos}[e]+7\,i\,B\,c^5\,\text{Cos}[e]+3\,i\,A\,c^5\,\text{Sin}[e]-7\,B\,c^5\,\text{Sin}[e])$$
$$(8\,\text{ArcTan}[\text{Tan}[f\,x]]\,\text{Cos}[e]+8\,i\,\text{ArcTan}[\text{Tan}[f\,x]]\,\text{Sin}[e])\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e+f\,x]\,(3\,A\,c^5\,\text{Cos}[e]+7\,i\,B\,c^5\,\text{Cos}[e]+3\,i\,A\,c^5\,\text{Sin}[e]-7\,B\,c^5\,\text{Sin}[e])$$
$$\left(4\,i\,\text{Cos}[e]\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]-4\,\text{Log}\left[\text{Cos}[e+f\,x]^2\right]\,\text{Sin}[e]\right)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\,(3\,A\,\text{Cos}[e]+21\,i\,B\,\text{Cos}[e]+2\,B\,\text{Sin}[e])$$
$$\left(\frac{1}{6}\,i\,c^5\,\text{Cos}[2\,e]-\frac{1}{6}\,c^5\,\text{Sin}[2\,e]\right)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big((A+i\,B)\,\text{Cos}[4\,f\,x]\,\text{Sec}[e+f\,x]\,(2\,i\,c^5\,\text{Cos}[2\,e]+2\,c^5\,\text{Sin}[2\,e])\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big((3\,A+7\,i\,B)\,\text{Sec}[e+f\,x]\,(8\,c^5\,f\,x\,\text{Cos}[2\,e]+8\,i\,c^5\,f\,x\,\text{Sin}[2\,e])\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)-$$
$$\Big(4\,(3\,A+5\,i\,B)\,c^5\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\text{Sin}[2\,f\,x]\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big((A+i\,B)\,\text{Sec}[e+f\,x]\,(2\,c^5\,\text{Cos}[2\,e]-2\,i\,c^5\,\text{Sin}[2\,e])\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\text{Sin}[4\,f\,x]$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e]\,\text{Sec}[e+f\,x]^4\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\Big(-\frac{1}{2}\,B\,c^5\,\text{Cos}[2\,e-f\,x]+\frac{1}{2}\,B\,c^5\,\text{Cos}[2\,e+f\,x]-$$
$$\frac{1}{2}\,i\,B\,c^5\,\text{Sin}[2\,e-f\,x]+\frac{1}{2}\,i\,B\,c^5\,\text{Sin}[2\,e+f\,x]\Big)\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(3\,f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\Big(-\frac{21}{2}\,i\,A\,c^5\,\text{Cos}[2\,e-f\,x]+\frac{73}{2}\,B\,c^5\,\text{Cos}[2\,e-f\,x]+$$
$$\frac{21}{2}\,i\,A\,c^5\,\text{Cos}[2\,e+f\,x]-\frac{73}{2}\,B\,c^5\,\text{Cos}[2\,e+f\,x]+\frac{21}{2}\,A\,c^5\,\text{Sin}[2\,e-f\,x]+\frac{73}{2}\,i\,B\,c^5$$
$$\text{Sin}[2\,e-f\,x]-\frac{21}{2}\,A\,c^5\,\text{Sin}[2\,e+f\,x]-\frac{73}{2}\,i\,B\,c^5\,\text{Sin}[2\,e+f\,x]\Big)\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(3\,f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(x\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\big(-24\,A\,c^5-56\,i\,B\,c^5-24\,i\,A\,c^5\,\text{Tan}[e]+56\,B\,c^5\,\text{Tan}[e]+$$
$$(-3\,i\,A+7\,B)\,(8\,c^5\,\text{Cos}[2\,e]+8\,i\,c^5\,\text{Sin}[2\,e])\,\text{Tan}[e]\big)\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big((A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)$$

Problem 717: Result more than twice size of optimal antiderivative.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^4}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 158 leaves, 3 steps):

$$\frac{6 (A + 3 i B) c^4 x}{a^2} + \frac{6 (i A - 3 B) c^4 \operatorname{Log}[\operatorname{Cos}[e + f x]]}{a^2 f} - \frac{4 (i A - B) c^4}{a^2 f (i - \operatorname{Tan}[e + f x])^2} + \frac{4 (3 A + 5 i B) c^4}{a^2 f (i - \operatorname{Tan}[e + f x])} - \frac{(A + 6 i B) c^4 \operatorname{Tan}[e + f x]}{a^2 f} - \frac{B c^4 \operatorname{Tan}[e + f x]^2}{2 a^2 f}$$

Result (type 3, 1079 leaves):

$$c^4\left(\left(4\,(-\mathrm{i}\,A+2\,B)\,\mathrm{Cos}[2\,f\,x]\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\right.$$

$$\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left(\mathrm{Sec}[e+f\,x]\,(A\,\mathrm{Cos}[e]+3\,\mathrm{i}\,B\,\mathrm{Cos}[e]+\mathrm{i}\,A\,\mathrm{Sin}[e]-3\,B\,\mathrm{Sin}[e])\right.$$

$$(6\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,\mathrm{Cos}[e]+6\,\mathrm{i}\,\mathrm{ArcTan}[\mathrm{Tan}[f\,x]]\,\mathrm{Sin}[e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2$$

$$\left.(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left(\mathrm{Sec}[e+f\,x]\,(A\,\mathrm{Cos}[e]+3\,\mathrm{i}\,B\,\mathrm{Cos}[e]+\mathrm{i}\,A\,\mathrm{Sin}[e]-3\,B\,\mathrm{Sin}[e])\right.$$

$$\left(3\,\mathrm{i}\,\mathrm{Cos}[e]\,\mathrm{Log}\left[\mathrm{Cos}[e+f\,x]^2\right]-3\,\mathrm{Log}\left[\mathrm{Cos}[e+f\,x]^2\right]\,\mathrm{Sin}[e]\right)\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2$$

$$\left.(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left((A+\mathrm{i}\,B)\,\mathrm{Cos}[4\,f\,x]\,\mathrm{Sec}[e+f\,x]\,(\mathrm{i}\,\mathrm{Cos}[2\,e]+\mathrm{Sin}[2\,e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\right.$$

$$\left.(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left(\mathrm{Sec}[e+f\,x]^3\left(-\frac{1}{2}\,B\,\mathrm{Cos}[2\,e]-\frac{1}{2}\,\mathrm{i}\,B\,\mathrm{Sin}[2\,e]\right)\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/$$

$$\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left((A+3\,\mathrm{i}\,B)\,\mathrm{Sec}[e+f\,x]\,(6\,f\,x\,\mathrm{Cos}[2\,e]+6\,\mathrm{i}\,f\,x\,\mathrm{Sin}[2\,e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\right.$$

$$\left.(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)-$$

$$\left(4\,(A+2\,\mathrm{i}\,B)\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,\mathrm{Sin}[2\,f\,x]\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/$$

$$\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left((A+\mathrm{i}\,B)\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[2\,e]-\mathrm{i}\,\mathrm{Sin}[2\,e])\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,\mathrm{Sin}[4\,f\,x]\right.$$

$$\left.(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left(\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]^2\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\left(-\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[2\,e-f\,x]+3\,B\,\mathrm{Cos}[2\,e-f\,x]+\right.\right.$$

$$\frac{1}{2}\,\mathrm{i}\,A\,\mathrm{Cos}[2\,e+f\,x]-3\,B\,\mathrm{Cos}[2\,e+f\,x]+\frac{1}{2}\,A\,\mathrm{Sin}[2\,e-f\,x]+3\,\mathrm{i}\,B\,\mathrm{Sin}[2\,e-f\,x]-$$

$$\left.\left.\frac{1}{2}\,A\,\mathrm{Sin}[2\,e+f\,x]-3\,\mathrm{i}\,B\,\mathrm{Sin}[2\,e+f\,x]\right)\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/$$

$$\left(f\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)+$$

$$\left(x\,\mathrm{Sec}[e+f\,x]\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,(-6\,A-18\,\mathrm{i}\,B-6\,\mathrm{i}\,A\,\mathrm{Tan}[e]+18\,B\,\mathrm{Tan}[e]+\right.$$

$$\left.(-\mathrm{i}\,A+3\,B)\,(6\,\mathrm{Cos}[2\,e]+6\,\mathrm{i}\,\mathrm{Sin}[2\,e])\,\mathrm{Tan}[e])\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/$$

$$\left.\left((A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2\right)\right)$$

Problem 718: Result more than twice size of optimal antiderivative.

$$\int\frac{(A+B\,\mathrm{Tan}[e+f\,x])\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^3}{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 128 leaves, 3 steps):

$$\frac{(A+5\,i\,B)\,c^3\,x}{a^2}+\frac{(i\,A-5\,B)\,c^3\,\text{Log}[\text{Cos}[e+f\,x]]}{a^2\,f}-\frac{2\,(i\,A-B)\,c^3}{a^2\,f\,(i-\text{Tan}[e+f\,x])^2}+\frac{4\,(A+2\,i\,B)\,c^3}{a^2\,f\,(i-\text{Tan}[e+f\,x])}-\frac{i\,B\,c^3\,\text{Tan}[e+f\,x]}{a^2\,f}$$

Result (type 3, 1023 leaves):

$$\Big(\big(-i\,A+3\,B\big)\,c^3\,\text{Cos}[2\,f\,x]\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e+f\,x]\,\big(A\,c^3\,\text{Cos}[e]+5\,i\,B\,c^3\,\text{Cos}[e]+i\,A\,c^3\,\text{Sin}[e]-5\,B\,c^3\,\text{Sin}[e]\big)$$
$$(\text{ArcTan}[\text{Tan}[f\,x]]\,\text{Cos}[e]+i\,\text{ArcTan}[\text{Tan}[f\,x]]\,\text{Sin}[e])\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(\text{Sec}[e+f\,x]\,\big(A\,c^3\,\text{Cos}[e]+5\,i\,B\,c^3\,\text{Cos}[e]+i\,A\,c^3\,\text{Sin}[e]-5\,B\,c^3\,\text{Sin}[e]\big)$$
$$\left(\frac{1}{2}\,i\,\text{Cos}[e]\,\text{Log}\big[\text{Cos}[e+f\,x]^2\big]-\frac{1}{2}\,\text{Log}\big[\text{Cos}[e+f\,x]^2\big]\,\text{Sin}[e]\right)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\left((A+i\,B)\,\text{Cos}[4\,f\,x]\,\text{Sec}[e+f\,x]\,\left(\frac{1}{2}\,i\,c^3\,\text{Cos}[2\,e]+\frac{1}{2}\,c^3\,\text{Sin}[2\,e]\right)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\right.$$
$$\Big.(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big((A+5\,i\,B)\,\text{Sec}[e+f\,x]\,\big(c^3\,f\,x\,\text{Cos}[2\,e]+i\,c^3\,f\,x\,\text{Sin}[2\,e]\big)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2$$
$$(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)-$$
$$\Big((A+3\,i\,B)\,c^3\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\text{Sin}[2\,f\,x]\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\left((A+i\,B)\,\text{Sec}[e+f\,x]\,\left(\frac{1}{2}\,c^3\,\text{Cos}[2\,e]-\frac{1}{2}\,i\,c^3\,\text{Sin}[2\,e]\right)\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\text{Sin}[4\,f\,x]\right.$$
$$\Big.(A+B\,\text{Tan}[e+f\,x])\Big)\Big/\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\left(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\left(\frac{1}{2}\,B\,c^3\,\text{Cos}[2\,e-f\,x]-\frac{1}{2}\,B\,c^3\,\text{Cos}[2\,e+f\,x]+\right.\right.$$
$$\left.\left.\frac{1}{2}\,i\,B\,c^3\,\text{Sin}[2\,e-f\,x]-\frac{1}{2}\,i\,B\,c^3\,\text{Sin}[2\,e+f\,x]\right)\,(A+B\,\text{Tan}[e+f\,x])\right)\Big/$$
$$\Big(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)+$$
$$\Big(x\,\text{Sec}[e+f\,x]\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\,\big(-A\,c^3-5\,i\,B\,c^3-i\,A\,c^3\,\text{Tan}[e]+5\,B\,c^3\,\text{Tan}[e]+$$
$$(-i\,A+5\,B)\,\big(c^3\,\text{Cos}[2\,e]+i\,c^3\,\text{Sin}[2\,e]\big)\,\text{Tan}[e]\big)\,(A+B\,\text{Tan}[e+f\,x])\Big)\Big/$$
$$\Big((A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^2\Big)$$

Problem 727: Attempted integration timed out after 120 seconds.

$$\int\frac{(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^n}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 5, 115 leaves, 3 steps):

$$\frac{1}{48 a^3 f n}\left(i A (3-n)+B (3+n)\right) \text{Hypergeometric2F1}\left[3, n, 1+n, \frac{1}{2}(1-i \text{Tan}[e+f x])\right] (c-i c \text{Tan}[e+f x])^n+\frac{(i A-B) (c-i c \text{Tan}[e+f x])^n}{6 a^3 f (1+i \text{Tan}[e+f x])^3}$$

Result (type 1, 1 leaves):

???

Problem 728: Result more than twice size of optimal antiderivative.

$$\int \frac{(A+B \text{Tan}[e+f x]) (c-i c \text{Tan}[e+f x])^5}{(a+i a \text{Tan}[e+f x])^3} \, dx$$

Optimal (type 3, 191 leaves, 3 steps):

$$-\frac{8 (A+4 i B) c^5 x}{a^3}-\frac{8 (i A-4 B) c^5 \text{Log}[\text{Cos}[e+f x]]}{a^3 f}+\frac{16 (A+i B) c^5}{3 a^3 f (i-\text{Tan}[e+f x])^3}+\frac{8 (2 i A-3 B) c^5}{a^3 f (i-\text{Tan}[e+f x])^2}-\frac{8 (3 A+7 i B) c^5}{a^3 f (i-\text{Tan}[e+f x])}+\frac{(A+8 i B) c^5 \text{Tan}[e+f x]}{a^3 f}+\frac{B c^5 \text{Tan}[e+f x]^2}{2 a^3 f}$$

Result (type 3, 1496 leaves):

$$\left(\left(A+3\,\mathrm{i}\,B\right)\mathrm{Cos}[2\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\left(6\,\mathrm{i}\,c^5\,\mathrm{Cos}[e]-6\,c^5\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(-\mathrm{i}\,A+2\,B\right)\mathrm{Cos}[4\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\left(2\,c^5\,\mathrm{Cos}[e]-2\,\mathrm{i}\,c^5\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]^2\left(-\mathrm{i}\,A\,c^5\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]+4\,B\,c^5\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]+A\,c^5\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]+4\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)\right.$$
$$\left(8\,\mathrm{Cos}\left[\frac{3\,e}{2}\right]\mathrm{Log}[\mathrm{Cos}[e+f\,x]]+8\,\mathrm{i}\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]\,\mathrm{Sin}\left[\frac{3\,e}{2}\right]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(A+\mathrm{i}\,B\right)\mathrm{Cos}[6\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\left(\frac{2}{3}\,\mathrm{i}\,c^5\,\mathrm{Cos}[3\,e]+\frac{2}{3}\,c^5\,\mathrm{Sin}[3\,e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]^4\left(\frac{1}{2}\,B\,c^5\,\mathrm{Cos}[3\,e]+\frac{1}{2}\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}[3\,e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/$$
$$\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(A+4\,\mathrm{i}\,B\right)\mathrm{Sec}[e+f\,x]^2\left(-8\,c^5\,f\,x\,\mathrm{Cos}[3\,e]-8\,\mathrm{i}\,c^5\,f\,x\,\mathrm{Sin}[3\,e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(A+3\,\mathrm{i}\,B\right)\mathrm{Sec}[e+f\,x]^2\left(6\,c^5\,\mathrm{Cos}[e]+6\,\mathrm{i}\,c^5\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\mathrm{Sin}[2\,f\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(A+2\,\mathrm{i}\,B\right)\mathrm{Sec}[e+f\,x]^2\left(-2\,c^5\,\mathrm{Cos}[e]+2\,\mathrm{i}\,c^5\,\mathrm{Sin}[e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\mathrm{Sin}[4\,f\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\left(A+\mathrm{i}\,B\right)\mathrm{Sec}[e+f\,x]^2\left(\frac{2}{3}\,c^5\,\mathrm{Cos}[3\,e]-\frac{2}{3}\,\mathrm{i}\,c^5\,\mathrm{Sin}[3\,e]\right)\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\mathrm{Sin}[6\,f\,x]\right.$$
$$\left.\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\left(\mathrm{Sec}[e+f\,x]^3\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\left(\frac{1}{2}\,\mathrm{i}\,A\,c^5\,\mathrm{Cos}[3\,e-f\,x]-4\,B\,c^5\,\mathrm{Cos}[3\,e-f\,x]-\right.\right.$$
$$\frac{1}{2}\,\mathrm{i}\,A\,c^5\,\mathrm{Cos}[3\,e+f\,x]+4\,B\,c^5\,\mathrm{Cos}[3\,e+f\,x]-\frac{1}{2}\,A\,c^5\,\mathrm{Sin}[3\,e-f\,x]-4\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}[3\,e-f\,x]+$$
$$\left.\left.\frac{1}{2}\,A\,c^5\,\mathrm{Sin}[3\,e+f\,x]+4\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}[3\,e+f\,x]\right)\left(A+B\,\mathrm{Tan}[e+f\,x]\right)\right)\Big/\left(f\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\right.$$
$$\left.\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3\right)+$$
$$\frac{1}{\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^3}\,x\,\mathrm{Sec}[e+f\,x]^2\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3$$
$$\left(4\,A\,c^5\,\mathrm{Cos}[e]+16\,\mathrm{i}\,B\,c^5\,\mathrm{Cos}[e]-4\,A\,c^5\,\mathrm{Cos}[e]^3-16\,\mathrm{i}\,B\,c^5\,\mathrm{Cos}[e]^3+8\,\mathrm{i}\,A\,c^5\,\mathrm{Sin}[e]-\right.$$
$$32\,B\,c^5\,\mathrm{Sin}[e]-16\,\mathrm{i}\,A\,c^5\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]+64\,B\,c^5\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]+24\,A\,c^5\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2+$$
$$96\,\mathrm{i}\,B\,c^5\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2+16\,\mathrm{i}\,A\,c^5\,\mathrm{Sin}[e]^3-64\,B\,c^5\,\mathrm{Sin}[e]^3-4\,A\,c^5\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]-$$
$$16\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]-4\,A\,c^5\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]-16\,\mathrm{i}\,B\,c^5\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]+$$
$$\left.\mathrm{i}\left(A+4\,\mathrm{i}\,B\right)\left(8\,c^5\,\mathrm{Cos}[3\,e]+8\,\mathrm{i}\,c^5\,\mathrm{Sin}[3\,e]\right)\mathrm{Tan}[e]\right)\left(A+B\,\mathrm{Tan}[e+f\,x]\right)$$

Problem 729: Result more than twice size of optimal antiderivative.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^4}{(a + i a \operatorname{Tan}[e + f x])^3} \, dx$$

Optimal (type 3, 164 leaves, 3 steps):

$$-\frac{(A + 7 i B) c^4 x}{a^3} - \frac{(i A - 7 B) c^4 \operatorname{Log}[\operatorname{Cos}[e + f x]]}{a^3 f} + \frac{8 (A + i B) c^4}{3 a^3 f (i - \operatorname{Tan}[e + f x])^3} + \frac{2 (3 i A - 5 B) c^4}{a^3 f (i - \operatorname{Tan}[e + f x])^2} - \frac{6 (A + 3 i B) c^4}{a^3 f (i - \operatorname{Tan}[e + f x])} + \frac{i B c^4 \operatorname{Tan}[e + f x]}{a^3 f}$$

Result (type 3, 1239 leaves):

$$c^4 \Bigg(\Big(\big(A+5\,i\,B\big)\,\mathrm{Cos}[2\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\,\big(i\,\mathrm{Cos}[e]-\mathrm{Sin}[e]\big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(-i\,A+3\,B\big)\,\mathrm{Cos}[4\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\,\Big(\frac{\mathrm{Cos}[e]}{2}-\frac{1}{2}\,i\,\mathrm{Sin}[e]\Big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\mathrm{Sec}[e+f\,x]^2\,\Big(-i\,A\,\mathrm{Cos}\Big[\frac{3\,e}{2}\Big]+7\,B\,\mathrm{Cos}\Big[\frac{3\,e}{2}\Big]+A\,\mathrm{Sin}\Big[\frac{3\,e}{2}\Big]+7\,i\,B\,\mathrm{Sin}\Big[\frac{3\,e}{2}\Big]\Big) \Big(\mathrm{Cos}\Big[\frac{3\,e}{2}\Big]\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]+i\,\mathrm{Log}[\mathrm{Cos}[e+f\,x]]\,\mathrm{Sin}\Big[\frac{3\,e}{2}\Big]\Big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(A+i\,B\big)\,\mathrm{Cos}[6\,f\,x]\,\mathrm{Sec}[e+f\,x]^2\,\Big(\frac{1}{3}\,i\,\mathrm{Cos}[3\,e]+\frac{1}{3}\,\mathrm{Sin}[3\,e]\Big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(A+7\,i\,B\big)\,\mathrm{Sec}[e+f\,x]^2\,\big(-f\,x\,\mathrm{Cos}[3\,e]-i\,f\,x\,\mathrm{Sin}[3\,e]\big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(A+5\,i\,B\big)\,\mathrm{Sec}[e+f\,x]^2\,\big(\mathrm{Cos}[e]+i\,\mathrm{Sin}[e]\big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3\,\mathrm{Sin}[2\,f\,x] \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(A+3\,i\,B\big)\,\mathrm{Sec}[e+f\,x]^2\,\Big(-\frac{\mathrm{Cos}[e]}{2}+\frac{1}{2}\,i\,\mathrm{Sin}[e]\Big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3\,\mathrm{Sin}[4\,f\,x] \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\big(A+i\,B\big)\,\mathrm{Sec}[e+f\,x]^2\,\Big(\frac{1}{3}\,\mathrm{Cos}[3\,e]-\frac{1}{3}\,i\,\mathrm{Sin}[3\,e]\Big)\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3\,\mathrm{Sin}[6\,f\,x] \big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\Big(\mathrm{Sec}[e+f\,x]^3\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3\,\Big(-\frac{1}{2}\,B\,\mathrm{Cos}[3\,e-f\,x]+\frac{1}{2}\,B\,\mathrm{Cos}[3\,e+f\,x]- \frac{1}{2}\,i\,B\,\mathrm{Sin}[3\,e-f\,x]+\frac{1}{2}\,i\,B\,\mathrm{Sin}[3\,e+f\,x]\Big)\,\big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Big) \Big/ \Big(f\,\Big(\mathrm{Cos}\Big[\frac{e}{2}\Big]-\mathrm{Sin}\Big[\frac{e}{2}\Big]\Big) \Big(\mathrm{Cos}\Big[\frac{e}{2}\Big]+\mathrm{Sin}\Big[\frac{e}{2}\Big]\Big)\,\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3\Big) +$$

$$\frac{1}{\big(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\big)\,\big(a+i\,a\,\mathrm{Tan}[e+f\,x]\big)^3}\,x\,\mathrm{Sec}[e+f\,x]^2\,\big(\mathrm{Cos}[f\,x]+i\,\mathrm{Sin}[f\,x]\big)^3 \Big(\frac{1}{2}\,A\,\mathrm{Cos}[e]+\frac{7}{2}\,i\,B\,\mathrm{Cos}[e]-\frac{1}{2}\,A\,\mathrm{Cos}[e]^3-\frac{7}{2}\,i\,B\,\mathrm{Cos}[e]^3+i\,A\,\mathrm{Sin}[e]-7\,B\,\mathrm{Sin}[e]- 2\,i\,A\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]+14\,B\,\mathrm{Cos}[e]^2\,\mathrm{Sin}[e]+3\,A\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2+21\,i\,B\,\mathrm{Cos}[e]\,\mathrm{Sin}[e]^2+2\,i\,A\,\mathrm{Sin}[e]^3-14\,B\,\mathrm{Sin}[e]^3-\frac{1}{2}\,A\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]-\frac{7}{2}\,i\,B\,\mathrm{Sin}[e]\,\mathrm{Tan}[e]-\frac{1}{2}\,A\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]- \frac{7}{2}\,i\,B\,\mathrm{Sin}[e]^3\,\mathrm{Tan}[e]+i\,\big(A+7\,i\,B\big)\,\big(\mathrm{Cos}[3\,e]+i\,\mathrm{Sin}[3\,e]\big)\,\mathrm{Tan}[e]\Big)\,\big(A+B\,\mathrm{Tan}[e+f\,x]\big)\Bigg)$$

Problem 756: Result more than twice size of optimal antiderivative.

$$\int (a + i\, a \operatorname{Tan}[e + f x])^3 (A + B \operatorname{Tan}[e + f x]) (c - i\, c \operatorname{Tan}[e + f x])^{7/2}\, dx$$

Optimal (type 3, 144 leaves, 3 steps):

$$\frac{8 a^3 (i A + B) (c - i c \operatorname{Tan}[e + f x])^{7/2}}{7 f} - \frac{8 a^3 (i A + 2 B) (c - i c \operatorname{Tan}[e + f x])^{9/2}}{9 c f} + \frac{2 a^3 (i A + 5 B) (c - i c \operatorname{Tan}[e + f x])^{11/2}}{11 c^2 f} - \frac{2 a^3 B (c - i c \operatorname{Tan}[e + f x])^{13/2}}{13 c^3 f}$$

Result (type 3, 441 leaves):

$$\frac{1}{f (\operatorname{Cos}[f x] + i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e + f x] + B \operatorname{Sin}[e + f x])} \operatorname{Cos}[e + f x]^4$$
$$\Bigg((13 A + i B) \operatorname{Sec}[e] \operatorname{Sec}[e + f x]^4 (\operatorname{Cos}[e] - 9 i \operatorname{Sin}[e]) \left(\frac{2 i c^3 \operatorname{Cos}[3 e]}{1287} + \frac{2 c^3 \operatorname{Sin}[3 e]}{1287}\right) +$$
$$(13 A + i B) \operatorname{Sec}[e] \operatorname{Sec}[e + f x]^2 (\operatorname{Cos}[e] - 5 i \operatorname{Sin}[e]) \left(\frac{32 i c^3 \operatorname{Cos}[3 e]}{9009} + \frac{32 c^3 \operatorname{Sin}[3 e]}{9009}\right) +$$
$$\operatorname{Sec}[e + f x]^6 \left(\frac{2}{13} B c^3 \operatorname{Cos}[3 e] - \frac{2}{13} i B c^3 \operatorname{Sin}[3 e]\right) +$$
$$(13 A + i B) \operatorname{Sec}[e] \left(\frac{256 i c^3 \operatorname{Cos}[4 e]}{9009} + \frac{256 c^3 \operatorname{Sin}[4 e]}{9009}\right) +$$
$$\operatorname{Sec}[e] \operatorname{Sec}[e + f x]^5 \left(\frac{2}{143} \operatorname{Cos}[3 e] - \frac{2}{143} i \operatorname{Sin}[3 e]\right) (13 A c^3 \operatorname{Sin}[f x] + i B c^3 \operatorname{Sin}[f x]) +$$
$$\operatorname{Sec}[e] \operatorname{Sec}[e + f x]^3 \left(\frac{160 \operatorname{Cos}[3 e]}{9009} - \frac{160 i \operatorname{Sin}[3 e]}{9009}\right) (13 A c^3 \operatorname{Sin}[f x] + i B c^3 \operatorname{Sin}[f x]) +$$
$$\operatorname{Sec}[e] \operatorname{Sec}[e + f x] \left(\frac{256 \operatorname{Cos}[3 e]}{9009} - \frac{256 i \operatorname{Sin}[3 e]}{9009}\right) (13 A c^3 \operatorname{Sin}[f x] + i B c^3 \operatorname{Sin}[f x]) \Bigg)$$
$$\sqrt{\operatorname{Sec}[e + f x] (c \operatorname{Cos}[e + f x] - i c \operatorname{Sin}[e + f x])} (a + i a \operatorname{Tan}[e + f x])^3 (A + B \operatorname{Tan}[e + f x])$$

Problem 757: Result more than twice size of optimal antiderivative.

$$\int (a + i\, a \operatorname{Tan}[e + f x])^3 (A + B \operatorname{Tan}[e + f x]) (c - i\, c \operatorname{Tan}[e + f x])^{5/2}\, dx$$

Optimal (type 3, 144 leaves, 3 steps):

$$\frac{8 a^3 (i A + B) (c - i c \operatorname{Tan}[e + f x])^{5/2}}{5 f} - \frac{8 a^3 (i A + 2 B) (c - i c \operatorname{Tan}[e + f x])^{7/2}}{7 c f} + \frac{2 a^3 (i A + 5 B) (c - i c \operatorname{Tan}[e + f x])^{9/2}}{9 c^2 f} - \frac{2 a^3 B (c - i c \operatorname{Tan}[e + f x])^{11/2}}{11 c^3 f}$$

Result (type 3, 391 leaves):

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}\text{Cos}[e+f\,x]^4\left((11\,i\,A+B)\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(\text{Cos}[e]-5\,i\,\text{Sin}[e])\left(\frac{16\,c^2\,\text{Cos}[3\,e]}{3465}-\frac{16\,i\,c^2\,\text{Sin}[3\,e]}{3465}\right)+\text{Sec}[e]\,\text{Sec}[e+f\,x]^4\,(11\,i\,A\,\text{Cos}[e]+10\,B\,\text{Cos}[e]+9\,i\,B\,\text{Sin}[e])\left(\frac{2}{99}\,c^2\,\text{Cos}[3\,e]-\frac{2}{99}\,i\,c^2\,\text{Sin}[3\,e]\right)+(11\,i\,A+B)\,\text{Sec}[e]\left(\frac{128\,c^2\,\text{Cos}[4\,e]}{3465}-\frac{128\,i\,c^2\,\text{Sin}[4\,e]}{3465}\right)+i\,B\,c^2\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^5\left(\frac{2}{11}\,\text{Cos}[3\,e]-\frac{2}{11}\,i\,\text{Sin}[3\,e]\right)\text{Sin}[f\,x]+\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\left(\frac{16}{693}\,\text{Cos}[3\,e]-\frac{16}{693}\,i\,\text{Sin}[3\,e]\right)\left(11\,A\,c^2\,\text{Sin}[f\,x]-i\,B\,c^2\,\text{Sin}[f\,x]\right)+\text{Sec}[e]\,\text{Sec}[e+f\,x]\left(\frac{128\,\text{Cos}[3\,e]}{3465}-\frac{128\,i\,\text{Sin}[3\,e]}{3465}\right)\left(11\,A\,c^2\,\text{Sin}[f\,x]-i\,B\,c^2\,\text{Sin}[f\,x]\right)\right)\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 758: Result more than twice size of optimal antiderivative.

$$\int (a+i\,a\,\text{Tan}[e+f\,x])^3\,(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 144 leaves, 3 steps):

$$\frac{8\,a^3\,(i\,A+B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}{3\,f}-\frac{8\,a^3\,(i\,A+2\,B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{5\,c\,f}+\frac{2\,a^3\,(i\,A+5\,B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{7/2}}{7\,c^2\,f}-\frac{2\,a^3\,B\,(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}{9\,c^3\,f}$$

Result (type 3, 319 leaves):

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}\text{Cos}[e+f\,x]^4\left(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(117\,i\,A\,\text{Cos}[e]+109\,B\,\text{Cos}[e]-45\,A\,\text{Sin}[e]+85\,i\,B\,\text{Sin}[e])\left(\frac{2}{315}\,c\,\text{Cos}[3\,e]-\frac{2}{315}\,i\,c\,\text{Sin}[3\,e]\right)+\text{Sec}[e+f\,x]^4\left(-\frac{2}{9}\,B\,c\,\text{Cos}[3\,e]+\frac{2}{9}\,i\,B\,c\,\text{Sin}[3\,e]\right)+(3\,i\,A+B)\,\text{Sec}[e]\left(\frac{64}{315}\,c\,\text{Cos}[4\,e]-\frac{64}{315}\,i\,c\,\text{Sin}[4\,e]\right)+\text{Sec}[e]\,\text{Sec}[e+f\,x]\left(\frac{64}{315}\,\text{Cos}[3\,e]-\frac{64}{315}\,i\,\text{Sin}[3\,e]\right)(3\,A\,c\,\text{Sin}[f\,x]-i\,B\,c\,\text{Sin}[f\,x])+\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\left(-\frac{2}{63}\,\text{Cos}[3\,e]+\frac{2}{63}\,i\,\text{Sin}[3\,e]\right)(9\,A\,c\,\text{Sin}[f\,x]-17\,i\,B\,c\,\text{Sin}[f\,x])\right)\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^3\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 762: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\, a\, \text{Tan}[e+f\, x])^3\, (A+B\, \text{Tan}[e+f\, x])}{(c-i\, c\, \text{Tan}[e+f\, x])^{5/2}}\, dx$$

Optimal (type 3, 140 leaves, 3 steps):

$$-\frac{8\, a^3\, (i\, A+B)}{5\, f\, (c-i\, c\, \text{Tan}[e+f\, x])^{5/2}}+\frac{8\, a^3\, (i\, A+2\, B)}{3\, c\, f\, (c-i\, c\, \text{Tan}[e+f\, x])^{3/2}}-\frac{2\, a^3\, (i\, A+5\, B)}{c^2\, f\, \sqrt{c-i\, c\, \text{Tan}[e+f\, x]}}-\frac{2\, a^3\, B\, \sqrt{c-i\, c\, \text{Tan}[e+f\, x]}}{c^3\, f}$$

Result (type 3, 354 leaves):

$$\frac{1}{f\, (\text{Cos}[f\, x]+i\, \text{Sin}[f\, x])^3\, (A\, \text{Cos}[e+f\, x]+B\, \text{Sin}[e+f\, x])}\text{Cos}[e+f\, x]^4$$
$$\left((i\, A+11\, B)\, \text{Cos}[4\, f\, x]\left(\frac{\text{Cos}[e]}{15\, c^3}+\frac{i\, \text{Sin}[e]}{15\, c^3}\right)+(i\, A+11\, B)\, \text{Cos}[2\, f\, x]\left(-\frac{4\, \text{Cos}[e]}{15\, c^3}+\frac{4\, i\, \text{Sin}[e]}{15\, c^3}\right)+\right.$$
$$(i\, A+11\, B)\left(-\frac{8\, \text{Cos}[3\, e]}{15\, c^3}+\frac{8\, i\, \text{Sin}[3\, e]}{15\, c^3}\right)+(A-i\, B)\, \text{Cos}[6\, f\, x]\left(-\frac{i\, \text{Cos}[3\, e]}{5\, c^3}+\frac{\text{Sin}[3\, e]}{5\, c^3}\right)+$$
$$(A-11\, i\, B)\left(\frac{4\, \text{Cos}[e]}{15\, c^3}-\frac{4\, i\, \text{Sin}[e]}{15\, c^3}\right)\text{Sin}[2\, f\, x]+$$
$$\left.(A-11\, i\, B)\left(-\frac{\text{Cos}[e]}{15\, c^3}-\frac{i\, \text{Sin}[e]}{15\, c^3}\right)\text{Sin}[4\, f\, x]+(A-i\, B)\left(\frac{\text{Cos}[3\, e]}{5\, c^3}+\frac{i\, \text{Sin}[3\, e]}{5\, c^3}\right)\text{Sin}[6\, f\, x]\right)$$
$$\sqrt{\text{Sec}[e+f\, x]\, (c\, \text{Cos}[e+f\, x]-i\, c\, \text{Sin}[e+f\, x])}\, (a+i\, a\, \text{Tan}[e+f\, x])^3\, (A+B\, \text{Tan}[e+f\, x])$$

Problem 763: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i\, a\, \text{Tan}[e+f\, x])^3\, (A+B\, \text{Tan}[e+f\, x])}{(c-i\, c\, \text{Tan}[e+f\, x])^{7/2}}\, dx$$

Optimal (type 3, 142 leaves, 3 steps):

$$-\frac{8\, a^3\, (i\, A+B)}{7\, f\, (c-i\, c\, \text{Tan}[e+f\, x])^{7/2}}+\frac{8\, a^3\, (i\, A+2\, B)}{5\, c\, f\, (c-i\, c\, \text{Tan}[e+f\, x])^{5/2}}-\frac{2\, a^3\, (i\, A+5\, B)}{3\, c^2\, f\, (c-i\, c\, \text{Tan}[e+f\, x])^{3/2}}+\frac{2\, a^3\, B}{c^3\, f\, \sqrt{c-i\, c\, \text{Tan}[e+f\, x]}}$$

Result (type 3, 432 leaves):

$$\frac{1}{f\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^3\left(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x]\right)}\text{Cos}[e+f x]^4$$
$$\left(\left(A+13\,i\,B\right)\text{Cos}[4 f x]\left(\frac{i\,\text{Cos}[e]}{210\,c^4}-\frac{\text{Sin}[e]}{210\,c^4}\right)+\left(-i\,A+13\,B\right)\text{Cos}[2 f x]\left(\frac{2\,\text{Cos}[e]}{105\,c^4}-\frac{2\,i\,\text{Sin}[e]}{105\,c^4}\right)+\right.$$
$$\left(-3\,i\,A+4\,B\right)\text{Cos}[6 f x]\left(\frac{\text{Cos}[3 e]}{35\,c^4}+\frac{i\,\text{Sin}[3 e]}{35\,c^4}\right)+\left(-i\,A+13\,B\right)\left(\frac{4\,\text{Cos}[3 e]}{105\,c^4}-\frac{4\,i\,\text{Sin}[3 e]}{105\,c^4}\right)+$$
$$\left(A-i\,B\right)\text{Cos}[8 f x]\left(-\frac{i\,\text{Cos}[5 e]}{14\,c^4}+\frac{\text{Sin}[5 e]}{14\,c^4}\right)+\left(A+13\,i\,B\right)$$
$$\left(\frac{2\,\text{Cos}[e]}{105\,c^4}-\frac{2\,i\,\text{Sin}[e]}{105\,c^4}\right)\text{Sin}[2 f x]+\left(A+13\,i\,B\right)\left(-\frac{\text{Cos}[e]}{210\,c^4}-\frac{i\,\text{Sin}[e]}{210\,c^4}\right)\text{Sin}[4 f x]+$$
$$\left.\left(3\,A+4\,i\,B\right)\left(\frac{\text{Cos}[3 e]}{35\,c^4}+\frac{i\,\text{Sin}[3 e]}{35\,c^4}\right)\text{Sin}[6 f x]+\left(A-i\,B\right)\left(\frac{\text{Cos}[5 e]}{14\,c^4}+\frac{i\,\text{Sin}[5 e]}{14\,c^4}\right)\text{Sin}[8 f x]\right)$$
$$\sqrt{\text{Sec}[e+f x]\left(c\,\text{Cos}[e+f x]-i\,c\,\text{Sin}[e+f x]\right)}\left(a+i\,a\,\text{Tan}[e+f x]\right)^3\left(A+B\,\text{Tan}[e+f x]\right)$$

Problem 764: Attempted integration timed out after 120 seconds.

$$\int\frac{\left(A+B\,\text{Tan}[e+f x]\right)\left(c-i\,c\,\text{Tan}[e+f x]\right)^{7/2}}{a+i\,a\,\text{Tan}[e+f x]}\,dx$$

Optimal (type 3, 220 leaves, 7 steps):

$$-\frac{2\sqrt{2}\left(5\,i\,A-9\,B\right)c^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\text{Tan}[e+f x]}}{\sqrt{2}\,\sqrt{c}}\right]}{a\,f}+$$
$$\frac{2\left(5\,i\,A-9\,B\right)c^3\sqrt{c-i\,c\,\text{Tan}[e+f x]}}{a\,f}+\frac{\left(5\,i\,A-9\,B\right)c^2\left(c-i\,c\,\text{Tan}[e+f x]\right)^{3/2}}{3\,a\,f}+$$
$$\frac{\left(5\,i\,A-9\,B\right)c\left(c-i\,c\,\text{Tan}[e+f x]\right)^{5/2}}{10\,a\,f}+\frac{\left(i\,A-B\right)\left(c-i\,c\,\text{Tan}[e+f x]\right)^{7/2}}{2\,a\,f\left(1+i\,\text{Tan}[e+f x]\right)}$$

Result (type 1, 1 leaves):

???

Problem 765: Attempted integration timed out after 120 seconds.

$$\int\frac{\left(A+B\,\text{Tan}[e+f x]\right)\left(c-i\,c\,\text{Tan}[e+f x]\right)^{5/2}}{a+i\,a\,\text{Tan}[e+f x]}\,dx$$

Optimal (type 3, 180 leaves, 6 steps):

$$-\frac{\sqrt{2}\left(3\,i\,A-7\,B\right)c^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\text{Tan}[e+f x]}}{\sqrt{2}\,\sqrt{c}}\right]}{a\,f}+\frac{\left(3\,i\,A-7\,B\right)c^2\sqrt{c-i\,c\,\text{Tan}[e+f x]}}{a\,f}+$$
$$\frac{\left(3\,i\,A-7\,B\right)c\left(c-i\,c\,\text{Tan}[e+f x]\right)^{3/2}}{6\,a\,f}+\frac{\left(i\,A-B\right)\left(c-i\,c\,\text{Tan}[e+f x]\right)^{5/2}}{2\,a\,f\left(1+i\,\text{Tan}[e+f x]\right)}$$

Result (type 1, 1 leaves):

???

Problem 766: Attempted integration timed out after 120 seconds.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^{3/2}}{a + i a \operatorname{Tan}[e + f x]} \, dx$$

Optimal (type 3, 144 leaves, 5 steps):

$$-\frac{(i A - 5 B) c^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c - i c \operatorname{Tan}[e+f x]}}{\sqrt{2} \sqrt{c}}\right]}{\sqrt{2} a f} + \frac{(i A - 5 B) c \sqrt{c - i c \operatorname{Tan}[e + f x]}}{2 a f} + \frac{(i A - B) (c - i c \operatorname{Tan}[e + f x])^{3/2}}{2 a f (1 + i \operatorname{Tan}[e + f x])}$$

Result (type 1, 1 leaves):

???

Problem 771: Attempted integration timed out after 120 seconds.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^{9/2}}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 275 leaves, 8 steps):

$$\frac{7 (5 i A - 13 B) c^{9/2} \operatorname{ArcTanh}\left[\frac{\sqrt{c - i c \operatorname{Tan}[e+f x]}}{\sqrt{2} \sqrt{c}}\right]}{\sqrt{2} a^2 f} - \frac{7 (5 i A - 13 B) c^4 \sqrt{c - i c \operatorname{Tan}[e + f x]}}{2 a^2 f} - \frac{7 (5 i A - 13 B) c^3 (c - i c \operatorname{Tan}[e + f x])^{3/2}}{12 a^2 f} - \frac{7 (5 i A - 13 B) c^2 (c - i c \operatorname{Tan}[e + f x])^{5/2}}{40 a^2 f} - \frac{(5 i A - 13 B) c (c - i c \operatorname{Tan}[e + f x])^{7/2}}{8 a^2 f (1 + i \operatorname{Tan}[e + f x])} + \frac{(i A - B) (c - i c \operatorname{Tan}[e + f x])^{9/2}}{4 a^2 f (1 + i \operatorname{Tan}[e + f x])^2}$$

Result (type 1, 1 leaves):

???

Problem 772: Attempted integration timed out after 120 seconds.

$$\int \frac{(A + B \operatorname{Tan}[e + f x]) (c - i c \operatorname{Tan}[e + f x])^{7/2}}{(a + i a \operatorname{Tan}[e + f x])^2} \, dx$$

Optimal (type 3, 238 leaves, 7 steps):

$$\frac{5\,(3\,i\,A-11\,B)\,c^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{\sqrt{2}\,\sqrt{c}}\right]}{2\,\sqrt{2}\,a^2\,f}-\frac{5\,(3\,i\,A-11\,B)\,c^3\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{4\,a^2\,f}-\frac{5\,(3\,i\,A-11\,B)\,c^2\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}{24\,a^2\,f}-\frac{(3\,i\,A-11\,B)\,c\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{8\,a^2\,f\,(1+i\,\text{Tan}[e+f\,x])}+\frac{(i\,A-B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{7/2}}{4\,a^2\,f\,(1+i\,\text{Tan}[e+f\,x])^2}$$

Result (type 1, 1 leaves):

???

Problem 773: Attempted integration timed out after 120 seconds.

$$\int\frac{(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{(a+i\,a\,\text{Tan}[e+f\,x])^2}\,dx$$

Optimal (type 3, 199 leaves, 6 steps):

$$\frac{3\,(i\,A-9\,B)\,c^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{\sqrt{2}\,\sqrt{c}}\right]}{4\,\sqrt{2}\,a^2\,f}-\frac{3\,(i\,A-9\,B)\,c^2\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{8\,a^2\,f}-\frac{(i\,A-9\,B)\,c\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}{8\,a^2\,f\,(1+i\,\text{Tan}[e+f\,x])}+\frac{(i\,A-B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{4\,a^2\,f\,(1+i\,\text{Tan}[e+f\,x])^2}$$

Result (type 1, 1 leaves):

???

Problem 779: Attempted integration timed out after 120 seconds.

$$\int\frac{(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}{(a+i\,a\,\text{Tan}[e+f\,x])^3}\,dx$$

Optimal (type 3, 291 leaves, 8 steps):

$$-\frac{35\,(i\,A-5\,B)\,c^{9/2}\,\text{ArcTanh}\left[\frac{\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{\sqrt{2}\,\sqrt{c}}\right]}{4\,\sqrt{2}\,a^3\,f}+\frac{35\,(i\,A-5\,B)\,c^4\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{8\,a^3\,f}+\frac{35\,(i\,A-5\,B)\,c^3\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}{48\,a^3\,f}+\frac{7\,(i\,A-5\,B)\,c^2\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{16\,a^3\,f\,(1+i\,\text{Tan}[e+f\,x])}-\frac{(i\,A-5\,B)\,c\,(c-i\,c\,\text{Tan}[e+f\,x])^{7/2}}{8\,a^3\,f\,(1+i\,\text{Tan}[e+f\,x])^2}+\frac{(i\,A-B)\,(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}{6\,a^3\,f\,(1+i\,\text{Tan}[e+f\,x])^3}$$

Result (type 1, 1 leaves):

???

Problem 780: Attempted integration timed out after 120 seconds.

$$\int \frac{(A + B\,\text{Tan}[e + f\,x])\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{7/2}}{(a + \mathbb{i}\,a\,\text{Tan}[e + f\,x])^3}\,dx$$

Optimal (type 3, 252 leaves, 7 steps):

$$-\frac{5\,(\mathbb{i}\,A - 13\,B)\,c^{7/2}\,\text{ArcTanh}\left[\frac{\sqrt{c - \mathbb{i}\,c\,\text{Tan}[e+f\,x]}}{\sqrt{2}\,\sqrt{c}}\right]}{8\,\sqrt{2}\,a^3\,f} + \frac{5\,(\mathbb{i}\,A - 13\,B)\,c^3\,\sqrt{c - \mathbb{i}\,c\,\text{Tan}[e + f\,x]}}{16\,a^3\,f} + \frac{5\,(\mathbb{i}\,A - 13\,B)\,c^2\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{3/2}}{48\,a^3\,f\,(1 + \mathbb{i}\,\text{Tan}[e + f\,x])} - \frac{(\mathbb{i}\,A - 13\,B)\,c\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{5/2}}{24\,a^3\,f\,(1 + \mathbb{i}\,\text{Tan}[e + f\,x])^2} + \frac{(\mathbb{i}\,A - B)\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{7/2}}{6\,a^3\,f\,(1 + \mathbb{i}\,\text{Tan}[e + f\,x])^3}$$

Result (type 1, 1 leaves):

???

Problem 796: Result more than twice size of optimal antiderivative.

$$\int (a + \mathbb{i}\,a\,\text{Tan}[e + f\,x])^{3/2}\,(A + B\,\text{Tan}[e + f\,x])\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{5/2}\,dx$$

Optimal (type 3, 226 leaves, 7 steps):

$$-\frac{a^{3/2}\,(4\,\mathbb{i}\,A - B)\,c^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+\mathbb{i}\,a\,\text{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c-\mathbb{i}\,c\,\text{Tan}[e+f\,x]}}\right]}{4\,f} + \frac{1}{8\,f}\,a\,(4\,A + \mathbb{i}\,B)\,c^2\,\text{Tan}[e + f\,x]\,\sqrt{a + \mathbb{i}\,a\,\text{Tan}[e + f\,x]}\,\sqrt{c - \mathbb{i}\,c\,\text{Tan}[e + f\,x]} - \frac{(4\,\mathbb{i}\,A - B)\,c\,(a + \mathbb{i}\,a\,\text{Tan}[e + f\,x])^{3/2}\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{3/2}}{12\,f} + \frac{B\,(a + \mathbb{i}\,a\,\text{Tan}[e + f\,x])^{3/2}\,(c - \mathbb{i}\,c\,\text{Tan}[e + f\,x])^{5/2}}{4\,f}$$

Result (type 3, 454 leaves):

$$\left((-4\,i\,A+B)\,c^3\,e^{-i\,(2\,e+f\,x)}\,\sqrt{e^{i\,f\,x}}\,\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\right.$$
$$\left.\text{ArcTan}\left[e^{i\,(e+f\,x)}\right]\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(A+B\,\text{Tan}[e+f\,x])\right)\Big/$$
$$\left(4\,\sqrt{\frac{c}{1+e^{2\,i\,(e+f\,x)}}}\;f\,\text{Sec}[e+f\,x]^{5/2}\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^{3/2}\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\right)+$$
$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}$$
$$\text{Cos}[e+f\,x]^2\,\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}$$
$$\Big(\text{Sec}[e]\,\text{Sec}[e+f\,x]^2\,(-4\,i\,A\,\text{Cos}[e]+4\,B\,\text{Cos}[e]-3\,i\,B\,\text{Sin}[e])$$
$$\left(\frac{1}{12}\,c^2\,\text{Cos}[e]-\frac{1}{12}\,i\,c^2\,\text{Sin}[e]\right)-i\,B\,c^2\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^3\left(\frac{\text{Cos}[e]}{4}-\frac{1}{4}\,i\,\text{Sin}[e]\right)$$
$$\text{Sin}[f\,x]+\text{Sec}[e]\,\text{Sec}[e+f\,x]\left(\frac{\text{Cos}[e]}{8}-\frac{1}{8}\,i\,\text{Sin}[e]\right)\left(4\,A\,c^2\,\text{Sin}[f\,x]+i\,B\,c^2\,\text{Sin}[f\,x]\right)+$$
$$(4\,A+i\,B)\left(\frac{1}{8}\,c^2\,\text{Cos}[e]-\frac{1}{8}\,i\,c^2\,\text{Sin}[e]\right)\text{Tan}[e]\Big)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 804: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(A+B\,\text{Tan}[e+f\,x])}{(c-i\,c\,\text{Tan}[e+f\,x])^{11/2}}\,dx$$

Optimal (type 3, 261 leaves, 6 steps):

$$-\frac{(i\,A+B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{11\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{11/2}}-$$
$$\frac{(4\,i\,A-7\,B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{99\,c\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}-\frac{(4\,i\,A-7\,B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{231\,c^2\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{7/2}}-$$
$$\frac{2\,(4\,i\,A-7\,B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{1155\,c^3\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}-\frac{2\,(4\,i\,A-7\,B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}}{3465\,c^4\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}$$

Result (type 3, 569 leaves):

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}\text{Cos}[e+f\,x]^2\left((-i\,A+B)\,\text{Cos}[2\,f\,x]\left(\frac{\text{Cos}[e]}{96\,c^6}+\frac{i\,\text{Sin}[e]}{96\,c^6}\right)+(-17\,i\,A+11\,B)\,\text{Cos}[4\,f\,x]\left(\frac{\text{Cos}[3\,e]}{480\,c^6}+\frac{i\,\text{Sin}[3\,e]}{480\,c^6}\right)+(-29\,i\,A+7\,B)\,\text{Cos}[6\,f\,x]\left(\frac{\text{Cos}[5\,e]}{560\,c^6}+\frac{i\,\text{Sin}[5\,e]}{560\,c^6}\right)+(41\,A-7\,i\,B)\,\text{Cos}[8\,f\,x]\left(-\frac{i\,\text{Cos}[7\,e]}{1008\,c^6}+\frac{\text{Sin}[7\,e]}{1008\,c^6}\right)+(53\,A-31\,i\,B)\,\text{Cos}[10\,f\,x]\left(-\frac{i\,\text{Cos}[9\,e]}{3168\,c^6}+\frac{\text{Sin}[9\,e]}{3168\,c^6}\right)+(A-i\,B)\,\text{Cos}[12\,f\,x]\left(-\frac{i\,\text{Cos}[11\,e]}{352\,c^6}+\frac{\text{Sin}[11\,e]}{352\,c^6}\right)+(A+i\,B)\left(\frac{\text{Cos}[e]}{96\,c^6}+\frac{i\,\text{Sin}[e]}{96\,c^6}\right)\text{Sin}[2\,f\,x]+(17\,A+11\,i\,B)\left(\frac{\text{Cos}[3\,e]}{480\,c^6}+\frac{i\,\text{Sin}[3\,e]}{480\,c^6}\right)\text{Sin}[4\,f\,x]+(29\,A+7\,i\,B)\left(\frac{\text{Cos}[5\,e]}{560\,c^6}+\frac{i\,\text{Sin}[5\,e]}{560\,c^6}\right)\text{Sin}[6\,f\,x]+(41\,A-7\,i\,B)\left(\frac{\text{Cos}[7\,e]}{1008\,c^6}+\frac{i\,\text{Sin}[7\,e]}{1008\,c^6}\right)\text{Sin}[8\,f\,x]+(53\,A-31\,i\,B)\left(\frac{\text{Cos}[9\,e]}{3168\,c^6}+\frac{i\,\text{Sin}[9\,e]}{3168\,c^6}\right)\text{Sin}[10\,f\,x]+(A-i\,B)\left(\frac{\text{Cos}[11\,e]}{352\,c^6}+\frac{i\,\text{Sin}[11\,e]}{352\,c^6}\right)\text{Sin}[12\,f\,x]\right)\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 806: Result more than twice size of optimal antiderivative.

$$\int(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\,(A+B\,\text{Tan}[e+f\,x])\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}\,dx$$

Optimal (type 3, 213 leaves, 7 steps):

$$-\frac{3\,i\,a^{5/2}\,A\,c^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}\right]}{4\,f}+\frac{3\,a^2\,A\,c^2\,\text{Tan}[e+f\,x]\,\sqrt{a+i\,a\,\text{Tan}[e+f\,x]}\,\sqrt{c-i\,c\,\text{Tan}[e+f\,x]}}{8\,f}+\frac{a\,A\,c\,\text{Tan}[e+f\,x]\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\,(c-i\,c\,\text{Tan}[e+f\,x])^{3/2}}{4\,f}+\frac{B\,(a+i\,a\,\text{Tan}[e+f\,x])^{5/2}\,(c-i\,c\,\text{Tan}[e+f\,x])^{5/2}}{5\,f}$$

Result (type 3, 459 leaves):

$$-\left(\left(3\,\mathrm{i}\,A\,c^3\,e^{-\mathrm{i}\,(3\,e+f\,x)}\,\sqrt{e^{\mathrm{i}\,f\,x}}\,\sqrt{\frac{e^{\mathrm{i}\,(e+f\,x)}}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,\mathrm{ArcTan}\left[e^{\mathrm{i}\,(e+f\,x)}\right]\right.\right.$$

$$\left.(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,(A+B\,\mathrm{Tan}[e+f\,x])\right)\Big/\left(4\,\sqrt{\frac{c}{1+e^{2\,\mathrm{i}\,(e+f\,x)}}}\,f\right.$$

$$\left.\left.\mathrm{Sec}[e+f\,x]^{7/2}\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^{5/2}\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])\right)\right)+$$

$$\frac{1}{f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])}$$

$$\mathrm{Cos}[e+f\,x]^3\,\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]-\mathrm{i}\,c\,\mathrm{Sin}[e+f\,x])}$$

$$\left(\mathrm{Sec}[e+f\,x]^4\left(\frac{1}{5}\,B\,c^2\,\mathrm{Cos}[2\,e]-\frac{1}{5}\,\mathrm{i}\,B\,c^2\,\mathrm{Sin}[2\,e]\right)+\right.$$

$$A\,c^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]^3\left(\frac{1}{4}\,\mathrm{Cos}[2\,e]-\frac{1}{4}\,\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\mathrm{Sin}[f\,x]+$$

$$A\,c^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f\,x]\left(\frac{3}{8}\,\mathrm{Cos}[2\,e]-\frac{3}{8}\,\mathrm{i}\,\mathrm{Sin}[2\,e]\right)\mathrm{Sin}[f\,x]+$$

$$\mathrm{Sec}[e+f\,x]^2\left(\frac{1}{4}\,A\,c^2\,\mathrm{Cos}[2\,e]-\frac{1}{4}\,\mathrm{i}\,A\,c^2\,\mathrm{Sin}[2\,e]\right)\mathrm{Tan}[e]+$$

$$\left.\left(\frac{3}{8}\,A\,c^2\,\mathrm{Cos}[2\,e]-\frac{3}{8}\,\mathrm{i}\,A\,c^2\,\mathrm{Sin}[2\,e]\right)\mathrm{Tan}[e]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,(A+B\,\mathrm{Tan}[e+f\,x])$$

Problem 807: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,(A+B\,\mathrm{Tan}[e+f\,x])\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}\,dx$$

Optimal (type 3, 222 leaves, 7 steps):

$$-\frac{a^{5/2}\,(4\,\mathrm{i}\,A+B)\,c^{3/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}}\right]}{4\,f}+\frac{1}{8\,f}$$

$$a^2\,(4\,A-\mathrm{i}\,B)\,c\,\mathrm{Tan}[e+f\,x]\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}+$$

$$\frac{a\,(4\,\mathrm{i}\,A+B)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{3/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}{12\,f}+$$

$$\frac{B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}{4\,f}$$

Result (type 3, 460 leaves):

$$-\left(\left(\left(i\,(4A-iB)\,c^2\,e^{-i\,(3e+fx)}\,\sqrt{e^{i\,fx}}\,\sqrt{\frac{e^{i\,(e+fx)}}{1+e^{2\,i\,(e+fx)}}}\,\text{ArcTan}\left[e^{i\,(e+fx)}\right]\right.\right.\right.$$
$$\left.(a+i\,a\,\text{Tan}[e+fx])^{5/2}\,(A+B\,\text{Tan}[e+fx])\right)\Big/\left(4\,\sqrt{\frac{c}{1+e^{2\,i\,(e+fx)}}}\,f\right.$$
$$\left.\left.\text{Sec}[e+fx]^{7/2}\,(\text{Cos}[fx]+i\,\text{Sin}[fx])^{5/2}\,(A\,\text{Cos}[e+fx]+B\,\text{Sin}[e+fx])\right)\right)+$$
$$\frac{1}{f\,(\text{Cos}[fx]+i\,\text{Sin}[fx])^2\,(A\,\text{Cos}[e+fx]+B\,\text{Sin}[e+fx])}$$
$$\text{Cos}[e+fx]^3\,\sqrt{\text{Sec}[e+fx]}\,(c\,\text{Cos}[e+fx]-i\,c\,\text{Sin}[e+fx])$$
$$\left(\text{Sec}[e]\,\text{Sec}[e+fx]^2\,(4\,i\,A\,\text{Cos}[e]+4\,B\,\text{Cos}[e]+3\,i\,B\,\text{Sin}[e])\right.$$
$$\left(\frac{1}{12}\,c\,\text{Cos}[2e]-\frac{1}{12}\,i\,c\,\text{Sin}[2e]\right)+i\,B\,c\,\text{Sec}[e]\,\text{Sec}[e+fx]^3\,\left(\frac{1}{4}\,\text{Cos}[2e]-\frac{1}{4}\,i\,\text{Sin}[2e]\right)$$
$$\text{Sin}[fx]+\text{Sec}[e]\,\text{Sec}[e+fx]\,\left(\frac{1}{8}\,\text{Cos}[2e]-\frac{1}{8}\,i\,\text{Sin}[2e]\right)\,(4\,A\,c\,\text{Sin}[fx]-i\,B\,c\,\text{Sin}[fx])+$$
$$\left.(4A-iB)\,\left(\frac{1}{8}\,c\,\text{Cos}[2e]-\frac{1}{8}\,i\,c\,\text{Sin}[2e]\right)\,\text{Tan}[e]\right)\,(a+i\,a\,\text{Tan}[e+fx])^{5/2}\,(A+B\,\text{Tan}[e+fx])$$

Problem 813: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+fx])^{5/2}\,(A+B\,\text{Tan}[e+fx])}{(c-i\,c\,\text{Tan}[e+fx])^{9/2}}\,dx$$

Optimal (type 3, 155 leaves, 4 steps):

$$-\frac{(i\,A+B)\,(a+i\,a\,\text{Tan}[e+fx])^{5/2}}{9\,f\,(c-i\,c\,\text{Tan}[e+fx])^{9/2}}-$$
$$\frac{(2\,i\,A-7B)\,(a+i\,a\,\text{Tan}[e+fx])^{5/2}}{63\,c\,f\,(c-i\,c\,\text{Tan}[e+fx])^{7/2}}-\frac{(2\,i\,A-7B)\,(a+i\,a\,\text{Tan}[e+fx])^{5/2}}{315\,c^2\,f\,(c-i\,c\,\text{Tan}[e+fx])^{5/2}}$$

Result (type 3, 417 leaves):

$$\frac{1}{f\left(\text{Cos}[f x]+i \text{Sin}[f x]\right)^2 \left(A \text{Cos}[e+f x]+B \text{Sin}[e+f x]\right)}$$
$$\text{Cos}[e+f x]^3 \left(\left(-i A+B\right) \text{Cos}[4 f x] \left(\frac{\text{Cos}[2 e]}{40 c^5}+\frac{i \text{Sin}[2 e]}{40 c^5}\right)+\left(-17 i A+7 B\right) \text{Cos}[6 f x]\right.$$
$$\left(\frac{\text{Cos}[4 e]}{280 c^5}+\frac{i \text{Sin}[4 e]}{280 c^5}\right)+\left(25 A-7 i B\right) \text{Cos}[8 f x] \left(-\frac{i \text{Cos}[6 e]}{504 c^5}+\frac{\text{Sin}[6 e]}{504 c^5}\right)+$$
$$\left(A-i B\right) \text{Cos}[10 f x] \left(-\frac{i \text{Cos}[8 e]}{72 c^5}+\frac{\text{Sin}[8 e]}{72 c^5}\right)+\left(A+i B\right) \left(\frac{\text{Cos}[2 e]}{40 c^5}+\frac{i \text{Sin}[2 e]}{40 c^5}\right) \text{Sin}[4 f x]+$$
$$\left(17 A+7 i B\right) \left(\frac{\text{Cos}[4 e]}{280 c^5}+\frac{i \text{Sin}[4 e]}{280 c^5}\right) \text{Sin}[6 f x]+\left(25 A-7 i B\right)$$
$$\left.\left(\frac{\text{Cos}[6 e]}{504 c^5}+\frac{i \text{Sin}[6 e]}{504 c^5}\right) \text{Sin}[8 f x]+\left(A-i B\right) \left(\frac{\text{Cos}[8 e]}{72 c^5}+\frac{i \text{Sin}[8 e]}{72 c^5}\right) \text{Sin}[10 f x]\right)$$
$$\sqrt{\text{Sec}[e+f x] \left(c \text{Cos}[e+f x]-i c \text{Sin}[e+f x]\right)} \left(a+i a \text{Tan}[e+f x]\right)^{5/2} \left(A+B \text{Tan}[e+f x]\right)$$

Problem 814: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+i a \text{Tan}[e+f x]\right)^{5/2} \left(A+B \text{Tan}[e+f x]\right)}{\left(c-i c \text{Tan}[e+f x]\right)^{11/2}} \, dx$$

Optimal (type 3, 208 leaves, 5 steps):

$$-\frac{\left(i A+B\right) \left(a+i a \text{Tan}[e+f x]\right)^{5/2}}{11 f \left(c-i c \text{Tan}[e+f x]\right)^{11/2}}-\frac{\left(3 i A-8 B\right) \left(a+i a \text{Tan}[e+f x]\right)^{5/2}}{99 c f \left(c-i c \text{Tan}[e+f x]\right)^{9/2}}-$$
$$\frac{2 \left(3 i A-8 B\right) \left(a+i a \text{Tan}[e+f x]\right)^{5/2}}{693 c^2 f \left(c-i c \text{Tan}[e+f x]\right)^{7/2}}-\frac{2 \left(3 i A-8 B\right) \left(a+i a \text{Tan}[e+f x]\right)^{5/2}}{3465 c^3 f \left(c-i c \text{Tan}[e+f x]\right)^{5/2}}$$

Result (type 3, 495 leaves):

$$\frac{1}{f\left(\text{Cos}[f x]+i\,\text{Sin}[f x]\right)^2\left(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x]\right)}\text{Cos}[e+f x]^3\left(\left(-i A+B\right)\text{Cos}[4 f x]\left(\frac{\text{Cos}[2 e]}{80 c^6}+\frac{i\,\text{Sin}[2 e]}{80 c^6}\right)+\left(-11 i A+6 B\right)\text{Cos}[6 f x]\left(\frac{\text{Cos}[4 e]}{280 c^6}+\frac{i\,\text{Sin}[4 e]}{280 c^6}\right)+\left(-24 i A+B\right)\text{Cos}[8 f x]\left(\frac{\text{Cos}[6 e]}{504 c^6}+\frac{i\,\text{Sin}[6 e]}{504 c^6}\right)+\left(21 A-10 i B\right)\text{Cos}[10 f x]\left(-\frac{i\,\text{Cos}[8 e]}{792 c^6}+\frac{\text{Sin}[8 e]}{792 c^6}\right)+\left(A-i B\right)\text{Cos}[12 f x]\left(-\frac{i\,\text{Cos}[10 e]}{176 c^6}+\frac{\text{Sin}[10 e]}{176 c^6}\right)+\left(A+i B\right)\left(\frac{\text{Cos}[2 e]}{80 c^6}+\frac{i\,\text{Sin}[2 e]}{80 c^6}\right)\text{Sin}[4 f x]+\left(11 A+6 i B\right)\left(\frac{\text{Cos}[4 e]}{280 c^6}+\frac{i\,\text{Sin}[4 e]}{280 c^6}\right)\text{Sin}[6 f x]+\left(24 A+i B\right)\left(\frac{\text{Cos}[6 e]}{504 c^6}+\frac{i\,\text{Sin}[6 e]}{504 c^6}\right)\text{Sin}[8 f x]+\left(21 A-10 i B\right)\left(\frac{\text{Cos}[8 e]}{792 c^6}+\frac{i\,\text{Sin}[8 e]}{792 c^6}\right)\text{Sin}[10 f x]+\left(A-i B\right)\left(\frac{\text{Cos}[10 e]}{176 c^6}+\frac{i\,\text{Sin}[10 e]}{176 c^6}\right)\text{Sin}[12 f x]\right)\sqrt{\text{Sec}[e+f x]\left(c\,\text{Cos}[e+f x]-i c\,\text{Sin}[e+f x]\right)}\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}\left(A+B\,\text{Tan}[e+f x]\right)$$

Problem 815: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}\left(A+B\,\text{Tan}[e+f x]\right)}{\left(c-i c\,\text{Tan}[e+f x]\right)^{13/2}}\,dx$$

Optimal (type 3, 261 leaves, 6 steps):

$$-\frac{\left(i A+B\right)\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{13 f\left(c-i c\,\text{Tan}[e+f x]\right)^{13/2}}-\frac{\left(4 i A-9 B\right)\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{143 c f\left(c-i c\,\text{Tan}[e+f x]\right)^{11/2}}-\frac{\left(4 i A-9 B\right)\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{429 c^2 f\left(c-i c\,\text{Tan}[e+f x]\right)^{9/2}}-\frac{2\left(4 i A-9 B\right)\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{3003 c^3 f\left(c-i c\,\text{Tan}[e+f x]\right)^{7/2}}-\frac{2\left(4 i A-9 B\right)\left(a+i a\,\text{Tan}[e+f x]\right)^{5/2}}{15015 c^4 f\left(c-i c\,\text{Tan}[e+f x]\right)^{5/2}}$$

Result (type 3, 577 leaves):

$$\frac{1}{f\,(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x])^2\,(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x])}$$
$$\mathrm{Cos}[e+f\,x]^3\,\Bigg((-\mathrm{i}\,A+B)\,\mathrm{Cos}[4\,f\,x]\left(\frac{\mathrm{Cos}[2\,e]}{160\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[2\,e]}{160\,c^7}\right)+$$
$$(-27\,\mathrm{i}\,A+17\,B)\,\mathrm{Cos}[6\,f\,x]\left(\frac{\mathrm{Cos}[4\,e]}{1120\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[4\,e]}{1120\,c^7}\right)+(-13\,\mathrm{i}\,A+3\,B)\,\mathrm{Cos}[8\,f\,x]$$
$$\left(\frac{\mathrm{Cos}[6\,e]}{336\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[6\,e]}{336\,c^7}\right)+(17\,A-3\,\mathrm{i}\,B)\,\mathrm{Cos}[10\,f\,x]\left(-\frac{\mathrm{i}\,\mathrm{Cos}[8\,e]}{528\,c^7}+\frac{\mathrm{Sin}[8\,e]}{528\,c^7}\right)+$$
$$(63\,A-37\,\mathrm{i}\,B)\,\mathrm{Cos}[12\,f\,x]\left(-\frac{\mathrm{i}\,\mathrm{Cos}[10\,e]}{4576\,c^7}+\frac{\mathrm{Sin}[10\,e]}{4576\,c^7}\right)+(A-\mathrm{i}\,B)\,\mathrm{Cos}[14\,f\,x]$$
$$\left(-\frac{\mathrm{i}\,\mathrm{Cos}[12\,e]}{416\,c^7}+\frac{\mathrm{Sin}[12\,e]}{416\,c^7}\right)+(A+\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[2\,e]}{160\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[2\,e]}{160\,c^7}\right)\mathrm{Sin}[4\,f\,x]+$$
$$(27\,A+17\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[4\,e]}{1120\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[4\,e]}{1120\,c^7}\right)\mathrm{Sin}[6\,f\,x]+(13\,A+3\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[6\,e]}{336\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[6\,e]}{336\,c^7}\right)$$
$$\mathrm{Sin}[8\,f\,x]+(17\,A-3\,\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[8\,e]}{528\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[8\,e]}{528\,c^7}\right)\mathrm{Sin}[10\,f\,x]+(63\,A-37\,\mathrm{i}\,B)$$
$$\left(\frac{\mathrm{Cos}[10\,e]}{4576\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[10\,e]}{4576\,c^7}\right)\mathrm{Sin}[12\,f\,x]+(A-\mathrm{i}\,B)\left(\frac{\mathrm{Cos}[12\,e]}{416\,c^7}+\frac{\mathrm{i}\,\mathrm{Sin}[12\,e]}{416\,c^7}\right)\mathrm{Sin}[14\,f\,x]\Bigg)$$
$$\sqrt{\mathrm{Sec}[e+f\,x]\,(c\,\mathrm{Cos}[e+f\,x]-\mathrm{i}\,c\,\mathrm{Sin}[e+f\,x])}\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}$$
$$(A+B\,\mathrm{Tan}[e+f\,x])$$

Problem 817: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{7/2}\,(A+B\,\mathrm{Tan}[e+f\,x])\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{7/2}\,dx$$

Optimal (type 3, 267 leaves, 8 steps):

$$-\frac{5\,\mathrm{i}\,a^{7/2}\,A\,c^{7/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}}{\sqrt{a}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}}\right]}{8\,f}+$$
$$\frac{5\,a^3\,A\,c^3\,\mathrm{Tan}[e+f\,x]\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]}}{16\,f}+$$
$$\frac{5\,a^2\,A\,c^2\,\mathrm{Tan}[e+f\,x]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{3/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{3/2}}{24\,f}+$$
$$\frac{a\,A\,c\,\mathrm{Tan}[e+f\,x]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{5/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{5/2}}{6\,f}+$$
$$\frac{B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x])^{7/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x])^{7/2}}{7\,f}$$

Result (type 3, 535 leaves):

$$-\left(\left(5\,\mathrm{i}\,A\,c^4\,e^{-\mathrm{i}\,(4e+f x)}\,\sqrt{e^{\mathrm{i}\,f x}}\,\sqrt{\frac{e^{\mathrm{i}\,(e+f x)}}{1+e^{2\,\mathrm{i}\,(e+f x)}}}\,\mathrm{ArcTan}\left[e^{\mathrm{i}\,(e+f x)}\right]\right.\right.$$
$$\left.(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{7/2}\,(A+B\,\mathrm{Tan}[e+f x])\right)\Big/\left(8\,\sqrt{\frac{c}{1+e^{2\,\mathrm{i}\,(e+f x)}}}\,f\right.$$
$$\left.\left.\mathrm{Sec}[e+f x]^{9/2}\,(\mathrm{Cos}[f x]+\mathrm{i}\,\mathrm{Sin}[f x])^{7/2}\,(A\,\mathrm{Cos}[e+f x]+B\,\mathrm{Sin}[e+f x])\right)\right)+$$
$$\frac{1}{f\,(\mathrm{Cos}[f x]+\mathrm{i}\,\mathrm{Sin}[f x])^3\,(A\,\mathrm{Cos}[e+f x]+B\,\mathrm{Sin}[e+f x])}$$
$$\mathrm{Cos}[e+f x]^4\,\sqrt{\mathrm{Sec}[e+f x]\,(c\,\mathrm{Cos}[e+f x]-\mathrm{i}\,c\,\mathrm{Sin}[e+f x])}$$
$$\left(\mathrm{Sec}[e+f x]^6\left(\frac{1}{7}\,B\,c^3\,\mathrm{Cos}[3e]-\frac{1}{7}\,\mathrm{i}\,B\,c^3\,\mathrm{Sin}[3e]\right)+\right.$$
$$A\,c^3\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f x]^5\left(\frac{1}{6}\,\mathrm{Cos}[3e]-\frac{1}{6}\,\mathrm{i}\,\mathrm{Sin}[3e]\right)\mathrm{Sin}[f x]+$$
$$A\,c^3\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f x]^3\left(\frac{5}{24}\,\mathrm{Cos}[3e]-\frac{5}{24}\,\mathrm{i}\,\mathrm{Sin}[3e]\right)\mathrm{Sin}[f x]+$$
$$A\,c^3\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+f x]\left(\frac{5}{16}\,\mathrm{Cos}[3e]-\frac{5}{16}\,\mathrm{i}\,\mathrm{Sin}[3e]\right)\mathrm{Sin}[f x]+$$
$$\mathrm{Sec}[e+f x]^4\left(\frac{1}{6}\,A\,c^3\,\mathrm{Cos}[3e]-\frac{1}{6}\,\mathrm{i}\,A\,c^3\,\mathrm{Sin}[3e]\right)\mathrm{Tan}[e]+$$
$$\mathrm{Sec}[e+f x]^2\left(\frac{5}{24}\,A\,c^3\,\mathrm{Cos}[3e]-\frac{5}{24}\,\mathrm{i}\,A\,c^3\,\mathrm{Sin}[3e]\right)\mathrm{Tan}[e]+$$
$$\left.\left(\frac{5}{16}\,A\,c^3\,\mathrm{Cos}[3e]-\frac{5}{16}\,\mathrm{i}\,A\,c^3\,\mathrm{Sin}[3e]\right)\mathrm{Tan}[e]\right)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{7/2}\,(A+B\,\mathrm{Tan}[e+f x])$$

Problem 818: Result more than twice size of optimal antiderivative.

$$\int(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{7/2}\,(A+B\,\mathrm{Tan}[e+f x])\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x])^{5/2}\,dx$$

Optimal (type 3, 284 leaves, 8 steps):

$$-\frac{a^{7/2}\,(6\,\mathrm{i}\,A+B)\,c^{5/2}\,\mathrm{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}}{\sqrt{a}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x]}}\right]}{8\,f}+\frac{1}{16\,f}$$
$$a^3\,(6\,A-\mathrm{i}\,B)\,c^2\,\mathrm{Tan}[e+f x]\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x]}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x]}+\frac{1}{24\,f}$$
$$a^2\,(6\,A-\mathrm{i}\,B)\,c\,\mathrm{Tan}[e+f x]\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{3/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x])^{3/2}+$$
$$\frac{a\,(6\,\mathrm{i}\,A+B)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{5/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x])^{5/2}}{30\,f}+$$
$$\frac{B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f x])^{7/2}\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f x])^{5/2}}{6\,f}$$

Result (type 3, 572 leaves):

$$-\left(\left(\left(\mathrm{i}\,(6A-\mathrm{i}\,B)\,c^3\,e^{-\mathrm{i}\,(4e+fx)}\,\sqrt{e^{\mathrm{i}\,fx}}\,\sqrt{\frac{e^{\mathrm{i}\,(e+fx)}}{1+e^{2\,\mathrm{i}\,(e+fx)}}}\,\mathrm{ArcTan}\left[e^{\mathrm{i}\,(e+fx)}\right]\right.\right.\right.$$
$$\left.(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{7/2}\,(A+B\,\mathrm{Tan}[e+fx])\right)\bigg/\left(8\,\sqrt{\frac{c}{1+e^{2\,\mathrm{i}\,(e+fx)}}}\,f\right.$$
$$\left.\left.\mathrm{Sec}[e+fx]^{9/2}\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^{7/2}\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])\right)\right)+$$
$$\frac{1}{f\,(\mathrm{Cos}[fx]+\mathrm{i}\,\mathrm{Sin}[fx])^3\,(A\,\mathrm{Cos}[e+fx]+B\,\mathrm{Sin}[e+fx])}$$
$$\mathrm{Cos}[e+fx]^4\,\sqrt{\mathrm{Sec}[e+fx]\,(c\,\mathrm{Cos}[e+fx]-\mathrm{i}\,c\,\mathrm{Sin}[e+fx])}\,\left(\mathrm{Sec}[e]\,\mathrm{Sec}[e+fx]^4\right.$$
$$(6\,\mathrm{i}\,A\,\mathrm{Cos}[e]+6\,B\,\mathrm{Cos}[e]+5\,\mathrm{i}\,B\,\mathrm{Sin}[e])\left(\frac{1}{30}c^2\,\mathrm{Cos}[3e]-\frac{1}{30}\mathrm{i}\,c^2\,\mathrm{Sin}[3e]\right)+$$
$$\mathrm{i}\,B\,c^2\,\mathrm{Sec}[e]\,\mathrm{Sec}[e+fx]^5\left(\frac{1}{6}\mathrm{Cos}[3e]-\frac{1}{6}\mathrm{i}\,\mathrm{Sin}[3e]\right)\mathrm{Sin}[fx]+$$
$$\mathrm{Sec}[e]\,\mathrm{Sec}[e+fx]^3\left(\frac{1}{24}\mathrm{Cos}[3e]-\frac{1}{24}\mathrm{i}\,\mathrm{Sin}[3e]\right)\left(6\,A\,c^2\,\mathrm{Sin}[fx]-\mathrm{i}\,B\,c^2\,\mathrm{Sin}[fx]\right)+$$
$$\mathrm{Sec}[e]\,\mathrm{Sec}[e+fx]\left(\frac{1}{16}\mathrm{Cos}[3e]-\frac{1}{16}\mathrm{i}\,\mathrm{Sin}[3e]\right)\left(6\,A\,c^2\,\mathrm{Sin}[fx]-\mathrm{i}\,B\,c^2\,\mathrm{Sin}[fx]\right)+$$
$$(6A-\mathrm{i}\,B)\,\mathrm{Sec}[e+fx]^2\left(\frac{1}{24}c^2\,\mathrm{Cos}[3e]-\frac{1}{24}\mathrm{i}\,c^2\,\mathrm{Sin}[3e]\right)\mathrm{Tan}[e]+$$
$$\left.(6A-\mathrm{i}\,B)\left(\frac{1}{16}c^2\,\mathrm{Cos}[3e]-\frac{1}{16}\mathrm{i}\,c^2\,\mathrm{Sin}[3e]\right)\mathrm{Tan}[e]\right)$$
$$(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{7/2}\,(A+B\,\mathrm{Tan}[e+fx])$$

Problem 824: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{7/2}\,(A+B\,\mathrm{Tan}[e+fx])}{(c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx])^{7/2}}\,dx$$

Optimal (type 3, 251 leaves, 8 steps):

$$-\frac{2\,a^{7/2}\,B\,\mathrm{ArcTan}\left[\frac{\sqrt{c}\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx]}}{\sqrt{a}\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx]}}\right]}{c^{7/2}\,f}-\frac{(\mathrm{i}\,A+B)\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{7/2}}{7\,f\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx])^{7/2}}+$$
$$\frac{2\,a\,B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{5/2}}{5\,c\,f\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx])^{5/2}}-\frac{2\,a^2\,B\,(a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx])^{3/2}}{3\,c^2\,f\,(c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx])^{3/2}}+\frac{2\,a^3\,B\,\sqrt{a+\mathrm{i}\,a\,\mathrm{Tan}[e+fx]}}{c^3\,f\,\sqrt{c-\mathrm{i}\,c\,\mathrm{Tan}[e+fx]}}$$

Result (type 3, 570 leaves):

$$-\left(\left(\left(2\,B\,e^{-i\,(4\,e+f\,x)}\,\sqrt{e^{i\,f\,x}}\,\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\,\text{ArcTan}\left[e^{i\,(e+f\,x)}\right]\right.\right.\right.$$

$$\left.(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}\,(A+B\,\text{Tan}[e+f\,x])\right)\Big/\left(c^3\,\sqrt{\frac{c}{1+e^{2\,i\,(e+f\,x)}}}\,f\right.$$

$$\left.\left.\text{Sec}[e+f\,x]^{9/2}\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^{7/2}\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\right)\right)+$$

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}\,\text{Cos}[e+f\,x]^4$$

$$\left(\frac{B\,\text{Cos}[3\,e]}{c^4}+\text{Cos}[4\,f\,x]\left(-\frac{2\,B\,\text{Cos}[e]}{15\,c^4}-\frac{2\,i\,B\,\text{Sin}[e]}{15\,c^4}\right)+\text{Cos}[2\,f\,x]\left(\frac{2\,B\,\text{Cos}[e]}{3\,c^4}-\frac{2\,i\,B\,\text{Sin}[e]}{3\,c^4}\right)-\right.$$

$$\frac{i\,B\,\text{Sin}[3\,e]}{c^4}+(-5\,i\,A+9\,B)\,\text{Cos}[6\,f\,x]\left(\frac{\text{Cos}[3\,e]}{70\,c^4}+\frac{i\,\text{Sin}[3\,e]}{70\,c^4}\right)+$$

$$(A-i\,B)\,\text{Cos}[8\,f\,x]\left(-\frac{i\,\text{Cos}[5\,e]}{14\,c^4}+\frac{\text{Sin}[5\,e]}{14\,c^4}\right)+\left(\frac{2\,i\,B\,\text{Cos}[e]}{3\,c^4}+\frac{2\,B\,\text{Sin}[e]}{3\,c^4}\right)\text{Sin}[2\,f\,x]+$$

$$\left(-\frac{2\,i\,B\,\text{Cos}[e]}{15\,c^4}+\frac{2\,B\,\text{Sin}[e]}{15\,c^4}\right)\text{Sin}[4\,f\,x]+(5\,A+9\,i\,B)\left(\frac{\text{Cos}[3\,e]}{70\,c^4}+\frac{i\,\text{Sin}[3\,e]}{70\,c^4}\right)\text{Sin}[6\,f\,x]+$$

$$\left.(A-i\,B)\left(\frac{\text{Cos}[5\,e]}{14\,c^4}+\frac{i\,\text{Sin}[5\,e]}{14\,c^4}\right)\text{Sin}[8\,f\,x]\right)$$

$$\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 825: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}\,(A+B\,\text{Tan}[e+f\,x])}{(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}\,dx$$

Optimal (type 3, 102 leaves, 3 steps):

$$-\frac{(i\,A+B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}}{9\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{9/2}}-\frac{(i\,A-8\,B)\,(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}}{63\,c\,f\,(c-i\,c\,\text{Tan}[e+f\,x])^{7/2}}$$

Result (type 3, 335 leaves):

$$\frac{1}{f\,(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^3\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])}\,\text{Cos}[e+f\,x]^4$$

$$\left((-i\,A+B)\,\text{Cos}[6\,f\,x]\left(\frac{\text{Cos}[3\,e]}{28\,c^5}+\frac{i\,\text{Sin}[3\,e]}{28\,c^5}\right)+(-8\,i\,A+B)\,\text{Cos}[8\,f\,x]\left(\frac{\text{Cos}[5\,e]}{126\,c^5}+\frac{i\,\text{Sin}[5\,e]}{126\,c^5}\right)+\right.$$

$$(A-i\,B)\,\text{Cos}[10\,f\,x]\left(-\frac{i\,\text{Cos}[7\,e]}{36\,c^5}+\frac{\text{Sin}[7\,e]}{36\,c^5}\right)+(A+i\,B)\left(\frac{\text{Cos}[3\,e]}{28\,c^5}+\frac{i\,\text{Sin}[3\,e]}{28\,c^5}\right)\text{Sin}[6\,f\,x]+$$

$$\left.(8\,A+i\,B)\left(\frac{\text{Cos}[5\,e]}{126\,c^5}+\frac{i\,\text{Sin}[5\,e]}{126\,c^5}\right)\text{Sin}[8\,f\,x]+(A-i\,B)\left(\frac{\text{Cos}[7\,e]}{36\,c^5}+\frac{i\,\text{Sin}[7\,e]}{36\,c^5}\right)\text{Sin}[10\,f\,x]\right)$$

$$\sqrt{\text{Sec}[e+f\,x]\,(c\,\text{Cos}[e+f\,x]-i\,c\,\text{Sin}[e+f\,x])}\,(a+i\,a\,\text{Tan}[e+f\,x])^{7/2}\,(A+B\,\text{Tan}[e+f\,x])$$

Problem 826: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \operatorname{Tan}[e+f x])^{7/2} (A+B \operatorname{Tan}[e+f x])}{(c-i c \operatorname{Tan}[e+f x])^{11/2}} \, dx$$

Optimal (type 3, 155 leaves, 4 steps):

$$-\frac{(i A+B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{11 f (c-i c \operatorname{Tan}[e+f x])^{11/2}}-\frac{(2 i A-9 B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{99 c f (c-i c \operatorname{Tan}[e+f x])^{9/2}}-\frac{(2 i A-9 B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{693 c^2 f (c-i c \operatorname{Tan}[e+f x])^{7/2}}$$

Result (type 3, 417 leaves):

$$\frac{1}{f (\operatorname{Cos}[f x]+i \operatorname{Sin}[f x])^3 (A \operatorname{Cos}[e+f x]+B \operatorname{Sin}[e+f x])}$$
$$\operatorname{Cos}[e+f x]^4 \left((-i A+B) \operatorname{Cos}[6 f x] \left(\frac{\operatorname{Cos}[3 e]}{56 c^6}+\frac{i \operatorname{Sin}[3 e]}{56 c^6}\right)+(-23 i A+9 B) \operatorname{Cos}[8 f x]\right.$$
$$\left(\frac{\operatorname{Cos}[5 e]}{504 c^6}+\frac{i \operatorname{Sin}[5 e]}{504 c^6}\right)+(31 A-9 i B) \operatorname{Cos}[10 f x] \left(-\frac{i \operatorname{Cos}[7 e]}{792 c^6}+\frac{\operatorname{Sin}[7 e]}{792 c^6}\right)+$$
$$(A-i B) \operatorname{Cos}[12 f x] \left(-\frac{i \operatorname{Cos}[9 e]}{88 c^6}+\frac{\operatorname{Sin}[9 e]}{88 c^6}\right)+(A+i B) \left(\frac{\operatorname{Cos}[3 e]}{56 c^6}+\frac{i \operatorname{Sin}[3 e]}{56 c^6}\right) \operatorname{Sin}[6 f x]+$$
$$(23 A+9 i B) \left(\frac{\operatorname{Cos}[5 e]}{504 c^6}+\frac{i \operatorname{Sin}[5 e]}{504 c^6}\right) \operatorname{Sin}[8 f x]+(31 A-9 i B)$$
$$\left.\left(\frac{\operatorname{Cos}[7 e]}{792 c^6}+\frac{i \operatorname{Sin}[7 e]}{792 c^6}\right) \operatorname{Sin}[10 f x]+(A-i B) \left(\frac{\operatorname{Cos}[9 e]}{88 c^6}+\frac{i \operatorname{Sin}[9 e]}{88 c^6}\right) \operatorname{Sin}[12 f x]\right)$$
$$\sqrt{\operatorname{Sec}[e+f x] (c \operatorname{Cos}[e+f x]-i c \operatorname{Sin}[e+f x])} (a+i a \operatorname{Tan}[e+f x])^{7/2} (A+B \operatorname{Tan}[e+f x])$$

Problem 827: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+i a \operatorname{Tan}[e+f x])^{7/2} (A+B \operatorname{Tan}[e+f x])}{(c-i c \operatorname{Tan}[e+f x])^{13/2}} \, dx$$

Optimal (type 3, 208 leaves, 5 steps):

$$-\frac{(i A+B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{13 f (c-i c \operatorname{Tan}[e+f x])^{13/2}}-\frac{(3 i A-10 B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{143 c f (c-i c \operatorname{Tan}[e+f x])^{11/2}}-\frac{2 (3 i A-10 B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{1287 c^2 f (c-i c \operatorname{Tan}[e+f x])^{9/2}}-\frac{2 (3 i A-10 B) (a+i a \operatorname{Tan}[e+f x])^{7/2}}{9009 c^3 f (c-i c \operatorname{Tan}[e+f x])^{7/2}}$$

Result (type 3, 495 leaves):

$$\frac{1}{f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])}\text{Cos}[e+f x]^4\left((-i A+B)\,\text{Cos}[6 f x]\left(\frac{\text{Cos}[3 e]}{112 c^7}+\frac{i\,\text{Sin}[3 e]}{112 c^7}\right)+\right.$$
$$(-15 i A+8 B)\,\text{Cos}[8 f x]\left(\frac{\text{Cos}[5 e]}{504 c^7}+\frac{i\,\text{Sin}[5 e]}{504 c^7}\right)+(-30 i A+B)\,\text{Cos}[10 f x]$$
$$\left(\frac{\text{Cos}[7 e]}{792 c^7}+\frac{i\,\text{Sin}[7 e]}{792 c^7}\right)+(25 A-12 i B)\,\text{Cos}[12 f x]\left(-\frac{i\,\text{Cos}[9 e]}{1144 c^7}+\frac{\text{Sin}[9 e]}{1144 c^7}\right)+$$
$$(A-i B)\,\text{Cos}[14 f x]\left(-\frac{i\,\text{Cos}[11 e]}{208 c^7}+\frac{\text{Sin}[11 e]}{208 c^7}\right)+(A+i B)\left(\frac{\text{Cos}[3 e]}{112 c^7}+\frac{i\,\text{Sin}[3 e]}{112 c^7}\right)$$
$$\text{Sin}[6 f x]+(15 A+8 i B)\left(\frac{\text{Cos}[5 e]}{504 c^7}+\frac{i\,\text{Sin}[5 e]}{504 c^7}\right)\text{Sin}[8 f x]+$$
$$(30 A+i B)\left(\frac{\text{Cos}[7 e]}{792 c^7}+\frac{i\,\text{Sin}[7 e]}{792 c^7}\right)\text{Sin}[10 f x]+(25 A-12 i B)\left(\frac{\text{Cos}[9 e]}{1144 c^7}+\frac{i\,\text{Sin}[9 e]}{1144 c^7}\right)$$
$$\left.\text{Sin}[12 f x]+(A-i B)\left(\frac{\text{Cos}[11 e]}{208 c^7}+\frac{i\,\text{Sin}[11 e]}{208 c^7}\right)\text{Sin}[14 f x]\right)$$
$$\sqrt{\text{Sec}[e+f x]\,(c\,\text{Cos}[e+f x]-i\,c\,\text{Sin}[e+f x])}\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}$$
$$(A+B\,\text{Tan}[e+f x])$$

Problem 828: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+i\,a\,\text{Tan}[e+f x])^{7/2}\,(A+B\,\text{Tan}[e+f x])}{(c-i\,c\,\text{Tan}[e+f x])^{15/2}}\,dx$$

Optimal (type 3, 261 leaves, 6 steps):

$$-\frac{(i A+B)\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}}{15 f\,(c-i\,c\,\text{Tan}[e+f x])^{15/2}}-$$
$$\frac{(4 i A-11 B)\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}}{195 c f\,(c-i\,c\,\text{Tan}[e+f x])^{13/2}}-\frac{(4 i A-11 B)\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}}{715 c^2 f\,(c-i\,c\,\text{Tan}[e+f x])^{11/2}}-$$
$$\frac{2\,(4 i A-11 B)\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}}{6435 c^3 f\,(c-i\,c\,\text{Tan}[e+f x])^{9/2}}-\frac{2\,(4 i A-11 B)\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}}{45045 c^4 f\,(c-i\,c\,\text{Tan}[e+f x])^{7/2}}$$

Result (type 3, 577 leaves):

$$
\begin{aligned}
&\frac{1}{f\,\left(\mathrm{Cos}[f\,x]+\mathrm{i}\,\mathrm{Sin}[f\,x]\right)^3\,\left(A\,\mathrm{Cos}[e+f\,x]+B\,\mathrm{Sin}[e+f\,x]\right)}\\
&\mathrm{Cos}[e+f\,x]^4\,\left(\left(-\mathrm{i}\,A+B\right)\,\mathrm{Cos}[6\,f\,x]\,\left(\frac{\mathrm{Cos}[3\,e]}{224\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[3\,e]}{224\,c^8}\right)+\right.\\
&\quad\left(-37\,\mathrm{i}\,A+23\,B\right)\,\mathrm{Cos}[8\,f\,x]\,\left(\frac{\mathrm{Cos}[5\,e]}{2016\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[5\,e]}{2016\,c^8}\right)+\left(-49\,\mathrm{i}\,A+11\,B\right)\,\mathrm{Cos}[10\,f\,x]\\
&\quad\left(\frac{\mathrm{Cos}[7\,e]}{1584\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[7\,e]}{1584\,c^8}\right)+\left(61\,A-11\,\mathrm{i}\,B\right)\,\mathrm{Cos}[12\,f\,x]\,\left(-\frac{\mathrm{i}\,\mathrm{Cos}[9\,e]}{2288\,c^8}+\frac{\mathrm{Sin}[9\,e]}{2288\,c^8}\right)+\\
&\quad\left(73\,A-43\,\mathrm{i}\,B\right)\,\mathrm{Cos}[14\,f\,x]\,\left(-\frac{\mathrm{i}\,\mathrm{Cos}[11\,e]}{6240\,c^8}+\frac{\mathrm{Sin}[11\,e]}{6240\,c^8}\right)+\left(A-\mathrm{i}\,B\right)\,\mathrm{Cos}[16\,f\,x]\\
&\quad\left(-\frac{\mathrm{i}\,\mathrm{Cos}[13\,e]}{480\,c^8}+\frac{\mathrm{Sin}[13\,e]}{480\,c^8}\right)+\left(A+\mathrm{i}\,B\right)\,\left(\frac{\mathrm{Cos}[3\,e]}{224\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[3\,e]}{224\,c^8}\right)\,\mathrm{Sin}[6\,f\,x]+\\
&\quad\left(37\,A+23\,\mathrm{i}\,B\right)\,\left(\frac{\mathrm{Cos}[5\,e]}{2016\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[5\,e]}{2016\,c^8}\right)\,\mathrm{Sin}[8\,f\,x]+\left(49\,A+11\,\mathrm{i}\,B\right)\,\left(\frac{\mathrm{Cos}[7\,e]}{1584\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[7\,e]}{1584\,c^8}\right)\\
&\quad\mathrm{Sin}[10\,f\,x]+\left(61\,A-11\,\mathrm{i}\,B\right)\,\left(\frac{\mathrm{Cos}[9\,e]}{2288\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[9\,e]}{2288\,c^8}\right)\,\mathrm{Sin}[12\,f\,x]+\left(73\,A-43\,\mathrm{i}\,B\right)\\
&\quad\left.\left(\frac{\mathrm{Cos}[11\,e]}{6240\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[11\,e]}{6240\,c^8}\right)\,\mathrm{Sin}[14\,f\,x]+\left(A-\mathrm{i}\,B\right)\,\left(\frac{\mathrm{Cos}[13\,e]}{480\,c^8}+\frac{\mathrm{i}\,\mathrm{Sin}[13\,e]}{480\,c^8}\right)\,\mathrm{Sin}[16\,f\,x]\right)\\
&\sqrt{\mathrm{Sec}[e+f\,x]\,\left(c\,\mathrm{Cos}[e+f\,x]-\mathrm{i}\,c\,\mathrm{Sin}[e+f\,x]\right)}\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}\\
&\left(A+B\,\mathrm{Tan}[e+f\,x]\right)
\end{aligned}
$$

Problem 829: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}\,\left(A+B\,\mathrm{Tan}[e+f\,x]\right)}{\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{17/2}}\,dx$$

Optimal (type 3, 314 leaves, 7 steps):

$$
\begin{aligned}
&-\frac{\left(\mathrm{i}\,A+B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{17\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{17/2}}-\frac{\left(5\,\mathrm{i}\,A-12\,B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{255\,c\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{15/2}}-\\
&\frac{4\,\left(5\,\mathrm{i}\,A-12\,B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{3315\,c^2\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{13/2}}-\frac{4\,\left(5\,\mathrm{i}\,A-12\,B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{12155\,c^3\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{11/2}}-\\
&\frac{8\,\left(5\,\mathrm{i}\,A-12\,B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{109395\,c^4\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{9/2}}-\frac{8\,\left(5\,\mathrm{i}\,A-12\,B\right)\,\left(a+\mathrm{i}\,a\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}{765765\,c^5\,f\,\left(c-\mathrm{i}\,c\,\mathrm{Tan}[e+f\,x]\right)^{7/2}}
\end{aligned}
$$

Result (type 3, 655 leaves):

$$\frac{1}{f\,(\text{Cos}[f x]+i\,\text{Sin}[f x])^3\,(A\,\text{Cos}[e+f x]+B\,\text{Sin}[e+f x])}\text{Cos}[e+f x]^4\left((-i A+B)\,\text{Cos}[6 f x]\left(\frac{\text{Cos}[3 e]}{448 c^9}+\frac{i\,\text{Sin}[3 e]}{448 c^9}\right)+(-22 i A+15 B)\,\text{Cos}[8 f x]\left(\frac{\text{Cos}[5 e]}{2016 c^9}+\frac{i\,\text{Sin}[5 e]}{2016 c^9}\right)+(-145 i A+51 B)\,\text{Cos}[10 f x]\left(\frac{\text{Cos}[7 e]}{6336 c^9}+\frac{i\,\text{Sin}[7 e]}{6336 c^9}\right)+(-60 i A+B)\,\text{Cos}[12 f x]\left(\frac{\text{Cos}[9 e]}{2288 c^9}+\frac{i\,\text{Sin}[9 e]}{2288 c^9}\right)+(215 A-69 i B)\,\text{Cos}[14 f x]\left(-\frac{i\,\text{Cos}[11 e]}{12480 c^9}+\frac{\text{Sin}[11 e]}{12480 c^9}\right)+(50 A-33 i B)\,\text{Cos}[16 f x]\left(-\frac{i\,\text{Cos}[13 e]}{8160 c^9}+\frac{\text{Sin}[13 e]}{8160 c^9}\right)+(A-i B)\,\text{Cos}[18 f x]\left(-\frac{i\,\text{Cos}[15 e]}{1088 c^9}+\frac{\text{Sin}[15 e]}{1088 c^9}\right)+(A+i B)\left(\frac{\text{Cos}[3 e]}{448 c^9}+\frac{i\,\text{Sin}[3 e]}{448 c^9}\right)\text{Sin}[6 f x]+(22 A+15 i B)\left(\frac{\text{Cos}[5 e]}{2016 c^9}+\frac{i\,\text{Sin}[5 e]}{2016 c^9}\right)\text{Sin}[8 f x]+(145 A+51 i B)\left(\frac{\text{Cos}[7 e]}{6336 c^9}+\frac{i\,\text{Sin}[7 e]}{6336 c^9}\right)\text{Sin}[10 f x]+(60 A+i B)\left(\frac{\text{Cos}[9 e]}{2288 c^9}+\frac{i\,\text{Sin}[9 e]}{2288 c^9}\right)\text{Sin}[12 f x]+(215 A-69 i B)\left(\frac{\text{Cos}[11 e]}{12480 c^9}+\frac{i\,\text{Sin}[11 e]}{12480 c^9}\right)\text{Sin}[14 f x]+(50 A-33 i B)\left(\frac{\text{Cos}[13 e]}{8160 c^9}+\frac{i\,\text{Sin}[13 e]}{8160 c^9}\right)\text{Sin}[16 f x]+(A-i B)\left(\frac{\text{Cos}[15 e]}{1088 c^9}+\frac{i\,\text{Sin}[15 e]}{1088 c^9}\right)\text{Sin}[18 f x]\right)\sqrt{\text{Sec}[e+f x]\,(c\,\text{Cos}[e+f x]-i\,c\,\text{Sin}[e+f x])}\,(a+i\,a\,\text{Tan}[e+f x])^{7/2}\,(A+B\,\text{Tan}[e+f x])$$

Problem 855: Result more than twice size of optimal antiderivative.

$$\int \frac{(A+B\,\text{Tan}[e+f x])\,(c+d\,\text{Tan}[e+f x])}{(a+i\,a\,\text{Tan}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 147 leaves, 4 steps):

$$-\frac{(i A+B)\,(c-i d)\,\text{ArcTanh}\left[\frac{\sqrt{a+i\,a\,\text{Tan}[e+f x]}}{\sqrt{2}\,\sqrt{a}}\right]}{2\sqrt{2}\,a^{3/2}\,f}+\frac{(i A-B)\,(c+i d)}{3 f\,(a+i\,a\,\text{Tan}[e+f x])^{3/2}}+\frac{B\,(c+3 i d)+A\,(i c+d)}{2 a f\sqrt{a+i\,a\,\text{Tan}[e+f x]}}$$

Result (type 3, 480 leaves):

$$-\left(\left(i\,(A-i\,B)\,(c-i\,d)\,e^{2\,i\,e}\,\sqrt{e^{i\,f\,x}}\,\text{ArcSinh}\left[e^{i\,(e+f\,x)}\right]\right.\right.$$

$$\left.(\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^{3/2}\,(A+B\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])\right)\Big/$$

$$\left(2\,\sqrt{2}\,\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\,f\,\sqrt{\text{Sec}[e+f\,x]}\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\right.$$

$$\left.\left.(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\right)\right)+$$

$$\left((\text{Cos}[f\,x]+i\,\text{Sin}[f\,x])^2\left(\frac{1}{12}\,(5\,i\,A\,c+B\,c+A\,d+7\,i\,B\,d)\,\text{Cos}[2\,f\,x]+(2\,i\,A\,c+B\,c+A\,d+4\,i\,B\,d)\right.\right.$$

$$\left(\frac{1}{6}\,\text{Cos}[2\,e]+\frac{1}{6}\,i\,\text{Sin}[2\,e]\right)+(A+i\,B)\,(c+i\,d)\,\text{Cos}[4\,f\,x]\,\left(\frac{1}{12}\,i\,\text{Cos}[2\,e]+\frac{1}{12}\,\text{Sin}[2\,e]\right)+$$

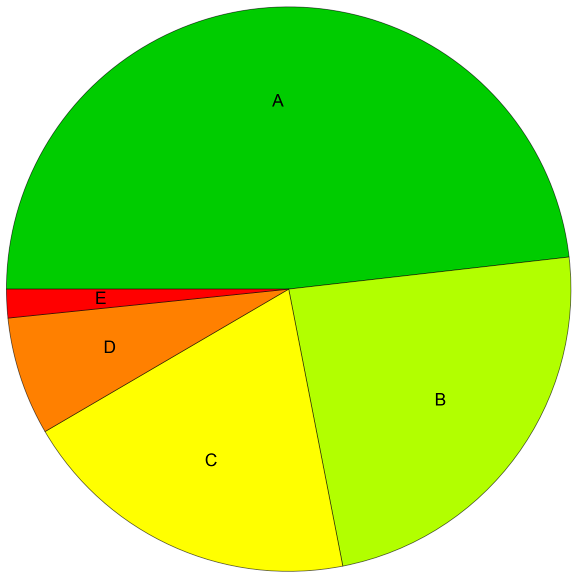
$$\frac{1}{12}\,(5\,A\,c-i\,B\,c-i\,A\,d+7\,B\,d)\,\text{Sin}[2\,f\,x]+(A+i\,B)\,(c+i\,d)$$

$$\left.\left.\left(\frac{1}{12}\,\text{Cos}[2\,e]-\frac{1}{12}\,i\,\text{Sin}[2\,e]\right)\text{Sin}[4\,f\,x]\right)(A+B\,\text{Tan}[e+f\,x])\,(c+d\,\text{Tan}[e+f\,x])\right)\Big/$$

$$\left(f\,(A\,\text{Cos}[e+f\,x]+B\,\text{Sin}[e+f\,x])\,(c\,\text{Cos}[e+f\,x]+d\,\text{Sin}[e+f\,x])\,(a+i\,a\,\text{Tan}[e+f\,x])^{3/2}\right)$$

Summary of Integration Test Results

855 integration problems



A - 412 optimal antiderivatives

B - 203 more than twice size of optimal antiderivatives

C - 168 unnecessarily complex antiderivatives

D - 58 unable to integrate problems

E - 14 integration timeouts