Mathematica 11.3 Integration Test Results

Test results for the 879 problems in "4.5.1.2 (d sec)^n (a+b sec)^m.m"

Problem 1: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 85 leaves, 6 steps):

$$\frac{3 a \operatorname{ArcTanh}[\operatorname{Sin}[c+d x]]}{8 d}+\frac{a \operatorname{Tan}[c+d x]}{d}+\frac{3 a \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{8 d}+\frac{a \operatorname{Sec}[c+d x]^3 \operatorname{Tan}[c+d x]}{4 d}+\frac{a \operatorname{Tan}[c+d x]^3}{3 d}$$

Result (type 3, 227 leaves):

$$-\frac{3 a \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{8 d}+\frac{3 a \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{8 d}+\frac{a}{16 d\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}+\frac{3 a}{16 d\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}-\frac{a}{16 d\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}-\frac{3 a}{16 d\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}+\frac{2 a \operatorname{Tan}[c+d x]}{3 d}+\frac{a \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]}{3 d}$$

Problem 2: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 63 leaves, 5 steps):

$$\frac{a \operatorname{ArcTanh}[\operatorname{Sin}[c+d x]]}{2 d}+\frac{a \operatorname{Tan}[c+d x]}{d}+\frac{a \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{2 d}+\frac{a \operatorname{Tan}[c+d x]^3}{3 d}$$

Result (type 3, 163 leaves):

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

Problem 3: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]^2\,(a+a\,\mathrm{Sec}[c+d\,x])\,dx$$

Optimal (type 3, 47 leaves, 5 steps):

$$\frac{a\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{2\,d}+\frac{a\,\mathrm{Tan}[c+d\,x]}{d}+\frac{a\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]}{2\,d}$$

Result (type 3, 138 leaves):

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

Problem 4: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]\,(a+a\,\mathrm{Sec}[c+d\,x])\,dx$$

Optimal (type 3, 24 leaves, 4 steps):

$$\frac{a\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{d}+\frac{a\,\mathrm{Tan}[c+d\,x]}{d}$$

Result (type 3, 81 leaves):

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

Problem 5: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\mathrm{Sec}[c+d\,x])\,dx$$

Optimal (type 3, 16 leaves, 2 steps):

$$a x+\frac{a \text{ArcTanh}[\text{Sin}[c+d x]]}{d}$$

Result (type 3, 73 leaves):

$$a x-\frac{a \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]}{d}+\frac{a \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]}{d}$$

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

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

Optimal (type 3, 122 leaves, 7 steps):

$$\frac{3 a^2 \text{ArcTanh}[\text{Sin}[c+d x]]}{4 d}+\frac{9 a^2 \text{Tan}[c+d x]}{5 d}+\frac{3 a^2 \text{Sec}[c+d x] \text{Tan}[c+d x]}{4 d}+\frac{a^2 \text{Sec}[c+d x]^3 \text{Tan}[c+d x]}{2 d}+\frac{a^2 \text{Sec}[c+d x]^4 \text{Tan}[c+d x]}{5 d}+\frac{3 a^2 \text{Tan}[c+d x]^3}{5 d}$$

Result (type 3, 487 leaves):

$$-\frac{1}{640 d} a^2 \text{Sec}[c] \text{Sec}[c+d x]^5 \left(75 \text{Cos}[2 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+\right.$$
$$75 \text{Cos}[4 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+$$
$$15 \text{Cos}[4 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+$$
$$15 \text{Cos}[6 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+$$
$$150 \text{Cos}[d x] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-\right.$$
$$\left.\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]\right)+150 \text{Cos}[2 c+d x]$$
$$\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]\right)-$$
$$75 \text{Cos}[2 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-$$
$$75 \text{Cos}[4 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-$$
$$15 \text{Cos}[4 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-$$
$$15 \text{Cos}[6 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-$$
$$400 \text{Sin}[d x]+80 \text{Sin}[2 c+d x]-140 \text{Sin}[c+2 d x]-140 \text{Sin}[3 c+2 d x]-$$
$$\left.240 \text{Sin}[2 c+3 d x]-30 \text{Sin}[3 c+4 d x]-30 \text{Sin}[5 c+4 d x]-48 \text{Sin}[4 c+5 d x]\right)$$

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

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

Optimal (type 3, 96 leaves, 6 steps):

$$\frac{7 a^2 \,\mathrm{ArcTanh}[\mathrm{Sin}[c+d x]]}{8 d}+\frac{2 a^2 \,\mathrm{Tan}[c+d x]}{d}+\frac{7 a^2 \,\mathrm{Sec}[c+d x]\,\mathrm{Tan}[c+d x]}{8 d}+\frac{a^2 \,\mathrm{Sec}[c+d x]^3\,\mathrm{Tan}[c+d x]}{4 d}+\frac{2 a^2 \,\mathrm{Tan}[c+d x]^3}{3 d}$$

Result (type 3, 877 leaves):

$$-\frac{1}{32 d}7\,\mathrm{Cos}[c+d x]^2\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2+$$
$$\frac{1}{32 d}7\,\mathrm{Cos}[c+d x]^2\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2+$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2}{64 d\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^4}+$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{12 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\left(29\,\mathrm{Cos}\left[\frac{c}{2}\right]-13\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(192 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{3 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}-$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2}{64 d\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^4}+$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{12 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\left(-29\,\mathrm{Cos}\left[\frac{c}{2}\right]-13\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(192 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{\mathrm{Cos}[c+d x]^2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4(a+a\,\mathrm{Sec}[c+d x])^2\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{3 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

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

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

Optimal (type 3, 74 leaves, 6 steps):

$$\frac{a^2 \operatorname{ArcTanh}[\operatorname{Sin}[c+d x]]}{d}+\frac{5 a^2 \operatorname{Tan}[c+d x]}{3 d}+\frac{a^2 \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{d}+\frac{a^2 \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]}{3 d}$$

Result (type 3, 318 leaves):

$$-\frac{1}{24 d} a^2 \operatorname{Sec}[c] \operatorname{Sec}[c+d x]^3 \left(3 \operatorname{Cos}[2 c+3 d x] \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+\right.$$
$$3 \operatorname{Cos}[4 c+3 d x] \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+$$
$$9 \operatorname{Cos}[d x] \left(\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-\right.$$
$$\left.\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]\right)+9 \operatorname{Cos}[2 c+d x]$$
$$\left(\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]\right)-$$
$$3 \operatorname{Cos}[2 c+3 d x] \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-$$
$$3 \operatorname{Cos}[4 c+3 d x] \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-24 \operatorname{Sin}[d x]+$$
$$\left.6 \operatorname{Sin}[2 c+d x]-6 \operatorname{Sin}[c+2 d x]-6 \operatorname{Sin}[3 c+2 d x]-10 \operatorname{Sin}[2 c+3 d x]\right)$$

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

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

Optimal (type 3, 54 leaves, 5 steps):

$$\frac{3 a^2 \operatorname{ArcTanh}[\operatorname{Sin}[c+d x]]}{2 d}+\frac{2 a^2 \operatorname{Tan}[c+d x]}{d}+\frac{a^2 \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{2 d}$$

Result (type 3, 219 leaves):

$$\frac{1}{16\,d}a^2\,(1+\text{Cos}[c+d\,x])^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^4 \left(-6\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+6\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+(8\,\text{Sin}[d\,x])\Big/\left(\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)$$

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

$$\int (a+a\,\text{Sec}[c+d\,x])^2\,dx$$

Optimal (type 3, 34 leaves, 4 steps):

$$a^2\,x+\frac{2\,a^2\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{d}+\frac{a^2\,\text{Tan}[c+d\,x]}{d}$$

Result (type 3, 171 leaves):

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

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

$$\int \text{Cos}[c+d\,x]\,(a+a\,\text{Sec}[c+d\,x])^2\,dx$$

Optimal (type 3, 34 leaves, 4 steps):

$$2\,a^2\,x+\frac{a^2\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{d}+\frac{a^2\,\text{Sin}[c+d\,x]}{d}$$

Result (type 3, 106 leaves):

$$2 a^2 x - \frac{a^2 \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]}{d} + \frac{a^2 \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]}{d} + \frac{a^2 \text{Cos}[d x] \text{Sin}[c]}{d} + \frac{a^2 \text{Cos}[c] \text{Sin}[d x]}{d}$$

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

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

Optimal (type 3, 114 leaves, 11 steps):

$$\frac{13 a^3 \text{ArcTanh}[\text{Sin}[c+d x]]}{8 d} + \frac{4 a^3 \text{Tan}[c+d x]}{d} + \frac{13 a^3 \text{Sec}[c+d x] \text{Tan}[c+d x]}{8 d} + \frac{3 a^3 \text{Sec}[c+d x]^3 \text{Tan}[c+d x]}{4 d} + \frac{5 a^3 \text{Tan}[c+d x]^3}{3 d} + \frac{a^3 \text{Tan}[c+d x]^5}{5 d}$$

Result (type 3, 487 leaves):

$$-\frac{1}{3840 d} a^3 \text{Sec}[c] \text{Sec}[c+d x]^5 \Big(975 \text{Cos}[2 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] +$$
$$975 \text{Cos}[4 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] +$$
$$195 \text{Cos}[4 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] +$$
$$195 \text{Cos}[6 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] +$$
$$1950 \text{Cos}[d x] \Big(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] -$$
$$\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\Big) + 1950 \text{Cos}[2 c+d x]$$
$$\Big(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] - \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\Big) -$$
$$975 \text{Cos}[2 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] -$$
$$975 \text{Cos}[4 c+3 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] -$$
$$195 \text{Cos}[4 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] -$$
$$195 \text{Cos}[6 c+5 d x] \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right] - 4640 \text{Sin}[d x] +$$
$$1440 \text{Sin}[2 c+d x] - 1500 \text{Sin}[c+2 d x] - 1500 \text{Sin}[3 c+2 d x] -$$
$$3040 \text{Sin}[2 c+3 d x] - 390 \text{Sin}[3 c+4 d x] - 390 \text{Sin}[5 c+4 d x] - 608 \text{Sin}[4 c+5 d x]\Big)$$

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

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

Optimal (type 3, 93 leaves, 11 steps):

$$\frac{15\,a^3\operatorname{ArcTanh}[\operatorname{Sin}[c+d\,x]]}{8\,d}+\frac{4\,a^3\operatorname{Tan}[c+d\,x]}{d}+\frac{15\,a^3\operatorname{Sec}[c+d\,x]\operatorname{Tan}[c+d\,x]}{8\,d}+\frac{a^3\operatorname{Sec}[c+d\,x]^3\operatorname{Tan}[c+d\,x]}{4\,d}+\frac{a^3\operatorname{Tan}[c+d\,x]^3}{d}$$

Result (type 3, 877 leaves):

$$-\frac{1}{64\,d}15\operatorname{Cos}[c+d\,x]^3\operatorname{Log}\left[\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3+$$
$$\frac{1}{64\,d}15\operatorname{Cos}[c+d\,x]^3\operatorname{Log}\left[\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3+$$
$$\frac{\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3}{128\,d\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^4}+$$
$$\frac{\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\operatorname{Sin}\left[\frac{d\,x}{2}\right]}{16\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^3}+$$
$$\left(\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\left(19\operatorname{Cos}\left[\frac{c}{2}\right]-11\operatorname{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(128\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$
$$\frac{3\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\operatorname{Sin}\left[\frac{d\,x}{2}\right]}{8\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}-$$
$$\frac{\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3}{128\,d\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^4}+$$
$$\frac{\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\operatorname{Sin}\left[\frac{d\,x}{2}\right]}{16\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^3}+$$
$$\left(\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\left(-19\operatorname{Cos}\left[\frac{c}{2}\right]-11\operatorname{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(128\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$
$$\frac{3\operatorname{Cos}[c+d\,x]^3\operatorname{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6(a+a\operatorname{Sec}[c+d\,x])^3\operatorname{Sin}\left[\frac{d\,x}{2}\right]}{8\,d\left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}$$

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

$$\int \text{Sec}[c+d x]\,(a+a\,\text{Sec}[c+d x])^3\,dx$$

Optimal (type 3, 72 leaves, 9 steps):

$$\frac{5 a^3 \text{ArcTanh}[\text{Sin}[c+d x]]}{2 d}+\frac{4 a^3 \text{Tan}[c+d x]}{d}+\frac{3 a^3 \text{Sec}[c+d x] \text{Tan}[c+d x]}{2 d}+\frac{a^3 \text{Tan}[c+d x]^3}{3 d}$$

Result (type 3, 733 leaves):

$$-\frac{1}{16 d}5 \text{Cos}[c+d x]^3 \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3+$$
$$\frac{1}{16 d}5 \text{Cos}[c+d x]^3 \text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3+$$
$$\frac{\text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sin}\left[\frac{d x}{2}\right]}{48 d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \left(5 \text{Cos}\left[\frac{c}{2}\right]-4 \text{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(48 d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{11 \text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sin}\left[\frac{d x}{2}\right]}{24 d \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}+$$
$$\frac{\text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sin}\left[\frac{d x}{2}\right]}{48 d \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \left(-5 \text{Cos}\left[\frac{c}{2}\right]-4 \text{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(48 d \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{11 \text{Cos}[c+d x]^3 \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sin}\left[\frac{d x}{2}\right]}{24 d \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

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

$$\int (a+a\,\text{Sec}[c+d x])^3\,dx$$

Optimal (type 3, 66 leaves, 5 steps):

$$a^3 x+\frac{7 a^3 \text{ArcTanh}[\text{Sin}[c+d x]]}{2 d}+\frac{5 a^3 \text{Tan}[c+d x]}{2 d}+\frac{\left(a^3+a^3 \text{Sec}[c+d x]\right) \text{Tan}[c+d x]}{2 d}$$

Result (type 3, 235 leaves):

$$\frac{1}{32} a^3 \left(1+\text{Cos}[c+d x]\right)^3 \text{Sec}\left[\frac{1}{2}(c+d x)\right]^6 \left(4 x-\frac{14 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d}+\frac{14 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d}+\frac{1}{d\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}-\frac{1}{d\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}+\left(12 \text{Sin}[d x]\right)\Big/\left(d\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)$$

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

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

Optimal (type 3, 48 leaves, 6 steps):

$$3 a^3 x+\frac{3 a^3 \text{ArcTanh}[\text{Sin}[c+d x]]}{d}+\frac{a^3 \text{Sin}[c+d x]}{d}+\frac{a^3 \text{Tan}[c+d x]}{d}$$

Result (type 3, 211 leaves):

$$\frac{1}{8} a^3 \left(1+\text{Cos}[c+d x]\right)^3 \text{Sec}\left[\frac{1}{2}(c+d x)\right]^6 \left(3 x-\frac{3 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d}+\frac{3 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d}+\frac{\text{Cos}[d x] \text{Sin}[c]}{d}+\frac{\text{Cos}[c] \text{Sin}[d x]}{d}+\frac{\text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}+\frac{\text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

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

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

Optimal (type 3, 111 leaves, 13 steps):

$$\frac{7 a^4 \text{ArcTanh}[\text{Sin}[c+d x]]}{2 d}+\frac{8 a^4 \text{Tan}[c+d x]}{d}+\frac{7 a^4 \text{Sec}[c+d x] \text{Tan}[c+d x]}{2 d}+\frac{a^4 \text{Sec}[c+d x]^3 \text{Tan}[c+d x]}{d}+\frac{8 a^4 \text{Tan}[c+d x]^3}{3 d}+\frac{a^4 \text{Tan}[c+d x]^5}{5 d}$$

Result (type 3, 498 leaves):

$$-\frac{1}{960\,d}a^4\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^5\left(525\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+\right.$$
$$525\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$105\,\mathrm{Cos}[4\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$105\,\mathrm{Cos}[6\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$1050\,\mathrm{Cos}[d\,x]\left(\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\right.$$
$$\left.\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+1050\,\mathrm{Cos}[2\,c+d\,x]$$
$$\left(\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)-$$
$$525\,\mathrm{Cos}[2\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$525\,\mathrm{Cos}[4\,c+3\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$105\,\mathrm{Cos}[4\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$105\,\mathrm{Cos}[6\,c+5\,d\,x]\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-2360\,\mathrm{Sin}[d\,x]+$$
$$960\,\mathrm{Sin}[2\,c+d\,x]-660\,\mathrm{Sin}[c+2\,d\,x]-660\,\mathrm{Sin}[3\,c+2\,d\,x]-1600\,\mathrm{Sin}[2\,c+3\,d\,x]+$$
$$\left.60\,\mathrm{Sin}[4\,c+3\,d\,x]-210\,\mathrm{Sin}[3\,c+4\,d\,x]-210\,\mathrm{Sin}[5\,c+4\,d\,x]-332\,\mathrm{Sin}[4\,c+5\,d\,x]\right)$$

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

$$\int \mathrm{Sec}[c+d\,x]\,(a+a\,\mathrm{Sec}[c+d\,x])^4\,dx$$

Optimal (type 3, 96 leaves, 12 steps):

$$\frac{35\,a^4\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{8\,d}+\frac{8\,a^4\,\mathrm{Tan}[c+d\,x]}{d}+$$
$$\frac{27\,a^4\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]}{8\,d}+\frac{a^4\,\mathrm{Sec}[c+d\,x]^3\,\mathrm{Tan}[c+d\,x]}{4\,d}+\frac{4\,a^4\,\mathrm{Tan}[c+d\,x]^3}{3\,d}$$

Result (type 3, 877 leaves):

$$-\frac{1}{128\,d}35\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4+$$
$$\frac{1}{128\,d}35\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4+$$
$$\frac{\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4}{256\,d\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^4}+$$
$$\frac{\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{24\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\left(97\,\mathrm{Cos}\left[\frac{c}{2}\right]-65\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(768\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$
$$\frac{5\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{12\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}-$$
$$\frac{\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4}{256\,d\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^4}+$$
$$\frac{\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{24\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\left(-97\,\mathrm{Cos}\left[\frac{c}{2}\right]-65\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(768\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$
$$\frac{5\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^4\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{12\,d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}$$

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

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

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

$$a^4\,x+\frac{6\,a^4\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{d}+\frac{5\,a^4\,\mathrm{Tan}[c+d\,x]}{d}+$$
$$\frac{\left(a^2+a^2\,\mathrm{Sec}[c+d\,x]\right)^2\,\mathrm{Tan}[c+d\,x]}{3\,d}+\frac{4\left(a^4+a^4\,\mathrm{Sec}[c+d\,x]\right)\mathrm{Tan}[c+d\,x]}{3\,d}$$

Result (type 3, 773 leaves):

$$\frac{1}{16}x\,\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4-\frac{1}{8 d}$$
$$3\,\mathrm{Cos}[c+d x]^4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4+$$
$$\frac{1}{8 d}3\,\mathrm{Cos}[c+d x]^4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4+$$
$$\frac{\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{96 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\left(13\,\mathrm{Cos}\left[\frac{c}{2}\right]-11\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(192 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{5\,\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{12 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}+$$
$$\frac{\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{96 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$
$$\left(\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\left(-13\,\mathrm{Cos}\left[\frac{c}{2}\right]-11\,\mathrm{Sin}\left[\frac{c}{2}\right]\right)\right)\Big/$$
$$\left(192 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+$$
$$\frac{5\,\mathrm{Cos}[c+d x]^4\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^8(a+a\,\mathrm{Sec}[c+d x])^4\,\mathrm{Sin}\left[\frac{d x}{2}\right]}{12 d\left(\mathrm{Cos}\left[\frac{c}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\mathrm{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

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

$$\int \mathrm{Cos}[c+d x]\,(a+a\,\mathrm{Sec}[c+d x])^4\,dx$$

Optimal (type 3, 73 leaves, 8 steps):

$$4 a^4 x+\frac{13 a^4\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d x]]}{2 d}+\frac{a^4\,\mathrm{Sin}[c+d x]}{d}+\frac{4 a^4\,\mathrm{Tan}[c+d x]}{d}+\frac{a^4\,\mathrm{Sec}[c+d x]\,\mathrm{Tan}[c+d x]}{2 d}$$

Result (type 3, 272 leaves):

$$\frac{1}{64} a^4 (1+\text{Cos}[c+d x])^4 \text{Sec}\left[\frac{1}{2}(c+d x)\right]^8 \left(16 x - \frac{26 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d} + \frac{26 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d} + \frac{4 \text{Cos}[d x] \text{Sin}[c]}{d} + \frac{4 \text{Cos}[c] \text{Sin}[d x]}{d} + \frac{1}{d\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2} + \frac{16 \text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)} - \frac{1}{d\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2} + \frac{16 \text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

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

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

Optimal (type 3, 73 leaves, 8 steps):

$$\frac{13 a^4 x}{2} + \frac{4 a^4 \text{ArcTanh}[\text{Sin}[c+d x]]}{d} + \frac{4 a^4 \text{Sin}[c+d x]}{d} + \frac{a^4 \text{Cos}[c+d x] \text{Sin}[c+d x]}{2 d} + \frac{a^4 \text{Tan}[c+d x]}{d}$$

Result (type 3, 241 leaves):

$$\frac{1}{64} a^4 (1+\text{Cos}[c+d x])^4 \text{Sec}\left[\frac{1}{2}(c+d x)\right]^8 \left(26 x - \frac{16 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d} + \frac{16 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{d} + \frac{16 \text{Cos}[d x] \text{Sin}[c]}{d} + \frac{\text{Cos}[2 d x] \text{Sin}[2 c]}{d} + \frac{16 \text{Cos}[c] \text{Sin}[d x]}{d} + \frac{\text{Cos}[2 c] \text{Sin}[2 d x]}{d} + \frac{4 \text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)} + \frac{4 \text{Sin}\left[\frac{d x}{2}\right]}{d\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}\right)$$

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

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

Optimal (type 3, 103 leaves, 6 steps):

$$-\frac{3\,\text{ArcTanh}[\text{Sin}[c+d x]]}{2 a d}+\frac{4\,\text{Tan}[c+d x]}{a d}-\frac{3\,\text{Sec}[c+d x]\,\text{Tan}[c+d x]}{2 a d}-\frac{\text{Sec}[c+d x]^3\,\text{Tan}[c+d x]}{d\,(a+a\,\text{Sec}[c+d x])}+\frac{4\,\text{Tan}[c+d x]^3}{3 a d}$$

Result (type 3, 374 leaves):

$$\frac{1}{3 a d\,(1+\text{Sec}[c+d x])}\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c+d x]\left(6\,\text{Sec}\left[\frac{c}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]+\frac{1}{8}\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c]\right.$$
$$\text{Sec}[c+d x]^3\left(9\,\text{Cos}[2c+3 d x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+\right.$$
$$9\,\text{Cos}[4c+3 d x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+27\,\text{Cos}[d x]$$
$$\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+$$
$$27\,\text{Cos}[2c+d x]\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\right.\right.$$
$$\left.\left.\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)-9\,\text{Cos}[2c+3 d x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-$$
$$9\,\text{Cos}[4c+3 d x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+48\,\text{Sin}[d x]-$$
$$\left.\left.12\,\text{Sin}[2c+d x]-6\,\text{Sin}[c+2 d x]-6\,\text{Sin}[3c+2 d x]+20\,\text{Sin}[2c+3 d x]\right)\right)$$

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

$$\int \frac{\text{Sec}[c+d x]^4}{a+a\,\text{Sec}[c+d x]}\,dx$$

Optimal (type 3, 85 leaves, 6 steps):

$$\frac{3\,\text{ArcTanh}[\text{Sin}[c+d x]]}{2 a d}-\frac{2\,\text{Tan}[c+d x]}{a d}+\frac{3\,\text{Sec}[c+d x]\,\text{Tan}[c+d x]}{2 a d}-\frac{\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]}{d\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 3, 250 leaves):

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

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

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

Optimal (type 3, 51 leaves, 4 steps):

$$-\frac{\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{a\,d}+\frac{\mathrm{Tan}[c+d\,x]}{a\,d}+\frac{\mathrm{Tan}[c+d\,x]}{d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)}$$

Result (type 3, 194 leaves):

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

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

$$\int\frac{\mathrm{Sec}[c+d\,x]^2}{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

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

$$\frac{\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{a\,d}-\frac{\mathrm{Tan}[c+d\,x]}{d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)}$$

Result (type 3, 109 leaves):

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

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

$$\int \frac{\mathrm{Cos}[c+d\,x]}{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 3, 44 leaves, 4 steps):

$$-\frac{x}{a}+\frac{2\,\mathrm{Sin}[c+d\,x]}{a\,d}-\frac{\mathrm{Sin}[c+d\,x]}{d\,(a+a\,\mathrm{Sec}[c+d\,x])}$$

Result (type 3, 89 leaves):

$$\frac{1}{4\,a\,d}\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]$$
$$\left(-2\,d\,x\,\mathrm{Cos}\left[\frac{d\,x}{2}\right]-2\,d\,x\,\mathrm{Cos}\left[c+\frac{d\,x}{2}\right]+5\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]+\mathrm{Sin}\left[c+\frac{d\,x}{2}\right]+\mathrm{Sin}\left[c+\frac{3\,d\,x}{2}\right]+\mathrm{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]\right)$$

Problem 52: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Sec}[c+d\,x]^5}{(a+a\,\mathrm{Sec}[c+d\,x])^2}\,dx$$

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

$$\frac{7\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{2\,a^2\,d}-\frac{16\,\mathrm{Tan}[c+d\,x]}{3\,a^2\,d}+\frac{7\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]}{2\,a^2\,d}-$$
$$\frac{8\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]}{3\,a^2\,d\,(1+\mathrm{Sec}[c+d\,x])}-\frac{\mathrm{Sec}[c+d\,x]^3\,\mathrm{Tan}[c+d\,x]}{3\,d\,(a+a\,\mathrm{Sec}[c+d\,x])^2}$$

Result (type 3, 300 leaves):

$$\frac{1}{3 a^2 d\, (1+\text{Sec}[c+d x])^2}\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c+d x]^2\left(-2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]-40\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}\left[\frac{c}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]+3\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^3\left(-14\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+14\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}-(8\,\text{Sin}[d x])\Big/\left(\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)-2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{c}{2}\right]\right)$$

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

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

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

$$-\frac{2\,\text{ArcTanh}[\text{Sin}[c+d x]]}{a^2 d}+\frac{4\,\text{Tan}[c+d x]}{3 a^2 d}+\frac{2\,\text{Tan}[c+d x]}{a^2 d\,(1+\text{Sec}[c+d x])}-\frac{\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]}{3 d\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 3, 247 leaves):

$$\frac{1}{3 a^2 d\,(1+\text{Sec}[c+d x])^2}2\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c+d x]^2\left(\text{Sec}\left[\frac{c}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]+14\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}\left[\frac{c}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]+6\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^3\left(2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+\text{Sin}[d x]\Big/\left(\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)+\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{c}{2}\right]\right)$$

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

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

Optimal (type 3, 66 leaves, 4 steps):

$$\frac{\text{ArcTanh}[\text{Sin}[c+d x]]}{a^2 d}-\frac{5 \text{Tan}[c+d x]}{3 a^2 d (1+\text{Sec}[c+d x])}+\frac{\text{Tan}[c+d x]}{3 d (a+a \text{Sec}[c+d x])^2}$$

Result (type 3, 160 leaves):

$$-\left(\left(2 \text{Cos}\left[\frac{1}{2} (c+d x)\right] \text{Sec}[c+d x]^2 \left(6 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^3 \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]\right)+\text{Sec}\left[\frac{c}{2}\right] \text{Sin}\left[\frac{d x}{2}\right]+8 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \text{Sec}\left[\frac{c}{2}\right] \text{Sin}\left[\frac{d x}{2}\right]+\text{Cos}\left[\frac{1}{2} (c+d x)\right] \text{Tan}\left[\frac{c}{2}\right]\right)\right)\Big/\left(3 a^2 d \left(1+\text{Sec}[c+d x]\right)^2\right)\right)$$

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

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

Optimal (type 3, 72 leaves, 5 steps):

$$-\frac{2 x}{a^2}+\frac{10 \text{Sin}[c+d x]}{3 a^2 d}-\frac{2 \text{Sin}[c+d x]}{a^2 d (1+\text{Sec}[c+d x])}-\frac{\text{Sin}[c+d x]}{3 d (a+a \text{Sec}[c+d x])^2}$$

Result (type 3, 151 leaves):

$$\frac{1}{48 a^2 d}\text{Sec}\left[\frac{c}{2}\right] \text{Sec}\left[\frac{1}{2} (c+d x)\right]^3 \left(-36 d x \text{Cos}\left[\frac{d x}{2}\right]-36 d x \text{Cos}\left[c+\frac{d x}{2}\right]-12 d x \text{Cos}\left[c+\frac{3 d x}{2}\right]-12 d x \text{Cos}\left[2 c+\frac{3 d x}{2}\right]+66 \text{Sin}\left[\frac{d x}{2}\right]-30 \text{Sin}\left[c+\frac{d x}{2}\right]+41 \text{Sin}\left[c+\frac{3 d x}{2}\right]+9 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]+3 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]+3 \text{Sin}\left[3 c+\frac{5 d x}{2}\right]\right)$$

Problem 61: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]^6}{(a+a \text{Sec}[c+d x])^3} \, dx$$

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

$$\frac{13 \text{ArcTanh}[\text{Sin}[c+d x]]}{2 a^3 d}-\frac{152 \text{Tan}[c+d x]}{15 a^3 d}+\frac{13 \text{Sec}[c+d x] \text{Tan}[c+d x]}{2 a^3 d}-\frac{\text{Sec}[c+d x]^4 \text{Tan}[c+d x]}{5 d (a+a \text{Sec}[c+d x])^3}-\frac{11 \text{Sec}[c+d x]^3 \text{Tan}[c+d x]}{15 a d (a+a \text{Sec}[c+d x])^2}-\frac{76 \text{Sec}[c+d x]^2 \text{Tan}[c+d x]}{15 d \left(a^3+a^3 \text{Sec}[c+d x]\right)}$$

Result (type 3, 351 leaves):

$$-\frac{1}{480\,a^3\,d\,\left(1+\text{Sec}[c+d\,x]\right)^3}\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Sec}[c+d\,x]^3$$
$$\left(24\,960\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^5\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-\right.\right.$$
$$\left.\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)+\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^2$$
$$\left(-1235\,\text{Sin}\left[\frac{d\,x}{2}\right]+3805\,\text{Sin}\left[\frac{3\,d\,x}{2}\right]-4329\,\text{Sin}\left[c-\frac{d\,x}{2}\right]+1989\,\text{Sin}\left[c+\frac{d\,x}{2}\right]-\right.$$
$$3575\,\text{Sin}\left[2\,c+\frac{d\,x}{2}\right]-475\,\text{Sin}\left[c+\frac{3\,d\,x}{2}\right]+2005\,\text{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-2275\,\text{Sin}\left[3\,c+\frac{3\,d\,x}{2}\right]+$$
$$2673\,\text{Sin}\left[c+\frac{5\,d\,x}{2}\right]+105\,\text{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+1593\,\text{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-975\,\text{Sin}\left[4\,c+\frac{5\,d\,x}{2}\right]+$$
$$1325\,\text{Sin}\left[2\,c+\frac{7\,d\,x}{2}\right]+255\,\text{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]+875\,\text{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]-195\,\text{Sin}\left[5\,c+\frac{7\,d\,x}{2}\right]+$$
$$\left.\left.304\,\text{Sin}\left[3\,c+\frac{9\,d\,x}{2}\right]+90\,\text{Sin}\left[4\,c+\frac{9\,d\,x}{2}\right]+214\,\text{Sin}\left[5\,c+\frac{9\,d\,x}{2}\right]\right)\right)$$

Problem 62: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^5}{\left(a+a\,\text{Sec}[c+d\,x]\right)^3}\,dx$$

Optimal (type 3, 128 leaves, 7 steps):

$$-\frac{3\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{a^3\,d}+\frac{9\,\text{Tan}[c+d\,x]}{5\,a^3\,d}-$$
$$\frac{\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{5\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^3}-\frac{3\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{5\,a\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2}+\frac{3\,\text{Tan}[c+d\,x]}{d\,\left(a^3+a^3\,\text{Sec}[c+d\,x]\right)}$$

Result (type 3, 294 leaves):

$$\frac{1}{5\,a^3\,d\,\left(1+\text{Sec}[c+d\,x]\right)^3}$$
$$2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Sec}[c+d\,x]^3\left(\text{Sec}\left[\frac{c}{2}\right]\,\text{Sin}\left[\frac{d\,x}{2}\right]+8\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sin}\left[\frac{d\,x}{2}\right]+\right.$$
$$76\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^4\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sin}\left[\frac{d\,x}{2}\right]+20\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^5$$
$$\left(3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\right.$$
$$\text{Sin}[d\,x]\Big/\left(\left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left.\left.\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)+$$
$$\left.\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Tan}\left[\frac{c}{2}\right]+8\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^3\,\text{Tan}\left[\frac{c}{2}\right]\right)$$

Problem 70: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^7}{(a+a\,\text{Sec}[c+d\,x])^4}\,dx$$

Optimal (type 3, 193 leaves, 9 steps):

$$\frac{21\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{2\,a^4\,d}-\frac{576\,\text{Tan}[c+d\,x]}{35\,a^4\,d}+\frac{21\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{2\,a^4\,d}-\frac{43\,\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{35\,a^4\,d\,(1+\text{Sec}[c+d\,x])^2}-\frac{288\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{35\,a^4\,d\,(1+\text{Sec}[c+d\,x])}-\frac{\text{Sec}[c+d\,x]^5\,\text{Tan}[c+d\,x]}{7\,d\,(a+a\,\text{Sec}[c+d\,x])^4}-\frac{2\,\text{Sec}[c+d\,x]^4\,\text{Tan}[c+d\,x]}{5\,a\,d\,(a+a\,\text{Sec}[c+d\,x])^3}$$

Result (type 3, 403 leaves):

$$-\frac{1}{2240\,a^4\,d\,(1+\text{Sec}[c+d\,x])^4}\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}[c+d\,x]^4\left(376320\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^7\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+\right.$$
$$\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\left(-24402\,\text{Sin}\left[\frac{d\,x}{2}\right]+55556\,\text{Sin}\left[\frac{3\,d\,x}{2}\right]-61054\,\text{Sin}\left[c-\frac{d\,x}{2}\right]+\right.$$
$$33614\,\text{Sin}\left[c+\frac{d\,x}{2}\right]-51842\,\text{Sin}\left[2\,c+\frac{d\,x}{2}\right]-12460\,\text{Sin}\left[c+\frac{3\,d\,x}{2}\right]+33716\,\text{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-$$
$$34300\,\text{Sin}\left[3\,c+\frac{3\,d\,x}{2}\right]+39788\,\text{Sin}\left[c+\frac{5\,d\,x}{2}\right]-2940\,\text{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+$$
$$26068\,\text{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-16660\,\text{Sin}\left[4\,c+\frac{5\,d\,x}{2}\right]+21351\,\text{Sin}\left[2\,c+\frac{7\,d\,x}{2}\right]+$$
$$1295\,\text{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]+14911\,\text{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]-5145\,\text{Sin}\left[5\,c+\frac{7\,d\,x}{2}\right]+$$
$$7329\,\text{Sin}\left[3\,c+\frac{9\,d\,x}{2}\right]+1225\,\text{Sin}\left[4\,c+\frac{9\,d\,x}{2}\right]+5369\,\text{Sin}\left[5\,c+\frac{9\,d\,x}{2}\right]-735\,\text{Sin}\left[6\,c+\frac{9\,d\,x}{2}\right]+$$
$$\left.\left.1152\,\text{Sin}\left[4\,c+\frac{11\,d\,x}{2}\right]+280\,\text{Sin}\left[5\,c+\frac{11\,d\,x}{2}\right]+872\,\text{Sin}\left[6\,c+\frac{11\,d\,x}{2}\right]\right)\right)$$

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

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

Optimal (type 3, 159 leaves, 8 steps):

$$-\frac{4\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{a^4\,d}+\frac{244\,\text{Tan}[c+d\,x]}{105\,a^4\,d}-\frac{88\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{105\,a^4\,d\,(1+\text{Sec}[c+d\,x])^2}+\frac{4\,\text{Tan}[c+d\,x]}{a^4\,d\,(1+\text{Sec}[c+d\,x])}-\frac{\text{Sec}[c+d\,x]^4\,\text{Tan}[c+d\,x]}{7\,d\,(a+a\,\text{Sec}[c+d\,x])^4}-\frac{12\,\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{35\,a\,d\,(a+a\,\text{Sec}[c+d\,x])^3}$$

Result (type 3, 349 leaves):

$$\frac{1}{1680\,a^4\,d\,(1+\mathrm{Sec}[c+d\,x])^4}\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]\mathrm{Sec}[c+d\,x]^4\left(107520\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^7\left(\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]\left(-10780\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]+18788\,\mathrm{Sin}\left[\frac{3\,d\,x}{2}\right]-20524\,\mathrm{Sin}\left[c-\frac{d\,x}{2}\right]+14644\,\mathrm{Sin}\left[c+\frac{d\,x}{2}\right]-16660\,\mathrm{Sin}\left[2\,c+\frac{d\,x}{2}\right]-4690\,\mathrm{Sin}\left[c+\frac{3\,d\,x}{2}\right]+14378\,\mathrm{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-9100\,\mathrm{Sin}\left[3\,c+\frac{3\,d\,x}{2}\right]+11668\,\mathrm{Sin}\left[c+\frac{5\,d\,x}{2}\right]-630\,\mathrm{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+9358\,\mathrm{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-2940\,\mathrm{Sin}\left[4\,c+\frac{5\,d\,x}{2}\right]+4228\,\mathrm{Sin}\left[2\,c+\frac{7\,d\,x}{2}\right]+315\,\mathrm{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]+3493\,\mathrm{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]-420\,\mathrm{Sin}\left[5\,c+\frac{7\,d\,x}{2}\right]+664\,\mathrm{Sin}\left[3\,c+\frac{9\,d\,x}{2}\right]+105\,\mathrm{Sin}\left[4\,c+\frac{9\,d\,x}{2}\right]+559\,\mathrm{Sin}\left[5\,c+\frac{9\,d\,x}{2}\right]\right)\right)$$

Problem 77: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+a\,\mathrm{Sec}[c+d\,x])^4}\,dx$$

Optimal (type 3, 111 leaves, 5 steps):

$$\frac{x}{a^4}-\frac{11\,\mathrm{Tan}[c+d\,x]}{21\,a^4\,d\,(1+\mathrm{Sec}[c+d\,x])^2}-\frac{32\,\mathrm{Tan}[c+d\,x]}{21\,a^4\,d\,(1+\mathrm{Sec}[c+d\,x])}-\frac{\mathrm{Tan}[c+d\,x]}{7\,d\,(a+a\,\mathrm{Sec}[c+d\,x])^4}-\frac{2\,\mathrm{Tan}[c+d\,x]}{7\,a\,d\,(a+a\,\mathrm{Sec}[c+d\,x])^3}$$

Result (type 3, 224 leaves):

$$\frac{1}{2688\,a^4\,d}\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^7\left(735\,d\,x\,\mathrm{Cos}\left[\frac{d\,x}{2}\right]+735\,d\,x\,\mathrm{Cos}\left[c+\frac{d\,x}{2}\right]+441\,d\,x\,\mathrm{Cos}\left[c+\frac{3\,d\,x}{2}\right]+441\,d\,x\,\mathrm{Cos}\left[2\,c+\frac{3\,d\,x}{2}\right]+147\,d\,x\,\mathrm{Cos}\left[2\,c+\frac{5\,d\,x}{2}\right]+147\,d\,x\,\mathrm{Cos}\left[3\,c+\frac{5\,d\,x}{2}\right]+21\,d\,x\,\mathrm{Cos}\left[3\,c+\frac{7\,d\,x}{2}\right]+21\,d\,x\,\mathrm{Cos}\left[4\,c+\frac{7\,d\,x}{2}\right]-1988\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]+1652\,\mathrm{Sin}\left[c+\frac{d\,x}{2}\right]-1428\,\mathrm{Sin}\left[c+\frac{3\,d\,x}{2}\right]+756\,\mathrm{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-560\,\mathrm{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+168\,\mathrm{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-104\,\mathrm{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]\right)$$

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

$$\int \frac{\mathrm{Cos}[c+d\,x]}{(a+a\,\mathrm{Sec}[c+d\,x])^4}\,dx$$

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

$$-\frac{4x}{a^4}+\frac{664\,\text{Sin}[c+dx]}{105\,a^4\,d}-\frac{88\,\text{Sin}[c+dx]}{105\,a^4\,d\,(1+\text{Sec}[c+dx])^2}-\frac{4\,\text{Sin}[c+dx]}{a^4\,d\,(1+\text{Sec}[c+dx])}-\frac{\text{Sin}[c+dx]}{7\,d\,(a+a\,\text{Sec}[c+dx])^4}-\frac{12\,\text{Sin}[c+dx]}{35\,a\,d\,(a+a\,\text{Sec}[c+dx])^3}$$

Result (type 3, 263 leaves):

$$-\frac{1}{26\,880\,a^4\,d}\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^7\left(29\,400\,d\,x\,\text{Cos}\left[\frac{dx}{2}\right]+29\,400\,d\,x\,\text{Cos}\left[c+\frac{dx}{2}\right]+17\,640\,d\,x\,\text{Cos}\left[c+\frac{3dx}{2}\right]+17\,640\,d\,x\,\text{Cos}\left[2c+\frac{3dx}{2}\right]+5880\,d\,x\,\text{Cos}\left[2c+\frac{5dx}{2}\right]+5880\,d\,x\,\text{Cos}\left[3c+\frac{5dx}{2}\right]+840\,d\,x\,\text{Cos}\left[3c+\frac{7dx}{2}\right]+840\,d\,x\,\text{Cos}\left[4c+\frac{7dx}{2}\right]-60\,830\,\text{Sin}\left[\frac{dx}{2}\right]+46\,130\,\text{Sin}\left[c+\frac{dx}{2}\right]-46\,116\,\text{Sin}\left[c+\frac{3dx}{2}\right]+18\,060\,\text{Sin}\left[2c+\frac{3dx}{2}\right]-19\,292\,\text{Sin}\left[2c+\frac{5dx}{2}\right]+2100\,\text{Sin}\left[3c+\frac{5dx}{2}\right]-3791\,\text{Sin}\left[3c+\frac{7dx}{2}\right]-735\,\text{Sin}\left[4c+\frac{7dx}{2}\right]-105\,\text{Sin}\left[4c+\frac{9dx}{2}\right]-105\,\text{Sin}\left[5c+\frac{9dx}{2}\right]\right)$$

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

$$\int\frac{\text{Sec}[c+dx]^7}{(a+a\,\text{Sec}[c+dx])^5}\,dx$$

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

$$-\frac{5\,\text{ArcTanh}[\text{Sin}[c+dx]]}{a^5\,d}+\frac{181\,\text{Tan}[c+dx]}{63\,a^5\,d}-\frac{\text{Sec}[c+dx]^5\,\text{Tan}[c+dx]}{9\,d\,(a+a\,\text{Sec}[c+dx])^5}-\frac{5\,\text{Sec}[c+dx]^4\,\text{Tan}[c+dx]}{21\,a\,d\,(a+a\,\text{Sec}[c+dx])^4}-\frac{29\,\text{Sec}[c+dx]^3\,\text{Tan}[c+dx]}{63\,a^2\,d\,(a+a\,\text{Sec}[c+dx])^3}-\frac{67\,\text{Sec}[c+dx]^2\,\text{Tan}[c+dx]}{63\,a^3\,d\,(a+a\,\text{Sec}[c+dx])^2}+\frac{5\,\text{Tan}[c+dx]}{d\,(a^5+a^5\,\text{Sec}[c+dx])}$$

Result (type 3, 401 leaves):

$$\frac{1}{2016\, a^5\, d\, (1+\text{Sec}[c+d x])^5} \text{Cos}\left[\frac{1}{2}(c+d x)\right] \text{Sec}[c+d x]^5 \left(322560\, \text{Cos}\left[\frac{1}{2}(c+d x)\right]^9 \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+\text{Sec}\left[\frac{c}{2}\right] \text{Sec}[c] \text{Sec}[c+d x] \left(-33978\, \text{Sin}\left[\frac{d x}{2}\right]+52002\, \text{Sin}\left[\frac{3 d x}{2}\right]-56952\, \text{Sin}\left[c-\frac{d x}{2}\right]+43722\, \text{Sin}\left[c+\frac{d x}{2}\right]-47208\, \text{Sin}\left[2 c+\frac{d x}{2}\right]-18144\, \text{Sin}\left[c+\frac{3 d x}{2}\right]+41796\, \text{Sin}\left[2 c+\frac{3 d x}{2}\right]-28350\, \text{Sin}\left[3 c+\frac{3 d x}{2}\right]+34578\, \text{Sin}\left[c+\frac{5 d x}{2}\right]-5691\, \text{Sin}\left[2 c+\frac{5 d x}{2}\right]+28719\, \text{Sin}\left[3 c+\frac{5 d x}{2}\right]-11550\, \text{Sin}\left[4 c+\frac{5 d x}{2}\right]+15517\, \text{Sin}\left[2 c+\frac{7 d x}{2}\right]-504\, \text{Sin}\left[3 c+\frac{7 d x}{2}\right]+13186\, \text{Sin}\left[4 c+\frac{7 d x}{2}\right]-2835\, \text{Sin}\left[5 c+\frac{7 d x}{2}\right]+4149\, \text{Sin}\left[3 c+\frac{9 d x}{2}\right]+252\, \text{Sin}\left[4 c+\frac{9 d x}{2}\right]+3582\, \text{Sin}\left[5 c+\frac{9 d x}{2}\right]-315\, \text{Sin}\left[6 c+\frac{9 d x}{2}\right]+496\, \text{Sin}\left[4 c+\frac{11 d x}{2}\right]+63\, \text{Sin}\left[5 c+\frac{11 d x}{2}\right]+433\, \text{Sin}\left[6 c+\frac{11 d x}{2}\right]\right)\right)$$

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

$$\int \frac{\text{Cos}[c+d x]}{(a+a\, \text{Sec}[c+d x])^5}\, dx$$

Optimal (type 3, 159 leaves, 8 steps):

$$-\frac{5 x}{a^5}+\frac{496\, \text{Sin}[c+d x]}{63\, a^5\, d}-\frac{\text{Sin}[c+d x]}{9 d\, (a+a\, \text{Sec}[c+d x])^5}-\frac{5\, \text{Sin}[c+d x]}{21\, a\, d\, (a+a\, \text{Sec}[c+d x])^4}-\frac{29\, \text{Sin}[c+d x]}{63\, a^2\, d\, (a+a\, \text{Sec}[c+d x])^3}-\frac{67\, \text{Sin}[c+d x]}{63\, a^3\, d\, (a+a\, \text{Sec}[c+d x])^2}-\frac{5\, \text{Sin}[c+d x]}{d\, (a^5+a^5\, \text{Sec}[c+d x])}$$

Result (type 3, 319 leaves):

$$-\frac{1}{64512\,a^5\,d}\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^9\,\Bigg(79380\,d\,x\,\mathrm{Cos}\left[\frac{d\,x}{2}\right]+79380\,d\,x\,\mathrm{Cos}\left[c+\frac{d\,x}{2}\right]+52920\,d\,x\,\mathrm{Cos}\left[c+\frac{3\,d\,x}{2}\right]+$$
$$52920\,d\,x\,\mathrm{Cos}\left[2\,c+\frac{3\,d\,x}{2}\right]+22680\,d\,x\,\mathrm{Cos}\left[2\,c+\frac{5\,d\,x}{2}\right]+22680\,d\,x\,\mathrm{Cos}\left[3\,c+\frac{5\,d\,x}{2}\right]+$$
$$5670\,d\,x\,\mathrm{Cos}\left[3\,c+\frac{7\,d\,x}{2}\right]+5670\,d\,x\,\mathrm{Cos}\left[4\,c+\frac{7\,d\,x}{2}\right]+630\,d\,x\,\mathrm{Cos}\left[4\,c+\frac{9\,d\,x}{2}\right]+$$
$$630\,d\,x\,\mathrm{Cos}\left[5\,c+\frac{9\,d\,x}{2}\right]-175014\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]+143010\,\mathrm{Sin}\left[c+\frac{d\,x}{2}\right]-$$
$$138726\,\mathrm{Sin}\left[c+\frac{3\,d\,x}{2}\right]+73290\,\mathrm{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-70389\,\mathrm{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+$$
$$20475\,\mathrm{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-21141\,\mathrm{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]+1575\,\mathrm{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]-$$
$$3091\,\mathrm{Sin}\left[4\,c+\frac{9\,d\,x}{2}\right]-567\,\mathrm{Sin}\left[5\,c+\frac{9\,d\,x}{2}\right]-63\,\mathrm{Sin}\left[5\,c+\frac{11\,d\,x}{2}\right]-63\,\mathrm{Sin}\left[6\,c+\frac{11\,d\,x}{2}\right]\Bigg)$$

Problem 94: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 3, 37 leaves, 2 steps):

$$\frac{2\,\sqrt{a}\,\mathrm{ArcTan}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{d}$$

Result (type 4, 331 leaves):

$$-\frac{1}{d}8\left(-3-2\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}}$$

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

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]}$$

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

Problem 95: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$\frac{\sqrt{a}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}+\frac{a\,\text{Sin}[c+d\,x]}{d\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 389 leaves):

$$\frac{1}{d}\text{Sec}\left[\frac{1}{2}(c+d x)\right]\sqrt{a(1+\text{Sec}[c+d x])}\left(-\frac{1}{2}\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{2}\text{Sin}\left[\frac{3}{2}(c+d x)\right]\right)-$$

$$\frac{1}{d}4\left(-3-2\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$

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

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sec}\left[\frac{1}{2}(c+d x)\right]}$$

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

Problem 96: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^2\sqrt{a+a\,\text{Sec}[c+d x]}\,dx$$

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

$$\frac{3\sqrt{a}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{4d}+\frac{3a\,\text{Sin}[c+d x]}{4d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a\,\text{Cos}[c+d x]\,\text{Sin}[c+d x]}{2d\sqrt{a+a\,\text{Sec}[c+d x]}}$$

Result (type 4, 401 leaves):

$$\frac{1}{d}\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{a\,(1+\text{Sec}[c+d\,x])}\left(-\frac{1}{8}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{4}\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]+\frac{1}{8}\,\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]\right)+$$

$$\frac{1}{d}3\left(2+\frac{3}{\sqrt{2}}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]}}$$

$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},\,-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2}$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]$$

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

Problem 97: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^3\,\sqrt{a+a\,\text{Sec}[c+d\,x]}\,dx$$

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

$$\frac{5\sqrt{a}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{8\,d}+\frac{5\,a\,\text{Sin}[c+d\,x]}{8\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{5\,a\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{12\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a\,\text{Cos}[c+d\,x]^2\,\text{Sin}[c+d\,x]}{3\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 417 leaves):

$$\frac{1}{d}\text{Sec}\left[\frac{1}{2}(c+d x)\right]\sqrt{a\,(1+\text{Sec}[c+d x])}$$
$$\left(-\frac{11}{48}\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\frac{1}{16}\text{Sin}\left[\frac{5}{2}(c+d x)\right]+\frac{1}{24}\text{Sin}\left[\frac{7}{2}(c+d x)\right]\right)+$$
$$\frac{1}{4 d}5\left(4+3\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]$$
$$\text{Sec}[c+d x]\sqrt{a\,(1+\text{Sec}[c+d x])}\ \sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2}$$

Problem 98: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^4\sqrt{a+a\,\text{Sec}[c+d x]}\,dx$$

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

$$\frac{35\sqrt{a}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{64 d}+\frac{35\,a\,\text{Sin}[c+d x]}{64 d\sqrt{a+a\,\text{Sec}[c+d x]}}+$$
$$\frac{35\,a\,\text{Cos}[c+d x]\,\text{Sin}[c+d x]}{96 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{7\,a\,\text{Cos}[c+d x]^2\,\text{Sin}[c+d x]}{24 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a\,\text{Cos}[c+d x]^3\,\text{Sin}[c+d x]}{4 d\sqrt{a+a\,\text{Sec}[c+d x]}}$$

Result (type 4, 431 leaves):

$$\frac{1}{d}\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{a\,(1+\text{Sec}[c+d\,x])}\,\left(-\frac{41}{384}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\frac{11}{48}\,\text{Sin}\left[\frac{3}{2}(c+d\,x)\right]+\frac{15}{128}\,\text{Sin}\left[\frac{5}{2}(c+d\,x)\right]+\frac{1}{48}\,\text{Sin}\left[\frac{7}{2}(c+d\,x)\right]+\frac{1}{64}\,\text{Sin}\left[\frac{9}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{\left(-64+48\sqrt{2}\right)d}\,35\,\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}}$$

$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},\,-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2}$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]$$

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

Problem 103: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 66 leaves, 4 steps):

$$\frac{2\,a^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}+\frac{2\,a^2\,\text{Tan}[c+d\,x]}{d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 374 leaves):

$$-\frac{1}{d}4\left(-3-2\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}}$$

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

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2}\ \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^3$$

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

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

Problem 104: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 65 leaves, 5 steps):

$$\frac{3\,a^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}+\frac{a^2\,\text{Sin}[c+d\,x]}{d\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 393 leaves):

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

$$\frac{1}{d}6\left(-3-2\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}}$$

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

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2}\ \text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^3$$

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

Problem 105: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 106 leaves, 5 steps):

$$\frac{7\,a^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{4\,d}+\frac{7\,a^2\,\text{Sin}[c+d\,x]}{4\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a^2\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{2\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 407 leaves):

$$\frac{1}{d}\mathrm{Cos}[c+d x]\,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^3 (a(1+\mathrm{Sec}[c+d x]))^{3/2}$$
$$\left(-\frac{5}{16}\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{3}{8}\mathrm{Sin}\left[\frac{3}{2}(c+d x)\right]+\frac{1}{16}\mathrm{Sin}\left[\frac{5}{2}(c+d x)\right]\right)+$$
$$\frac{1}{4 d}7\left(4+3\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\left(\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\mathrm{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\mathrm{EllipticPi}\left[-3+2\sqrt{2},-\mathrm{ArcSin}\left[\frac{\mathrm{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\mathrm{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\mathrm{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^3 (a(1+\mathrm{Sec}[c+d x]))^{3/2}\sqrt{3-2\sqrt{2}-\mathrm{Tan}\left[\frac{1}{4}(c+d x)\right]^2}$$

Problem 106: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d x]^3 (a+a\,\mathrm{Sec}[c+d x])^{3/2}\,dx$$

Optimal (type 3, 144 leaves, 6 steps):

$$\frac{11 a^{3/2}\mathrm{ArcTan}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d x]}{\sqrt{a+a\,\mathrm{Sec}[c+d x]}}\right]}{8 d}+\frac{11 a^2\mathrm{Sin}[c+d x]}{8 d\sqrt{a+a\,\mathrm{Sec}[c+d x]}}+$$
$$\frac{11 a^2\mathrm{Cos}[c+d x]\,\mathrm{Sin}[c+d x]}{12 d\sqrt{a+a\,\mathrm{Sec}[c+d x]}}+\frac{a^2\mathrm{Cos}[c+d x]^2\,\mathrm{Sin}[c+d x]}{3 d\sqrt{a+a\,\mathrm{Sec}[c+d x]}}$$

Result (type 4, 421 leaves):

$$\frac{1}{d}\text{Cos}[c+d x]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^3 (a (1+\text{Sec}[c+d x]))^{3/2}$$
$$\left(-\frac{17}{96}\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{7}{24}\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\frac{3}{32}\text{Sin}\left[\frac{5}{2}(c+d x)\right]+\frac{1}{48}\text{Sin}\left[\frac{7}{2}(c+d x)\right]\right)+$$
$$\frac{1}{8 d}11\left(4+3\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^3 (a (1+\text{Sec}[c+d x]))^{3/2}\sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2}$$

Problem 111: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 98 leaves, 5 steps):

$$\frac{2 a^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{d}+\frac{14 a^3\,\text{Tan}[c+d x]}{3 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{2 a^2\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Tan}[c+d x]}{3 d}$$

Result (type 4, 407 leaves):

$$\frac{1}{d}\text{Cos}[c+d\,x]^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5\left(a\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}$$

$$\left(\frac{4}{3}\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{6}\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-$$

$$\frac{1}{d}2\left(-3-2\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]}}$$

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

$$\text{Cos}[c+d\,x]\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$

$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$

$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2}\;\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5$$

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

Problem 112: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$\frac{5\,a^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}-\frac{a^3\,\text{Sin}[c+d\,x]}{d\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{2\,a^2\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}$$

Result (type 4, 399 leaves):

$$\frac{1}{d}\text{Cos}[c+d\,x]^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5$$
$$\left(a\,(1+\text{Sec}[c+d\,x])\right)^{5/2}\left(\frac{3}{8}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{8}\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)+$$
$$\frac{1}{d}5\left(2+\frac{3}{\sqrt{2}}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Cos}[c+d\,x]$$
$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},\,-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]}{\sqrt{3-2\sqrt{2}}}\right],\,17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2}$$
$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\left(a\,(1+\text{Sec}[c+d\,x])\right)^{5/2}\sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]^2}$$

Problem 113: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 3, 106 leaves, 4 steps):

$$\frac{19\,a^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{4\,d}+\frac{9\,a^3\,\text{Sin}[c+d\,x]}{4\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+$$
$$\frac{a^2\,\text{Cos}[c+d\,x]\,\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,d}$$

Result (type 4, 415 leaves):

$$\frac{1}{d}\text{Cos}[c+d x]^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}$$
$$\left(-\frac{9}{32}\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{5}{16}\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\frac{1}{32}\text{Sin}\left[\frac{5}{2}(c+d x)\right]\right)+$$
$$\frac{1}{8 d}19\left(4+3\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Cos}[c+d x]$$
$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}\Bigg/$$
$$\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}\sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2}\right)$$

Problem 114: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^3\left(a+a\,\text{Sec}[c+d x]\right)^{5/2}dx$$

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

$$\frac{25 a^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{8 d}+\frac{25 a^3\,\text{Sin}[c+d x]}{8 d\sqrt{a+a\,\text{Sec}[c+d x]}}+$$
$$\frac{13 a^3\,\text{Cos}[c+d x]\,\text{Sin}[c+d x]}{12 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a^2\,\text{Cos}[c+d x]^2\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{3 d}$$

Result (type 4, 429 leaves):

$$\frac{1}{d}\text{Cos}[c+d x]^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}$$
$$\left(-\frac{47}{192}\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\frac{5}{64}\text{Sin}\left[\frac{5}{2}(c+d x)\right]+\frac{1}{96}\text{Sin}\left[\frac{7}{2}(c+d x)\right]\right)+$$
$$\frac{1}{8 d}25\left(2+\frac{3}{\sqrt{2}}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Cos}[c+d x]$$
$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}\Bigg/$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}\sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2}$$

Problem 115: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^4\left(a+a\,\text{Sec}[c+d x]\right)^{5/2}dx$$

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

$$\frac{163\,a^{5/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{64 d}+\frac{163\,a^3\,\text{Sin}[c+d x]}{64 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{163\,a^3\,\text{Cos}[c+d x]\,\text{Sin}[c+d x]}{96 d\sqrt{a+a\,\text{Sec}[c+d x]}}+$$
$$\frac{17\,a^3\,\text{Cos}[c+d x]^2\,\text{Sin}[c+d x]}{24 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a^2\,\text{Cos}[c+d x]^3\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{4 d}$$

Result (type 4, 443 leaves):

$$\frac{1}{d}\text{Cos}[c+d x]^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5$$
$$\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}\left(-\frac{265\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]}{1536}+\frac{55}{192}\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\right.$$
$$\left.\frac{47}{512}\text{Sin}\left[\frac{5}{2}(c+d x)\right]+\frac{5}{192}\text{Sin}\left[\frac{7}{2}(c+d x)\right]+\frac{1}{256}\text{Sin}\left[\frac{9}{2}(c+d x)\right]\right)+$$
$$\frac{1}{64 d}163\left(2+\frac{3}{\sqrt{2}}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]^4\sqrt{\frac{7-5\sqrt{2}+\left(10-7\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]}{1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]}}$$
$$\left(1-\sqrt{2}+\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Cos}[c+d x]$$
$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]+\right.$$
$$\left.2\,\text{EllipticPi}\left[-3+2\sqrt{2},-\text{ArcSin}\left[\frac{\text{Tan}\left[\frac{1}{4}(c+d x)\right]}{\sqrt{3-2\sqrt{2}}}\right],17-12\sqrt{2}\right]\right)$$
$$\sqrt{\left(-1+\sqrt{2}-\left(-2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\sqrt{\left(-1-\sqrt{2}+\left(2+\sqrt{2}\right)\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right)\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2}$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{5/2}\sqrt{3-2\sqrt{2}-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2}$$

Problem 117: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 214 leaves):

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

Problem 118: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]\,\sqrt{a-a\,\text{Sec}[c+d\,x]}\;dx$$

Optimal (type 3, 65 leaves, 3 steps):

$$-\frac{\sqrt{a}\;\text{ArcTan}\left[\frac{\sqrt{a}\;\text{Tan}[c+d\,x]}{\sqrt{a-a\,\text{Sec}[c+d\,x]}}\right]}{d}+\frac{a\,\text{Sin}[c+d\,x]}{d\,\sqrt{a-a\,\text{Sec}[c+d\,x]}}$$

Result (type 3, 348 leaves):

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

Problem 141: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 48 leaves, 2 steps):

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

Result (type 3, 113 leaves):

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

Problem 142: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\sqrt{a-a\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 3, 87 leaves, 5 steps):

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

Result (type 3, 157 leaves):

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

Problem 143: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 383 leaves, 7 steps):

$$-\frac{9\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{40\,d}+\frac{57\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{80\,d\,(1+\mathrm{Sec}[c+d\,x])}+\frac{3\,(a+a\,\mathrm{Sec}[c+d\,x])^{5/3}\,\mathrm{Tan}[c+d\,x]}{8\,a\,d}-\left(19\times 3^{3/4}\,\mathrm{EllipticF}\left[\mathrm{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$
$$(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)$$
$$\left.\sqrt{\frac{2^{2/3}+2^{1/3}(1+\mathrm{Sec}[c+d\,x])^{1/3}+(1+\mathrm{Sec}[c+d\,x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\,\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(80\times 2^{1/3}\,d\right.$$
$$\left.(1-\mathrm{Sec}[c+d\,x])\,(1+\mathrm{Sec}[c+d\,x])\sqrt{-\frac{(1+\mathrm{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 105 leaves):

$$\frac{1}{80\,d}(a\,(1+\mathrm{Sec}[c+d\,x]))^{2/3}$$
$$\left(57\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+19\times 2^{2/3}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\left(\frac{1}{1+\mathrm{Sec}[c+d\,x]}\right)^{2/3}\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+6\,(2+5\,\mathrm{Sec}[c+d\,x])\,\mathrm{Tan}[c+d\,x]\right)$$

Problem 144: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 353 leaves, 6 steps):

$$\frac{3\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{5\,d}+\frac{3\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{5\,d\,(1+\mathrm{Sec}[c+d\,x])}-\left(3^{3/4}\,\mathrm{EllipticF}\left[\mathrm{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$
$$(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)$$
$$\left.\sqrt{\frac{2^{2/3}+2^{1/3}(1+\mathrm{Sec}[c+d\,x])^{1/3}+(1+\mathrm{Sec}[c+d\,x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(5\times 2^{1/3}\,d\right.$$
$$\left.(1-\mathrm{Sec}[c+d\,x])\,(1+\mathrm{Sec}[c+d\,x])\,\sqrt{-\frac{(1+\mathrm{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 97 leaves):

$$\frac{1}{5\,d}\,(a\,(1+\mathrm{Sec}[c+d\,x]))^{2/3}$$
$$\left(\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\right.$$
$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+3\left(\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Tan}[c+d\,x]\right)\right)$$

Problem 145: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 326 leaves, 5 steps):

$$\frac{3\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{2\,d\,(1+\mathrm{Sec}[c+d\,x])}-\left(3^{3/4}\,\mathrm{EllipticF}\left[\mathrm{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$
$$(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)$$
$$\left.\sqrt{\frac{2^{2/3}+2^{1/3}(1+\mathrm{Sec}[c+d\,x])^{1/3}+(1+\mathrm{Sec}[c+d\,x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(2\times 2^{1/3}\,d\right.$$
$$\left.(1-\mathrm{Sec}[c+d\,x])\,(1+\mathrm{Sec}[c+d\,x])\,\sqrt{-\frac{(1+\mathrm{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 75 leaves):

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

Problem 146: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 77 leaves, 3 steps):

$$\left(3\,\sqrt{2}\,\text{AppellF1}\left[\frac{7}{6},\,\frac{1}{2},\,1,\,\frac{13}{6},\,\frac{1}{2}\,(1+\text{Sec}[c+d\,x]),\,1+\text{Sec}[c+d\,x]\right]\,(a+a\,\text{Sec}[c+d\,x])^{2/3}\,\text{Tan}[c+d\,x]\right)\Big/\left(7\,d\,\sqrt{1-\text{Sec}[c+d\,x]}\right)$$

Result (type 6, 1575 leaves):

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,(1+\text{Sec}[c+d\,x])^{2/3}\,\left(a\,(1+\text{Sec}[c+d\,x])\right)^{2/3}\,\text{Sin}[c+d\,x]\right)\Big/$$
$$\Bigg(d\,\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$
$$2\,\left(-3\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$
$$\left.2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$
$$\Bigg(\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]$$
$$\text{Cos}[c+d\,x]\,\left(1+\text{Sec}[c+d\,x]\right)^{2/3}\Bigg)\Big/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$
$$2\,\left(-3\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$
$$\left.2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)+$$
$$\Bigg(9\,(1+\text{Sec}[c+d\,x])^{2/3}\,\text{Sin}[c+d\,x]\,\Bigg(-\frac{1}{3}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\right.$$
$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Big/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$
$$2\,\left(-3\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right](1+\text{Sec}[c+d x])^{2/3}$$
$$\text{Sin}[c+d x]\Bigg(2\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+9\Bigg(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\right.$$
$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg(-3\Bigg(-\frac{6}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+\right.\right.$$
$$\left.\left.d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$
$$2\Bigg(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$2\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\right.$$
$$\left.\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2+$$
$$\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}[c+d x]^2\Bigg)\Bigg/$$
$$\Bigg((1+\text{Sec}[c+d x])^{1/3}\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$2\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\right.$$
$$\left.\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg)$$

Problem 147: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 77 leaves, 3 steps):

$$-\left(\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{7}{6},\frac{1}{2},2,\frac{13}{6},\frac{1}{2}\,(1+\text{Sec}[c+d\,x]),1+\text{Sec}[c+d\,x]\right]\right.\right.$$
$$\left.\left.(a+a\,\text{Sec}[c+d\,x])^{2/3}\,\text{Tan}[c+d\,x]\right)\Big/\left(7\,d\,\sqrt{1-\text{Sec}[c+d\,x]}\right)\right)$$

Result (type 6, 4011 leaves):

$$\left(\left((1+\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]\right)^{2/3}\left(a\,(1+\text{Sec}[c+d\,x])\right)^{2/3}\left(\text{Sin}[c+d\,x]-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/$$
$$\left(d\,(1+\text{Sec}[c+d\,x])^{2/3}\right)-$$
$$\left(2^{2/3}\,\text{Cos}[c+d\,x]\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}\left(a\,(1+\text{Sec}[c+d\,x])\right)^{2/3}\left(\frac{1}{6}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$
$$\left.(1+\text{Sec}[c+d\,x])^{2/3}+\frac{1}{3}\,\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2(1+\text{Sec}[c+d\,x])^{2/3}\right)$$
$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$
$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\left.\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\left.\left.\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\Big/$$
$$\left(3\,d\,(1+\text{Sec}[c+d\,x])^{2/3}\left(-\frac{1}{3\times 2^{1/3}}\,\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}$$
$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\frac{2}{9}\left(-3\,\text{AppellF1}\left[\right.\right.\right.$$
$$\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},$$
$$\left.\left.\left.\left.\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$

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

$$\frac{1}{3}\times 2^{2/3}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{5/3}\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

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

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

$$\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\Big[$$

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

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

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

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

$$\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg)-$$

$$\frac{1}{3}\times 2^{2/3}\,\text{Cos}[c+d x]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{5/3}\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

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

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\Big[$$

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

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

$$\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\Big[$$

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

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

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Big/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

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

$$\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+$$

$$\Bigg(5\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg(-\frac{3}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

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

$$\Bigg(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\left(-3\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+$$

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

$$\Bigg(-\frac{1}{3}\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\left(-3\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{9}\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg(-3\left(-\frac{6}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},3,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+2\left(-\frac{3}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\mathrm{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\frac{2}{9}\left(-3\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2-$$

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

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

$$2\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+$$
$$15\,\Big(-\frac{3}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{2}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)+$$
$$2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\Big(-3\,\Big(-\frac{10}{7}\,\text{AppellF1}\Big[\frac{7}{2},\frac{2}{3},3,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+$$
$$\frac{10}{21}\,\text{AppellF1}\Big[\frac{7}{2},\frac{5}{3},2,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)+2\,\Big(-\frac{5}{7}\,\text{AppellF1}\Big[\frac{7}{2},\frac{5}{3},2,$$
$$\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{25}{21}\,\text{AppellF1}\Big[\frac{7}{2},\frac{8}{3},1,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$2\,\Big(-3\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+2\,\text{AppellF1}\Big[$$
$$\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)^2\Big)-$$
$$\frac{5}{9}\times 2^{2/3}\,\text{Cos}[c+d\,x]\,\Big(\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{2/3}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]$$
$$\Big(-\Big(\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\Big/$$
$$\Big(\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\frac{2}{9}\,\Big(-3\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+2\,\text{AppellF1}\Big[$$
$$\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big)+$$
$$\Big(5\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big/$$
$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$2\,\Big(-3\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+2\,\text{AppellF1}\Big[$$

$$\left.\left.\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)$$
$$\left(-\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\right.$$
$$\left.\left.\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\right)\right)$$

Problem 148: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 413 leaves, 8 steps):

$$\frac{147\,a\,(a+a\,\text{Sec}[c+d\,x])^{2/3}\,\text{Tan}[c+d\,x]}{440\,d}+\frac{1029\,a\,(a+a\,\text{Sec}[c+d\,x])^{2/3}\,\text{Tan}[c+d\,x]}{880\,d\,(1+\text{Sec}[c+d\,x])}-$$
$$\frac{9\,(a+a\,\text{Sec}[c+d\,x])^{5/3}\,\text{Tan}[c+d\,x]}{88\,d}+\frac{3\,(a+a\,\text{Sec}[c+d\,x])^{8/3}\,\text{Tan}[c+d\,x]}{11\,a\,d}-$$
$$\left(343\times 3^{3/4}\,a\,\text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\text{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d\,x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$
$$(a+a\,\text{Sec}[c+d\,x])^{2/3}\left(2^{1/3}-(1+\text{Sec}[c+d\,x])^{1/3}\right)$$
$$\left.\sqrt{\frac{2^{2/3}+2^{1/3}(1+\text{Sec}[c+d\,x])^{1/3}+(1+\text{Sec}[c+d\,x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d\,x])^{1/3}\right)^2}}\,\text{Tan}[c+d\,x]\right)\Bigg/\left(880\times 2^{1/3}\,d\right.$$
$$\left.(1-\text{Sec}[c+d\,x])\,(1+\text{Sec}[c+d\,x])\sqrt{-\frac{(1+\text{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 116 leaves):

$$\frac{1}{880\,d}a\,(a\,(1+\text{Sec}[c+d\,x]))^{2/3}$$
$$\left(1029\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+343\times 2^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\left(\frac{1}{1+\text{Sec}[c+d\,x]}\right)^{2/3}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+6\left(74+65\,\text{Sec}[c+d\,x]+40\,\text{Sec}[c+d\,x]^2\right)\text{Tan}[c+d\,x]\right)$$

Problem 149: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 383 leaves, 7 steps):

$$\frac{3\,a\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{2/3}\,\text{Tan}[c+d\,x]}{8\,d}+$$
$$\frac{21\,a\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{2/3}\,\text{Tan}[c+d\,x]}{16\,d\,\left(1+\text{Sec}[c+d\,x]\right)}+\frac{3\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{5/3}\,\text{Tan}[c+d\,x]}{8\,d}-$$
$$\left(7\times 3^{3/4}\,a\,\text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}\right],\frac{1}{4}\,\left(2+\sqrt{3}\right)\right]\right.$$
$$\left(a+a\,\text{Sec}[c+d\,x]\right)^{2/3}\,\left(2^{1/3}-\left(1+\text{Sec}[c+d\,x]\right)^{1/3}\right)$$
$$\left.\sqrt{\frac{2^{2/3}+2^{1/3}\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}+\left(1+\text{Sec}[c+d\,x]\right)^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\,\text{Tan}[c+d\,x]\right)\Big/\left(16\times 2^{1/3}\,d\right.$$
$$\left.\left(1-\text{Sec}[c+d\,x]\right)\,\left(1+\text{Sec}[c+d\,x]\right)\,\sqrt{-\frac{\left(1+\text{Sec}[c+d\,x]\right)^{1/3}\,\left(2^{1/3}-\left(1+\text{Sec}[c+d\,x]\right)^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\right)$$

Result (type 5, 104 leaves):

$$\frac{1}{16\,d}a\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{2/3}$$
$$\left(21\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+7\times 2^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^{2}\right]\right.$$
$$\left.\left(\frac{1}{1+\text{Sec}[c+d\,x]}\right)^{2/3}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+6\,\left(2+\text{Sec}[c+d\,x]\right)\,\text{Tan}[c+d\,x]\right)$$

Problem 150: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 356 leaves, 6 steps):

$$\frac{3\,a\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{5\,d}+\frac{21\,a\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{10\,d\,(1+\mathrm{Sec}[c+d\,x])}-\left(7\times 3^{3/4}\,a\,\mathrm{EllipticF}\left[\mathrm{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right](a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{2^{2/3}+2^{1/3}(1+\mathrm{Sec}[c+d\,x])^{1/3}+(1+\mathrm{Sec}[c+d\,x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\,\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(10\times 2^{1/3}\,d\,(1-\mathrm{Sec}[c+d\,x])(1+\mathrm{Sec}[c+d\,x])\sqrt{-\frac{(1+\mathrm{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 96 leaves):

$$\frac{1}{10\,d}a\,(a\,(1+\mathrm{Sec}[c+d\,x]))^{2/3}\left(21\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+7\times 2^{2/3}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(\frac{1}{1+\mathrm{Sec}[c+d\,x]}\right)^{2/3}\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+6\,\mathrm{Tan}[c+d\,x]\right)$$

Problem 151: Result more than twice size of optimal antiderivative.

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

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

$$\left(3\sqrt{2}\,a\,\mathrm{AppellF1}\left[\frac{13}{6},\frac{1}{2},1,\frac{19}{6},\frac{1}{2}(1+\mathrm{Sec}[c+d\,x]),1+\mathrm{Sec}[c+d\,x]\right](1+\mathrm{Sec}[c+d\,x])(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(13\,d\sqrt{1-\mathrm{Sec}[c+d\,x]}\right)$$

Result (type 6, 3988 leaves):

$$\left(3\left((1+\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}[c+d\,x]\right)^{2/3}(a\,(1+\mathrm{Sec}[c+d\,x]))^{5/3}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg/\left(2\,d\,(1+\mathrm{Sec}[c+d\,x])^{5/3}\right)+$$

$$\left(5\,\mathrm{Cos}[c+d\,x]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Sec}[c+d\,x]\right)^{5/3}(a\,(1+\mathrm{Sec}[c+d\,x]))^{5/3}\left(\frac{3}{4}\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(1+\mathrm{Sec}[c+d\,x])^{2/3}+\frac{1}{2}\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2(1+\mathrm{Sec}[c+d\,x])^{2/3}\right)\right.$$

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

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+$$

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

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

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

$$\Bigg(2^{1/3}\,d\,(1+\text{Sec}[c+d\,x])^{5/3}\Bigg(\frac{1}{2\times 2^{1/3}}5\,\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}$$

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

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+$$

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

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

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

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

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+$$

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

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\frac{1}{2^{1/3}}5\,\text{Cos}[c+d\,x]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

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

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/$$

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+$$

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

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+$$

$$\Bigg(\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)-$$

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

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

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}$$

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

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

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\left(-3\left(-\frac{6}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+2\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\frac{2}{9}\left(-3\right.\right.$$

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

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

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

$$\left(2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.\right.$$

$$\left.2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+15\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

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

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\left(-3\left(-\frac{10}{7}\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},3,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{10}{21}\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},2,\right.$$

$$\frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big) + 2\left(-\frac{5}{7}\text{AppellF1}\left[\frac{7}{2}, \frac{5}{3}, 2, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] +$$
$$\frac{25}{21}\text{AppellF1}\left[\frac{7}{2}, \frac{8}{3}, 1, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big) \Big/$$
$$\Big(15\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 2\Big(-3\,\text{AppellF1}\Big[$$
$$\frac{5}{2}, \frac{2}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big] + 2\,\text{AppellF1}\Big[\frac{5}{2}, \frac{5}{3},$$
$$1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2\Big) +$$
$$\frac{1}{3\times 2^{1/3}} 25\,\text{Cos}[c+d x] \left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \text{Sec}[c+d x]\right)^{2/3} \text{Tan}\left[\frac{1}{2}(c+d x)\right]$$
$$\Big(\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \Big/$$
$$\Big(\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$
$$\frac{2}{9}\Big(-3\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 2\,\text{AppellF1}\Big[$$
$$\frac{3}{2}, \frac{5}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) +$$
$$\Big(\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) \Big/$$
$$\Big(15\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$
$$2\Big(-3\,\text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 2\,\text{AppellF1}\Big[$$
$$\frac{5}{2}, \frac{5}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big)$$
$$\Big(-\text{Cos}\left[\frac{1}{2}(c+d x)\right] \text{Sec}[c+d x] \text{Sin}\left[\frac{1}{2}(c+d x)\right] + \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\text{Sec}[c+d x]\,\text{Tan}[c+d x]\Big)\Big)\Big)$$

Problem 152: Result more than twice size of optimal antiderivative.

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

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

$$-\left(\left(3\sqrt{2}\ a\ \text{AppellF1}\left[\frac{13}{6},\frac{1}{2},2,\frac{19}{6},\frac{1}{2}\left(1+\text{Sec}[c+d\,x]\right),1+\text{Sec}[c+d\,x]\right]\left(1+\text{Sec}[c+d\,x]\right)\left(a+a\,\text{Sec}[c+d\,x]\right)^{2/3}\text{Tan}[c+d\,x]\right)\Big/\left(13\,d\sqrt{1-\text{Sec}[c+d\,x]}\right)\right)$$

Result (type 6, 4011 leaves):

$$\left(\left((1+\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]\right)^{2/3}\left(a\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/3}\left(\text{Sin}[c+d\,x]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(d\left(1+\text{Sec}[c+d\,x]\right)^{5/3}\right)-$$
$$\left(2^{2/3}\,\text{Cos}[c+d\,x]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}\left(a\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/3}\left(\frac{2}{3}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right.\right.$$
$$\left.\left(1+\text{Sec}[c+d\,x]\right)^{2/3}+\frac{5}{6}\,\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Sec}[c+d\,x]\right)^{2/3}\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(-\left(\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\left.\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Big/$$
$$\left(3\,d\left(1+\text{Sec}[c+d\,x]\right)^{5/3}\left(-\frac{1}{3\times 2^{1/3}}\,\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/3}$$
$$\left(-\left(\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\frac{2}{9}\left(-3\,\text{AppellF1}\left[\right.\right.\right.$$
$$\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},$$
$$\left.\left.\left.\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$

$$\frac{5}{2}, \frac{5}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)\Big) +$$

$$\frac{1}{3} \times 2^{2/3} \left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]^2 \text{Sec}[c+dx]\right)^{5/3} \text{Sin}[c+dx]\, \text{Tan}\left[\frac{1}{2}(c+dx)\right]$$

$$\Bigg(-\Bigg(\Bigg(9\,\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg) \Big/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] +$$

$$\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] + 2\,\text{AppellF1}\Big[$$

$$\frac{3}{2}, \frac{5}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Bigg) \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg) +$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg) \Big/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] +$$

$$2\Bigg(-3\,\text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] + 2\,\text{AppellF1}\Big[$$

$$\frac{5}{2}, \frac{5}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Bigg) \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg) -$$

$$\frac{1}{3} \times 2^{2/3} \text{Cos}[c+dx] \left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]^2 \text{Sec}[c+dx]\right)^{5/3} \text{Tan}\left[\frac{1}{2}(c+dx)\right]$$

$$\Bigg(-\Bigg(\Bigg(9\Bigg(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2 \text{Tan}\left[\frac{1}{2}(c+dx)\right] + \frac{2}{9}\text{AppellF1}\Big[\frac{3}{2}, \frac{5}{3}, 1, \frac{5}{2}, \text{Tan}\Big[$$

$$\frac{1}{2}(c+dx)\Big]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big] \text{Sec}\left[\frac{1}{2}(c+dx)\right]^2 \text{Tan}\left[\frac{1}{2}(c+dx)\right]\Bigg)\Bigg) \Big/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] +$$

$$\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] + 2\,\text{AppellF1}\Big[$$

$$\frac{3}{2}, \frac{5}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Bigg) \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg) +$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2 \text{Tan}\left[\frac{1}{2}(c+dx)\right]\Bigg) \Big/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] +$$

$$2\Bigg(-3\,\text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right] + 2\,\text{AppellF1}\Big[$$

$$\frac{5}{2}, \frac{5}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Bigg) \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg) +$$

$$\Bigg(5\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2 \Bigg(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+dx)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\Bigg(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\Bigg(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{9}\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg(-3\Bigg(-\frac{6}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+2\Bigg(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2-$$

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

$$\Bigg(2\Bigg(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

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

$$15\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-3\left(-\frac{10}{7}\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},3,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{10}{21}\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},2,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\left(-\frac{5}{7}\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},2,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{25}{21}\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},1,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big)\Big)\Big)\Big/$$

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Big)-$$

$$\frac{5}{9}\times 2^{2/3}\,\text{Cos}[c+d\,x]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{2/3}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(-\left(\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$

$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big)+$$

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

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.\right.$$

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

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

$$\text{Sec}[c+d x]\,\text{Tan}[c+d x]\Big)\Big)\Big)$$

Problem 153: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 371 leaves, 7 steps):

$$\frac{99\,\text{Tan}[c+d x]}{80\,d\,(a+a\,\text{Sec}[c+d x])^{1/3}}+\frac{3\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]}{8\,d\,(a+a\,\text{Sec}[c+d x])^{1/3}}-\frac{3\,(a+a\,\text{Sec}[c+d x])^{2/3}\,\text{Tan}[c+d x]}{40\,a\,d}+$$

$$\Bigg(37\times 3^{3/4}\,\text{EllipticF}\Big[\text{ArcCos}\Big[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}\Big], \frac{1}{4}\left(2+\sqrt{3}\right)\Big]$$

$$\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)\sqrt{\frac{2^{2/3}+2^{1/3}(1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}\right)^2}}$$

$$\text{Tan}[c+d x]\Bigg)\Bigg/\Bigg(80\times 2^{1/3}\,d\,(1-\text{Sec}[c+d x])\,(a+a\,\text{Sec}[c+d x])^{1/3}$$

$$\sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}\right)^2}}\Bigg)$$

Result (type 5, 108 leaves):

$$\frac{1}{80\,a\,d}(a\,(1+\text{Sec}[c+d x]))^{2/3}$$

$$\Big(129\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-37\times 2^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

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

Problem 154: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 336 leaves, 6 steps):

$$-\frac{9\,\mathrm{Tan}[c+d\,x]}{10\,d\,(a+a\,\mathrm{Sec}[c+d\,x])^{1/3}}+\frac{3\,(a+a\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{5\,a\,d}-$$

$$\Bigg(7\times 3^{3/4}\,\mathrm{EllipticF}\Big[\mathrm{ArcCos}\Big[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}}\Big],\ \frac{1}{4}\left(2+\sqrt{3}\right)\Big]$$

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

$$\mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\Bigg(10\times 2^{1/3}\,d\,(1-\mathrm{Sec}[c+d\,x])\,(a+a\,\mathrm{Sec}[c+d\,x])^{1/3}$$

$$\sqrt{-\frac{(1+\mathrm{Sec}[c+d\,x])^{1/3}\left(2^{1/3}-(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\Bigg)$$

Result (type 5, 98 leaves) :

$$\frac{1}{10\,a\,d}\,(a\,(1+\mathrm{Sec}[c+d\,x]))^{2/3}$$

$$\Bigg(-9\,\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+7\times 2^{2/3}\,\mathrm{Hypergeometric2F1}\Big[\frac{1}{2},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$

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

Problem 155: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 306 leaves, 5 steps) :

$$\frac{3\,\text{Tan}[c+d\,x]}{2\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{1/3}}+\left(3^{3/4}\,\text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)\,\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}\right],\,\frac{1}{4}\,\left(2+\sqrt{3}\right)\right]\right.$$

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

$$\left.\text{Tan}[c+d\,x]\right)\Bigg/\left(2\times 2^{1/3}\,d\,\left(1-\text{Sec}[c+d\,x]\right)\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{1/3}\right.$$

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

Result (type 5, 78 leaves):

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

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

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]$$

Problem 156: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 276 leaves, 4 steps):

$$-\left(\left(3^{3/4}\,\text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)\left(1+\text{Sec}[c+d\,x]\right)^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.\right.$$

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

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

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

Result (type 5, 76 leaves) :

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

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

Problem 157: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 75 leaves, 3 steps) :

$$\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{6},\frac{1}{2},1,\frac{7}{6},\frac{1}{2}\left(1+\text{Sec}[c+d\,x]\right),1+\text{Sec}[c+d\,x]\right]\text{Tan}[c+d\,x]\right)\Big/$$

$$\left(d\,\sqrt{1-\text{Sec}[c+d\,x]}\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{1/3}\right)$$

Result (type 6, 733 leaves) :

$$\left(45\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$\text{Cos}[c+dx]^2\,(1+\text{Cos}[c+dx])\,\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\,(a\,(1+\text{Sec}[c+dx]))^{2/3}$$
$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]\left(9\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]-\right.$$
$$2\left(3\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left.\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)\Big/$$
$$\left(a\,d\,\left(135\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]^2\right.\right.$$
$$(1+2\,\text{Cos}[c+dx]+3\,\text{Cos}[2\,(c+dx)])+$$
$$\frac{3}{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$(8+15\,\text{Cos}[c+dx]+4\,\text{Cos}[2\,(c+dx)]-3\,\text{Cos}[3\,(c+dx)])+$$
$$5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$(8+15\,\text{Cos}[c+dx]+4\,\text{Cos}[2\,(c+dx)]-3\,\text{Cos}[3\,(c+dx)])-$$
$$96\left(9\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{3},3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]-$$
$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$
$$\left.\text{Cos}[c+dx]\,\text{Sin}\left[\frac{1}{2}(c+dx)\right]^2\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2+$$
$$40\left(3\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\right.\right.$$
$$\left.\left.\left.\left.\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)^2\text{Cos}[c+dx]\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^4\right)\right)$$

Problem 158: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+dx]}{(a+a\,\text{Sec}[c+dx])^{1/3}}\,dx$$

Optimal (type 6, 75 leaves, 3 steps):

$$-\left(\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{6},\frac{1}{2},2,\frac{7}{6},\frac{1}{2}(1+\text{Sec}[c+dx]),1+\text{Sec}[c+dx]\right]\text{Tan}[c+dx]\right)\Big/\left(d\sqrt{1-\text{Sec}[c+dx]}\,(a+a\,\text{Sec}[c+dx])^{1/3}\right)\right)$$

Result (type 6, 1986 leaves):

$$\left(\left(\left(1+\text{Cos}[c+d x]\right)\text{Sec}[c+d x]\right)^{2/3}\left(1+\text{Sec}[c+d x]\right)^{1/3}\left(\text{Sin}[c+d x]-\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$
$$\left(d\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{1/3}\right)+$$
$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\left(1+\text{Sec}[c+d x]\right)\right.$$
$$\left(\frac{1}{6}\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Sec}[c+d x]\right)^{2/3}-\frac{1}{6}\text{Cos}[c+d x]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.$$
$$\left.\left.\left(1+\text{Sec}[c+d x]\right)^{2/3}\right)\text{Sin}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/$$
$$\left(d\left(a\left(1+\text{Sec}[c+d x]\right)\right)^{1/3}\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.\right.$$
$$6\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left.\left.2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$
$$\left(\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.\right.$$
$$\left.\left(1+\text{Sec}[c+d x]\right)^{2/3}\text{Sin}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$
$$\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$6\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$
$$\left.\left(1+\text{Sec}[c+d x]\right)^{2/3}\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$
$$\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$6\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+$$
$$\left(10\left(1+\text{Sec}[c+d x]\right)^{2/3}\text{Sin}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.$$
$$\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$
$$\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$6\left(-3\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\,\text{AppellF1}\left[\right.\right.$$

$$\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)-$$

$$\Big(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$(1+\mathrm{Sec}[c+dx])^{2/3}\,\mathrm{Sin}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)$$
$$\Big(6\Big(-3\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+2\,\mathrm{AppellF1}\Big[\frac{5}{2},$$
$$\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\Big[\frac{1}{2}$$
$$(c+dx)\Big]+45\Big(-\frac{3}{5}\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{2}{5}\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)+6\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\Big(-3\Big(-\frac{10}{7}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{2}{3},3,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{10}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{5}{3},2,\frac{9}{2},$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)+$$
$$2\Big(-\frac{5}{7}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{5}{3},2,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{25}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{8}{3},1,\frac{9}{2},\mathrm{Tan}\Big[\frac{1}{2}(c+$$
$$dx)\Big]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(45\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$
$$6\Big(-3\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+2\,\mathrm{AppellF1}\Big[$$
$$\frac{5}{2},\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)^2+$$

$$\Big(20\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}[c+dx]$$
$$\mathrm{Sin}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\mathrm{Tan}[c+dx]\Big)\Big/$$
$$\Big(3\,(1+\mathrm{Sec}[c+dx])^{1/3}\Big(45\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$
$$6\Big(-3\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+2\,\mathrm{AppellF1}\Big[\frac{5}{2},$$
$$\frac{5}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)\Big)\Big)$$

Problem 159: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Sec}[c+d x]^4}{(a+a \text{Sec}[c+d x])^{5/3}} \, dx$$

Optimal (type 4, 766 leaves, 9 steps):

$$-\frac{33 \text{Tan}[c+d x]}{28 d (a+a \text{Sec}[c+d x])^{5/3}}+\frac{3 \text{Sec}[c+d x]^2 \text{Tan}[c+d x]}{4 d (a+a \text{Sec}[c+d x])^{5/3}}+\frac{135 \text{Tan}[c+d x]}{14 a d (a+a \text{Sec}[c+d x])^{2/3}}+$$

$$\frac{375 \left(1+\sqrt{3}\right) (a+a \text{Sec}[c+d x])^{1/3} \text{Tan}[c+d x]}{28 a^2 d (1+\text{Sec}[c+d x])^{2/3} \left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)}-$$

$$\left(375 \times 3^{1/4} \text{EllipticE}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}\right], \frac{1}{4} \left(2+\sqrt{3}\right)\right]\right.$$

$$(a+a \text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)$$

$$\left.\sqrt{\frac{2^{2/3}+2^{1/3} (1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}} \text{Tan}[c+d x]\right) \Bigg/ \left(14 \times 2^{2/3} a^2 d\right.$$

$$\left.(1-\text{Sec}[c+d x]) (1+\text{Sec}[c+d x])^{2/3} \sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)-$$

$$\left(125 \times 3^{3/4} \left(1-\sqrt{3}\right) \text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}\right], \frac{1}{4} \left(2+\sqrt{3}\right)\right]\right.$$

$$(a+a \text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)$$

$$\left.\sqrt{\frac{2^{2/3}+2^{1/3} (1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}} \text{Tan}[c+d x]\right) \Bigg/ \left(28 \times 2^{2/3} a^2 d\right.$$

$$\left.(1-\text{Sec}[c+d x]) (1+\text{Sec}[c+d x])^{2/3} \sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)$$

Result (type 5, 137 leaves):

$$\left(\frac{3}{2} \text{Sec}\left[\frac{1}{2} (c+d x)\right] \text{Sec}[c+d x]^2 \left(3 \text{Sin}\left[\frac{1}{2} (c+d x)\right]-12 \text{Sin}\left[\frac{3}{2} (c+d x)\right]-23 \text{Sin}\left[\frac{5}{2} (c+d x)\right]\right)+\right.$$

$$125 \text{Hypergeometric2F1}\left[\frac{1}{3}, \frac{1}{2}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right]$$

$$\left.\left(\text{Cos}[c+d x] \text{Sec}\left[\frac{1}{2} (c+d x)\right]^2\right)^{1/3} \text{Tan}[c+d x]\right) \Bigg/ \left(28 a d (a (1+\text{Sec}[c+d x]))^{2/3}\right)$$

Problem 160: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 731 leaves, 8 steps):

$$\frac{3\,\text{Tan}[c+d x]}{7 d\,(a+a\,\text{Sec}[c+d x])^{5/3}}-\frac{36\,\text{Tan}[c+d x]}{7 a d\,(a+a\,\text{Sec}[c+d x])^{2/3}}-\frac{57\left(1+\sqrt{3}\right)(a+a\,\text{Sec}[c+d x])^{1/3}\,\text{Tan}[c+d x]}{7 a^2 d\,(1+\text{Sec}[c+d x])^{2/3}\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}\right)}+$$

$$\left(57\times 2^{1/3}\times 3^{1/4}\,\text{EllipticE}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$

$$(a+a\,\text{Sec}[c+d x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)$$

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

$$\left.(1-\text{Sec}[c+d x])(1+\text{Sec}[c+d x])^{2/3}\sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)+$$

$$\left(19\times 3^{3/4}\left(1-\sqrt{3}\right)\text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}}\right],\frac{1}{4}\left(2+\sqrt{3}\right)\right]\right.$$

$$(a+a\,\text{Sec}[c+d x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)$$

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

$$\left.(1-\text{Sec}[c+d x])(1+\text{Sec}[c+d x])^{2/3}\sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3}\left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right)(1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)$$

Result (type 5, 135 leaves):

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

$$38\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\left(\text{Cos}[c+d x]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(14 a d\left(a\,(1+\text{Sec}[c+d x])\right)^{2/3}\right)$$

Problem 161: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 731 leaves, 8 steps):

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

$$\left(15\times 2^{1/3}\times 3^{1/4} \,\text{EllipticE}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}\right], \frac{1}{4}\left(2+\sqrt{3}\right)\right] (1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right) \sqrt{\frac{2^{2/3}+2^{1/3} (1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}} \,\text{Tan}[c+d x]\right) \Bigg/ \left(7 a d (1-\text{Sec}[c+d x]) (a+a \,\text{Sec}[c+d x])^{2/3} \sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)-$$

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

Result (type 5, 86 leaves):

$$\left(-3 \,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+5\times 2^{1/3} \,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \left(\frac{1}{1+\text{Sec}[c+d x]}\right)^{1/3} \text{Tan}[c+d x]\right) \Big/ \left(7 a d (a (1+\text{Sec}[c+d x]))^{2/3}\right)$$

Problem 162: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 744 leaves, 8 steps):

$$\frac{6 \text{Tan}[c+d x]}{7 a d (a+a \text{Sec}[c+d x])^{2/3}}+\frac{3 \text{Tan}[c+d x]}{7 a d (1+\text{Sec}[c+d x]) (a+a \text{Sec}[c+d x])^{2/3}}+\frac{6 \left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3} \text{Tan}[c+d x]}{7 a d (a+a \text{Sec}[c+d x])^{2/3} \left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)}-\left(6\times 2^{1/3}\times 3^{1/4} \text{EllipticE}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}\right], \frac{1}{4} \left(2+\sqrt{3}\right)\right] (1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right) \sqrt{\frac{2^{2/3}+2^{1/3} (1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}} \text{Tan}[c+d x]\right) \Big/ \left(7 a d (1-\text{Sec}[c+d x]) (a+a \text{Sec}[c+d x])^{2/3} \sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)-\left(2^{1/3}\times 3^{3/4} \left(1-\sqrt{3}\right) \text{EllipticF}\left[\text{ArcCos}\left[\frac{2^{1/3}-\left(1-\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}{2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}}\right], \frac{1}{4} \left(2+\sqrt{3}\right)\right] (1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right) \sqrt{\frac{2^{2/3}+2^{1/3} (1+\text{Sec}[c+d x])^{1/3}+(1+\text{Sec}[c+d x])^{2/3}}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}} \text{Tan}[c+d x]\right) \Big/ \left(7 a d (1-\text{Sec}[c+d x]) (a+a \text{Sec}[c+d x])^{2/3} \sqrt{-\frac{(1+\text{Sec}[c+d x])^{1/3} \left(2^{1/3}-(1+\text{Sec}[c+d x])^{1/3}\right)}{\left(2^{1/3}-\left(1+\sqrt{3}\right) (1+\text{Sec}[c+d x])^{1/3}\right)^2}}\right)$$

Result (type 5, 111 leaves):

$$\left(\left(3 \text{Cos}[c+d x]+4\times 2^{1/3} \text{Cos}\left[\frac{1}{2} (c+d x)\right]^2 \left(\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}\right)^{1/3} \text{Hypergeometric2F1}\left[\frac{1}{3}, \frac{1}{2}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right]\right) \text{Sec}[c+d x] \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right) \Big/ \left(7 a d (a (1+\text{Sec}[c+d x]))^{2/3}\right)$$

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

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

Optimal (type 6, 90 leaves, 3 steps):

$$-\Bigg(\bigg(3\sqrt{2}\,\text{AppellF1}\Big[-\frac{7}{6},\frac{1}{2},1,-\frac{1}{6},\frac{1}{2}\,(1+\text{Sec}[c+d\,x]),1+\text{Sec}[c+d\,x]\Big]\,\text{Tan}[c+d\,x]\bigg)\Big/$$
$$\bigg(7\,a\,d\,\sqrt{1-\text{Sec}[c+d\,x]}\,(1+\text{Sec}[c+d\,x])\,(a+a\,\text{Sec}[c+d\,x])^{2/3}\bigg)\Bigg)$$

Result (type 6, 4638 leaves):

$$\Bigg(\bigg(\Big((1+\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]\Big)^{1/3}\,(1+\text{Sec}[c+d\,x])^{5/3}$$
$$\Big(\frac{27}{7}\,\text{Sin}[c+d\,x]-\frac{30}{7}\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\frac{3}{14}\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)\bigg)\Big/$$
$$\Big(d\,\big(a\,(1+\text{Sec}[c+d\,x])\big)^{5/3}\Big)+\bigg(2^{1/3}\,\text{Cos}[c+d\,x]\,\Big(\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{1/3}$$
$$(1+\text{Sec}[c+d\,x])^{5/3}\,\Big(\frac{16}{7}\,(1+\text{Sec}[c+d\,x])^{1/3}-\frac{27}{7}\,\text{Cos}[c+d\,x]\,(1+\text{Sec}[c+d\,x])^{1/3}\Big)$$
$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\,\bigg(-27-\Big(5\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\Big/$$
$$\bigg(\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)\,\bigg(\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$
$$\frac{2}{9}\,\bigg(-3\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\text{AppellF1}\Big[$$
$$\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\bigg)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\bigg)\bigg)-$$
$$\Big(45\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)\Big/$$
$$\bigg(\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)$$
$$\bigg(-15\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$
$$2\,\bigg(3\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]-\text{AppellF1}\Big[\frac{5}{2},$$
$$\frac{4}{3},1,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\bigg)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\bigg)\bigg)\bigg)\bigg)\Big/$$
$$\bigg(7\,d\,\big(a\,(1+\text{Sec}[c+d\,x])\big)^{5/3}\,\bigg(\frac{1}{7\times 2^{2/3}}\,\text{Cos}[c+d\,x]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$
$$\Big(\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{1/3}\,\bigg(-27-\Big(5\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},$$
$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\Big/\bigg(\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)$$

$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\frac{2}{9}\right.$$
$$\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)-$$
$$\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\left.\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$
$$\frac{1}{7}\times 2^{1/3}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{1/3}\text{Sin}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$
$$\left(-27-\left(5\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\left[\right.\right.$$
$$\left.\left.\left.\left.\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)-$$
$$\left(45\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\left.\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$
$$\frac{1}{7}\times 2^{1/3}\,\text{Cos}[c+d x]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{1/3}\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$
$$\left(\left(5\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.\right.$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(5\left(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(45\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\Bigg(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(45\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(45\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

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

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

$$\Big(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{9}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{4}{5}\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-3\Big(-\frac{6}{5}\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Big(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\frac{2}{9}\Big(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)^2\Big)+$$

$$\Big(45\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

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

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-15\Big(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] + \frac{1}{5}\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg) + 2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \Bigg(\frac{5}{7}\text{AppellF1}\left[\frac{7}{2}, \frac{4}{3}, 2, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] - \frac{20}{21}\text{AppellF1}\left[\frac{7}{2}, \frac{7}{3}, 1, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] + 3\Bigg(-\frac{10}{7}\text{AppellF1}\left[\frac{7}{2}, \frac{1}{3}, 3, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] + \frac{5}{21}\text{AppellF1}\left[\frac{7}{2}, \frac{4}{3}, 2, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg(-15\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 2\Bigg(3\,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] - \text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2\Bigg)\Bigg) +$$

$$\frac{1}{21\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \text{Sec}[c+d x]\right)^{2/3}} 2^{1/3}\,\text{Cos}[c+d x]\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\Bigg(-27 - \Bigg(5\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\Bigg/ \Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg(\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + \frac{2}{9}\Bigg(-3\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg) -$$

$$\Bigg(45\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg/ \Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg(-15\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 2\Bigg(3\,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] - \text{AppellF1}\left[\frac{5}{2},$$

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

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

$$\int \frac{\mathrm{Cos}[c+d x]}{(a+a\,\mathrm{Sec}[c+d x])^{5/3}}\,dx$$

Optimal (type 6, 90 leaves, 3 steps):

$$\left(3\sqrt{2}\,\mathrm{AppellF1}\left[-\frac{7}{6},\frac{1}{2},2,-\frac{1}{6},\frac{1}{2}(1+\mathrm{Sec}[c+d x]),1+\mathrm{Sec}[c+d x]\right]\mathrm{Tan}[c+d x]\right)\Big/$$
$$\left(7\,a\,d\sqrt{1-\mathrm{Sec}[c+d x]}\,(1+\mathrm{Sec}[c+d x])\,(a+a\,\mathrm{Sec}[c+d x])^{2/3}\right)$$

Result (type 6, 4638 leaves):

$$\Big(\big((1+\mathrm{Cos}[c+d x])\,\mathrm{Sec}[c+d x]\big)^{1/3}(1+\mathrm{Sec}[c+d x])^{5/3}$$
$$\left(-\frac{48}{7}\mathrm{Sin}[c+d x]+\frac{51}{7}\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]-\frac{3}{14}\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big)\Big/$$
$$\left(d\left(a(1+\mathrm{Sec}[c+d x])\right)^{5/3}\right)-\Big(5\times 2^{1/3}\,\mathrm{Cos}[c+d x]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Sec}[c+d x]\right)^{1/3}$$
$$(1+\mathrm{Sec}[c+d x])^{5/3}\left(-\frac{30}{7}(1+\mathrm{Sec}[c+d x])^{1/3}+\frac{55}{7}\mathrm{Cos}[c+d x]\,(1+\mathrm{Sec}[c+d x])^{1/3}\right)$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big(-33-\Big(3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)\Big/$$
$$\Big(\Big(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big(\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$\frac{2}{9}\Big(-3\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\mathrm{AppellF1}\Big[$$
$$\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big)-$$
$$\Big(55\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big/$$
$$\Big(\Big(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)$$
$$\Big(-15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$2\Big(3\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\mathrm{AppellF1}\Big[\frac{5}{2},$$
$$\frac{4}{3},1,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big)\Big)\Big)\Big/$$

$$\left(21\, d\, \left(a\, \left(1+\text{Sec}[c+d\, x]\right)\right)^{5/3}\, \left(-\frac{1}{21\times 2^{2/3}}\, 5\, \text{Cos}[c+d\, x]\, \text{Sec}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right.\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]^2\, \text{Sec}[c+d\, x]\right)^{1/3}\, \left(-33-\left(3\, \text{AppellF1}\left[\frac{1}{2},\, \frac{1}{3},\, 1,\, \frac{3}{2},\right.\right.\right.$$

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

$$\left(\text{AppellF1}\left[\frac{1}{2},\, \frac{1}{3},\, 1,\, \frac{3}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]+\frac{2}{9}\right.$$

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

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

$$\left(55\, \text{AppellF1}\left[\frac{3}{2},\, \frac{1}{3},\, 1,\, \frac{5}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\, \left(-15\, \text{AppellF1}\left[\frac{3}{2},\, \frac{1}{3},\, 1,\, \frac{5}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]+2\, \left(3\, \text{AppellF1}\left[\frac{5}{2},\, \frac{1}{3},\, 2,\, \frac{7}{2},\right.\right.$$

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

$$\left.\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]\right)\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\right)\right)+$$

$$\frac{5}{21}\times 2^{1/3}\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]^2\, \text{Sec}[c+d\, x]\right)^{1/3}\, \text{Sin}[c+d\, x]\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]$$

$$\left(-33-\left(3\, \text{AppellF1}\left[\frac{1}{2},\, \frac{1}{3},\, 1,\, \frac{3}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]\right)\Big/\right.$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\right.$$

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

$$\frac{2}{9}\, \left(-3\, \text{AppellF1}\left[\frac{3}{2},\, \frac{1}{3},\, 2,\, \frac{5}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]+\text{AppellF1}\left[\right.\right.$$

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

$$\left(55\, \text{AppellF1}\left[\frac{3}{2},\, \frac{1}{3},\, 1,\, \frac{5}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\Big/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\right.$$

$$\left(-15\, \text{AppellF1}\left[\frac{3}{2},\, \frac{1}{3},\, 1,\, \frac{5}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]+\right.$$

$$2\, \left(3\, \text{AppellF1}\left[\frac{5}{2},\, \frac{1}{3},\, 2,\, \frac{7}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\left.\left.\left.\frac{4}{3},\, 1,\, \frac{7}{2},\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2,\, -\text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right]\right)\, \text{Tan}\left[\frac{1}{2}\, (c+d\, x)\right]^2\right)\right)\right)-$$

$$\frac{5}{21}\times 2^{1/3}\,\text{Cos}[c+d\,x]\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{1/3}\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]$$

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

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

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\right.\right.$$

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

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

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

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

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

$$\frac{2}{9}\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\right.\right.$$

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

$$\left(55\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right.$$

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

$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\left.\left.\left.\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)-$$

$$\left(55\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right.$$

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

$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\left.\left.\left.\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)-$$

$$\left(55\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(-\frac{3}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$
\begin{aligned}
&-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\\
&\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\\
&\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\\
&\Big(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\\
&2\Big(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\text{AppellF1}\Big[\frac{5}{2},\\
&\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big)+\\
&\Big(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\\
&\Big(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\\
&\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{9}\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\\
&\frac{2}{9}\Big(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\Big[\\
&\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big(-\frac{3}{5}\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\\
&\frac{4}{5}\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\\
&\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-3\Big(-\frac{6}{5}\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},3,\\
&\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{5}\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\\
&-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big)\Big/\\
&\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big(\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\\
&-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\frac{2}{9}\Big(-3\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\\
&\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2\Big)+
\end{aligned}
$$

$$\left(55\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right.$$
$$\left(2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\right.\right.$$
$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-15\left(-\frac{3}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{5}{7}\,\text{AppellF1}\Big[\right.$$
$$\frac{7}{2},\frac{4}{3},2,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-\frac{20}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{3},1,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+3\left(-\frac{10}{7}\,\text{AppellF1}\Big[\right.$$
$$\frac{7}{2},\frac{1}{3},3,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},2,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]-\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\right.$$
$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\right)-$$
$$\frac{1}{63\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{2/3}}\,5\times 2^{1/3}\,\text{Cos}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$
$$\left(-33-\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\frac{2}{9}\right.$$
$$\left(-3\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\Big[\right.$$
$$\left.\left.\left.\frac{3}{2},\frac{4}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\left(55\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\left(3\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)$$

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

Problem 172: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 187 leaves, 9 steps):

$$-\frac{12 a^2\sqrt{\text{Cos}[c+d x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{5 d}+\frac{8 a^2\sqrt{\text{Cos}[c+d x]}\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{7 d}+\frac{12 a^2\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{5 d}+\frac{8 a^2\,\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{7 d}+\frac{4 a^2\,\text{Sec}[c+d x]^{5/2}\,\text{Sin}[c+d x]}{5 d}+\frac{2 a^2\,\text{Sec}[c+d x]^{7/2}\,\text{Sin}[c+d x]}{7 d}$$

Result (type 5, 287 leaves):

$$\frac{1}{70 d}a^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^4(1+\text{Sec}[c+d x])^2\left(-\frac{1}{-1+e^{2 i c}}2\,i\,\sqrt{2}\,e^{-i(c+d x)}\sqrt{\frac{e^{i(c+d x)}}{1+e^{2 i(c+d x)}}}\,\text{Cos}[c+d x]^2\left(21\left(1+e^{2 i(c+d x)}\right)+21\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i(c+d x)}\right]+10\,e^{i(c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i(c+d x)}\right]\right)+\frac{1}{\text{Sec}[c+d x]^{3/2}}(42\,\text{Cos}[d x]\,\text{Csc}[c]+(15+14\,\text{Cos}[c+d x]+10\,\text{Cos}[2(c+d x)])\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x])\right)$$

Problem 173: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 161 leaves, 8 steps):

$$-\frac{16\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{4\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{3\,d}+\frac{16\,a^2\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{5\,d}+\frac{4\,a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,d}+\frac{2\,a^2\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{5\,d}$$

Result (type 5, 269 leaves):

$$\frac{1}{30\,d}a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^4(1+\text{Sec}[c+d\,x])^2$$
$$\left(-\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Cos}[c+d\,x]^2\left(12\left(1+e^{2\,i\,(c+d\,x)}\right)+\right.\right.$$
$$12\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$\left.5\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)+$$
$$\left.\frac{24\,\text{Cos}[d\,x]\,\text{Csc}[c]+(10+3\,\text{Sec}[c+d\,x])\,\text{Tan}[c+d\,x]}{\text{Sec}[c+d\,x]^{3/2}}\right)$$

Problem 174: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Sec}[c+d\,x]}\,(a+a\,\text{Sec}[c+d\,x])^2\,dx$$

Optimal (type 4, 131 leaves, 7 steps):

$$-\frac{4\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{d}+\frac{8\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{3\,d}+\frac{4\,a^2\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}+\frac{2\,a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,d}$$

Result (type 5, 264 leaves):

$$\frac{1}{3} a^2 \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^4 (1+\operatorname{Sec}[c+d x])^2$$
$$\left(-\frac{1}{d\left(-1+e^{2 i c}\right)} i \sqrt{2}\, e^{-i (c+d x)} \sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}} \operatorname{Cos}[c+d x]^2\right.$$
$$\left(3\left(1+e^{2 i (c+d x)}\right)+3\left(-1+e^{2 i c}\right) \sqrt{1+e^{2 i (c+d x)}} \operatorname{Hypergeometric2F1}\left[-\frac{1}{4}, \frac{1}{2}, \frac{3}{4},-e^{2 i (c+d x)}\right]+\right.$$
$$\left.2 e^{i (c+d x)}\left(-1+e^{2 i c}\right) \sqrt{1+e^{2 i (c+d x)}} \operatorname{Hypergeometric2F1}\left[\frac{1}{4}, \frac{1}{2}, \frac{5}{4},-e^{2 i (c+d x)}\right]\right)+$$
$$\left.\frac{6 \operatorname{Cos}[d x] \operatorname{Csc}[c]+\operatorname{Tan}[c+d x]}{2 d \operatorname{Sec}[c+d x]^{3/2}}\right)$$

Problem 176: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 107 leaves, 6 steps):

$$\frac{4 a^2 \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), 2\right] \sqrt{\operatorname{Sec}[c+d x]}}{d}+$$
$$\frac{8 a^2 \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), 2\right] \sqrt{\operatorname{Sec}[c+d x]}}{3 d}+\frac{2 a^2 \operatorname{Sin}[c+d x]}{3 d \sqrt{\operatorname{Sec}[c+d x]}}$$

Result (type 5, 156 leaves):

$$\left(a^2\left(\operatorname{Cos}\left[\frac{c}{2}\right]-i \operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(-i \operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left(12-\frac{24 \operatorname{Hypergeometric2F1}\left[-\frac{1}{4}, \frac{1}{2}, \frac{3}{4},-e^{2 i (c+d x)}\right]}{\sqrt{1+e^{2 i (c+d x)}}}+\right.$$
$$8 \sqrt{1+e^{2 i (c+d x)}} \operatorname{Hypergeometric2F1}\left[\frac{1}{4}, \frac{1}{2}, \frac{5}{4},-e^{2 i (c+d x)}\right] \operatorname{Sec}[c+d x]+$$
$$\left.\left.2 i \operatorname{Sin}[c+d x]\right)\right) \Big/ \left(3 d \sqrt{\operatorname{Sec}[c+d x]}\right)$$

Problem 177: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 135 leaves, 7 steps):

$$\frac{16\,a^2\sqrt{\mathrm{Cos}[c+d\,x]}\ \mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{5\,d}+\frac{4\,a^2\sqrt{\mathrm{Cos}[c+d\,x]}\ \mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{3\,d}+\frac{2\,a^2\,\mathrm{Sin}[c+d\,x]}{5\,d\,\mathrm{Sec}[c+d\,x]^{3/2}}+\frac{4\,a^2\,\mathrm{Sin}[c+d\,x]}{3\,d\sqrt{\mathrm{Sec}[c+d\,x]}}$$

Result (type 5, 136 leaves):

$$\left(a^2\left(-96\,i+\frac{192\,i\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}-40\,i\sqrt{1+e^{2\,i\,(c+d\,x)}}\ \mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\mathrm{Sec}[c+d\,x]+40\,\mathrm{Sin}[c+d\,x]+6\,\mathrm{Sin}[2\,(c+d\,x)]\right)\right)\Big/\left(30\,d\sqrt{\mathrm{Sec}[c+d\,x]}\right)$$

Problem 178: Result unnecessarily involves higher level functions.

$$\int\frac{(a+a\,\mathrm{Sec}[c+d\,x])^2}{\mathrm{Sec}[c+d\,x]^{7/2}}\,dx$$

Optimal (type 4, 161 leaves, 8 steps):

$$\frac{12\,a^2\sqrt{\mathrm{Cos}[c+d\,x]}\ \mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{5\,d}+\frac{8\,a^2\sqrt{\mathrm{Cos}[c+d\,x]}\ \mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{7\,d}+\frac{2\,a^2\,\mathrm{Sin}[c+d\,x]}{7\,d\,\mathrm{Sec}[c+d\,x]^{5/2}}+\frac{4\,a^2\,\mathrm{Sin}[c+d\,x]}{5\,d\,\mathrm{Sec}[c+d\,x]^{3/2}}+\frac{8\,a^2\,\mathrm{Sin}[c+d\,x]}{7\,d\sqrt{\mathrm{Sec}[c+d\,x]}}$$

Result (type 5, 149 leaves):

$$\left(a^2\left(\frac{672\,i\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}+2\left(-168\,i-80\,i\sqrt{1+e^{2\,i\,(c+d\,x)}}\ \mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\mathrm{Sec}[c+d\,x]+85\,\mathrm{Sin}[c+d\,x]+28\,\mathrm{Sin}[2\,(c+d\,x)]+5\,\mathrm{Sin}[3\,(c+d\,x)]\right)\right)\right)\Big/\left(140\,d\sqrt{\mathrm{Sec}[c+d\,x]}\right)$$

Problem 179: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 187 leaves, 16 steps):

$$-\frac{28\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{52\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{21\,d}+\frac{28\,a^3\,\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{5\,d}+\frac{52\,a^3\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{21\,d}+\frac{6\,a^3\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{5\,d}+\frac{2\,a^3\,\text{Sec}[c+d\,x]^{7/2}\,\text{Sin}[c+d\,x]}{7\,d}$$

Result (type 5, 287 leaves):

$$\frac{1}{420\,d}a^3\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^6\,(1+\text{Sec}[c+d\,x])^3\left(-\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\;e^{-i\,(c+d\,x)}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\;\text{Cos}[c+d\,x]^3\left(147\,\left(1+e^{2\,i\,(c+d\,x)}\right)+147\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+65\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)+\frac{1}{\text{Sec}[c+d\,x]^{5/2}}\left(294\,\text{Cos}[d\,x]\,\text{Csc}[c]+(80+63\,\text{Cos}[c+d\,x]+65\,\text{Cos}[2\,(c+d\,x)])\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)$$

Problem 180: Result unnecessarily involves higher level functions.

$$\int\sqrt{\text{Sec}[c+d\,x]}\;(a+a\,\text{Sec}[c+d\,x])^3\,dx$$

Optimal (type 4, 157 leaves, 14 steps):

$$-\frac{36\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{4\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{d}+\frac{36\,a^3\,\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{5\,d}+\frac{2\,a^3\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{d}+\frac{2\,a^3\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{5\,d}$$

Result (type 5, 267 leaves):

$$\frac{1}{20\,d}a^3\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^6\,(1+\text{Sec}[c+d\,x])^3$$
$$\left(-\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Cos}[c+d\,x]^3\right.$$
$$\left(9\,\left(1+e^{2\,i\,(c+d\,x)}\right)+9\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+\right.$$
$$\left.5\,e^{i\,(c+d\,x)}\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)+$$
$$\left.\frac{18\,\text{Cos}[d\,x]\,\text{Csc}[c]+(5+\text{Sec}[c+d\,x])\,\text{Tan}[c+d\,x]}{\text{Sec}[c+d\,x]^{5/2}}\right)$$

Problem 181: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 131 leaves, 12 steps):

$$-\frac{4\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{d}+$$
$$\frac{20\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{3\,d}+$$
$$\frac{6\,a^3\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}+\frac{2\,a^3\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,d}$$

Result (type 5, 187 leaves):

$$\frac{1}{3\,d}a^3\,e^{-2\,i\,(c+d\,x)}\,\text{Sec}[c+d\,x]^{3/2}\,\left(-6-6\,\text{Cos}[2\,(c+d\,x)]+\right.$$
$$6\,e^{-2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{3/2}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$20\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Cos}[c+d\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$\left.2\,i\,\text{Sin}[c+d\,x]+9\,i\,\text{Sin}[2\,(c+d\,x)]\right)\,(-i\,\text{Cos}[2\,(c+d\,x)]+\text{Sin}[2\,(c+d\,x)])$$

Problem 182: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 131 leaves, 12 steps):

$$\frac{4 a^3 \sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{d}+\frac{20 a^3 \sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{3 d}+\frac{2 a^3 \text{Sin}[c+d x]}{3 d \sqrt{\text{Sec}[c+d x]}}+\frac{2 a^3 \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{d}$$

Result (type 5, 169 leaves):

$$\left(a^3 \left(\text{Cos}\left[\frac{c}{2}\right]-i\, \text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}\right]+i\, \text{Sin}\left[\frac{c}{2}\right]\right) \left(\frac{24\, i\, \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]}{\sqrt{1+e^{2 i (c+d x)}}}+2 \left(-6\, i-10\, i \sqrt{1+e^{2 i (c+d x)}}\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right] \text{Sec}[c+d x]+\text{Sin}[c+d x]+3\, \text{Tan}[c+d x]\right)\right)\right) \Big/ \left(3 d \sqrt{\text{Sec}[c+d x]}\right)$$

Problem 183: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 131 leaves, 12 steps):

$$\frac{36 a^3 \sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{5 d}+\frac{4 a^3 \sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{d}+\frac{2 a^3 \text{Sin}[c+d x]}{5 d\, \text{Sec}[c+d x]^{3/2}}+\frac{2 a^3 \text{Sin}[c+d x]}{d \sqrt{\text{Sec}[c+d x]}}$$

Result (type 5, 171 leaves):

$$\left(a^3 \left(\text{Cos}\left[\frac{c}{2}\right]-i\, \text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}\right]+i\, \text{Sin}\left[\frac{c}{2}\right]\right) \left(\frac{144\, i\, \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]}{\sqrt{1+e^{2 i (c+d x)}}}+2 \left(-36\, i-20\, i \sqrt{1+e^{2 i (c+d x)}}\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right] \text{Sec}[c+d x]+10\, \text{Sin}[c+d x]+\text{Sin}[2 (c+d x)]\right)\right)\right) \Big/ \left(10 d \sqrt{\text{Sec}[c+d x]}\right)$$

Problem 184: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 161 leaves, 14 steps):

$$\frac{28\,a^3\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{52\,a^3\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{21\,d}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{7\,d\,\text{Sec}[c+d\,x]^{5/2}}+\frac{6\,a^3\,\text{Sin}[c+d\,x]}{5\,d\,\text{Sec}[c+d\,x]^{3/2}}+\frac{52\,a^3\,\text{Sin}[c+d\,x]}{21\,d\,\sqrt{\text{Sec}[c+d\,x]}}$$

Result (type 5, 146 leaves):

$$\left(a^3\left(-2352\,i+\frac{4704\,i\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}-1040\,i\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\text{Sec}[c+d\,x]+1070\,\text{Sin}[c+d\,x]+252\,\text{Sin}[2\,(c+d\,x)]+30\,\text{Sin}[3\,(c+d\,x)]\right)\right)\Big/\left(420\,d\,\sqrt{\text{Sec}[c+d\,x]}\right)$$

Problem 185: Result unnecessarily involves higher level functions.

$$\int\frac{(a+a\,\text{Sec}[c+d\,x])^3}{\text{Sec}[c+d\,x]^{9/2}}\,dx$$

Optimal (type 4, 187 leaves, 16 steps):

$$\frac{68\,a^3\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{15\,d}+\frac{44\,a^3\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{21\,d}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{9\,d\,\text{Sec}[c+d\,x]^{7/2}}+\frac{6\,a^3\,\text{Sin}[c+d\,x]}{7\,d\,\text{Sec}[c+d\,x]^{5/2}}+\frac{68\,a^3\,\text{Sin}[c+d\,x]}{45\,d\,\text{Sec}[c+d\,x]^{3/2}}+\frac{44\,a^3\,\text{Sin}[c+d\,x]}{21\,d\,\sqrt{\text{Sec}[c+d\,x]}}$$

Result (type 5, 156 leaves):

$$\left(a^3\left(-11424\,i+\frac{22848\,i\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}-5280\,i\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\text{Sec}[c+d\,x]+5820\,\text{Sin}[c+d\,x]+2044\,\text{Sin}[2\,(c+d\,x)]+540\,\text{Sin}[3\,(c+d\,x)]+70\,\text{Sin}[4\,(c+d\,x)]\right)\right)\Big/\left(2520\,d\,\sqrt{\text{Sec}[c+d\,x]}\right)$$

Problem 186: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 213 leaves, 21 steps):

$$-\frac{152\,a^4\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{15\,d}+\frac{32\,a^4\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{7\,d}+\frac{152\,a^4\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{15\,d}+\frac{32\,a^4\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{7\,d}+\frac{122\,a^4\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{45\,d}+\frac{8\,a^4\,\text{Sec}[c+d\,x]^{7/2}\,\text{Sin}[c+d\,x]}{7\,d}+\frac{2\,a^4\,\text{Sec}[c+d\,x]^{9/2}\,\text{Sin}[c+d\,x]}{9\,d}$$

Result (type 5, 396 leaves):

$$-\left(\left(\left(i\,e^{-i(c+d\,x)}\sqrt{\frac{e^{i(c+d\,x)}}{1+e^{2i(c+d\,x)}}}\;\text{Cos}[c+d\,x]^4\left(133\left(1+e^{2i(c+d\,x)}\right)+133\left(-1+e^{2ic}\right)\sqrt{1+e^{2i(c+d\,x)}}\;\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i(c+d\,x)}\right]+60\,e^{i(c+d\,x)}\left(-1+e^{2ic}\right)\sqrt{1+e^{2i(c+d\,x)}}\;\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2i(c+d\,x)}\right]\right)\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\text{Sec}[c+d\,x]\right)^4\right)\Big/\left(105\sqrt{2}\;d\left(-1+e^{2ic}\right)\right)\right)+\frac{1}{\text{Sec}[c+d\,x]^{7/2}}\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^8\left(a+a\,\text{Sec}[c+d\,x]\right)^4\left(\frac{19\,\text{Cos}[d\,x]\,\text{Csc}[c]}{30\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^4\,\text{Sin}[d\,x]}{72\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(7\,\text{Sin}[c]+36\,\text{Sin}[d\,x]\right)}{504\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\left(180\,\text{Sin}[c]+427\,\text{Sin}[d\,x]\right)}{2520\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(427\,\text{Sin}[c]+720\,\text{Sin}[d\,x]\right)}{2520\,d}+\frac{2\,\text{Tan}[c]}{7\,d}\right)$$

Problem 187: Result unnecessarily involves higher level functions.

$$\int\sqrt{\text{Sec}[c+d\,x]}\;\left(a+a\,\text{Sec}[c+d\,x]\right)^4\,dx$$

Optimal (type 4, 187 leaves, 18 steps):

$$-\frac{64\,a^4\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{136\,a^4\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{21\,d}+\frac{64\,a^4\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{5\,d}+\frac{94\,a^4\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{21\,d}+\frac{8\,a^4\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{5\,d}+\frac{2\,a^4\,\text{Sec}[c+d\,x]^{7/2}\,\text{Sin}[c+d\,x]}{7\,d}$$

Result (type 5, 279 leaves):

$$\frac{1}{840\,d}a^4\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^8\,(1+\text{Sec}[c+d\,x])^4\left(-\frac{1}{-1+e^{2\,i\,c}}4\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\ \text{Cos}[c+d\,x]^4\left(168\,\left(1+e^{2\,i\,(c+d\,x)}\right)+168\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\ \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+85\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)+\frac{1}{\text{Sec}[c+d\,x]^{7/2}}\left(672\,\text{Cos}[d\,x]\,\text{Csc}[c]+\left(235+84\,\text{Sec}[c+d\,x]+15\,\text{Sec}[c+d\,x]^2\right)\text{Tan}[c+d\,x]\right)\right)$$

Problem 188: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 161 leaves, 16 steps):

$$-\frac{56\,a^4\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+\frac{32\,a^4\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{3\,d}+\frac{66\,a^4\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{5\,d}+\frac{8\,a^4\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,d}+\frac{2\,a^4\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{5\,d}$$

Result (type 5, 286 leaves):

$$\frac{1}{240\,d}a^4\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^8\,(1+\text{Sec}[c+d\,x])^4$$
$$\left(-\frac{1}{-1+e^{2\,i\,c}}8\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\text{Cos}[c+d\,x]^4\,\Big(21\,\left(1+e^{2\,i\,(c+d\,x)}\right)+\right.$$
$$21\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$20\,e^{i\,(c+d\,x)}\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\Big)+$$
$$\frac{1}{\text{Sec}[c+d\,x]^{7/2}}\,(-3\,(-61+5\,\text{Cos}[2\,c])\,\text{Cos}[d\,x]\,\text{Csc}[c]+30\,\text{Cos}[c]\,\text{Sin}[d\,x]+$$
$$\left.2\,(20+3\,\text{Sec}[c+d\,x])\,\text{Tan}[c+d\,x])\right)$$

Problem 190: Result unnecessarily involves higher level functions.

$$\int\frac{(a+a\,\text{Sec}[c+d\,x])^4}{\text{Sec}[c+d\,x]^{5/2}}\,dx$$

Optimal (type 4, 159 leaves, 15 steps):

$$\frac{56\,a^4\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{5\,d}+$$
$$\frac{32\,a^4\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{3\,d}+$$
$$\frac{2\,a^4\,\text{Sin}[c+d\,x]}{5\,d\,\text{Sec}[c+d\,x]^{3/2}}+\frac{8\,a^4\,\text{Sin}[c+d\,x]}{3\,d\,\sqrt{\text{Sec}[c+d\,x]}}+\frac{2\,a^4\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}$$

Result (type 5, 184 leaves):

$$\left(a^4\,\left(\text{Cos}\left[\frac{c}{2}\right]-i\,\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}\right]+i\,\text{Sin}\left[\frac{c}{2}\right]\right)\right.$$
$$\left(-336\,i+\frac{672\,i\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}-\right.$$
$$320\,i\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\,\text{Sec}[c+d\,x]+$$
$$\left.\left.80\,\text{Sin}[c+d\,x]+3\,\text{Sec}[c+d\,x]\,\text{Sin}[3\,(c+d\,x)]+63\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(30\,d\,\sqrt{\text{Sec}[c+d\,x]}\right)$$

Problem 191: Result unnecessarily involves higher level functions.

$$\int \frac{(a + a \operatorname{Sec}[c + d x])^4}{\operatorname{Sec}[c + d x]^{7/2}} \, dx$$

Optimal (type 4, 161 leaves, 16 steps):

$$\frac{64 a^4 \sqrt{\operatorname{Cos}[c + d x]} \operatorname{EllipticE}\left[\frac{1}{2} (c + d x), 2\right] \sqrt{\operatorname{Sec}[c + d x]}}{5 d} + \frac{136 a^4 \sqrt{\operatorname{Cos}[c + d x]} \operatorname{EllipticF}\left[\frac{1}{2} (c + d x), 2\right] \sqrt{\operatorname{Sec}[c + d x]}}{21 d} + \frac{2 a^4 \operatorname{Sin}[c + d x]}{7 d \operatorname{Sec}[c + d x]^{5/2}} + \frac{8 a^4 \operatorname{Sin}[c + d x]}{5 d \operatorname{Sec}[c + d x]^{3/2}} + \frac{94 a^4 \operatorname{Sin}[c + d x]}{21 d \sqrt{\operatorname{Sec}[c + d x]}}$$

Result (type 5, 180 leaves):

$$\left(a^4 \left(\operatorname{Cos}\left[\frac{c}{2}\right] - i \operatorname{Sin}\left[\frac{c}{2}\right]\right) \left(\operatorname{Cos}\left[\frac{c}{2}\right] + i \operatorname{Sin}\left[\frac{c}{2}\right]\right) \left(-5376 i + \frac{10752 i \operatorname{Hypergeometric2F1}\left[-\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, -e^{2 i (c+d x)}\right]}{\sqrt{1 + e^{2 i (c+d x)}}} - 2720 i \sqrt{1 + e^{2 i (c+d x)}} \operatorname{Hypergeometric2F1}\left[\frac{1}{4}, \frac{1}{2}, \frac{5}{4}, -e^{2 i (c+d x)}\right] \operatorname{Sec}[c + d x] + 1910 \operatorname{Sin}[c + d x] + 336 \operatorname{Sin}[2 (c + d x)] + 30 \operatorname{Sin}[3 (c + d x)]\right)\right) \Big/ \left(420 d \sqrt{\operatorname{Sec}[c + d x]}\right)$$

Problem 192: Result unnecessarily involves higher level functions.

$$\int \frac{(a + a \operatorname{Sec}[c + d x])^4}{\operatorname{Sec}[c + d x]^{9/2}} \, dx$$

Optimal (type 4, 187 leaves, 18 steps):

$$\frac{152 a^4 \sqrt{\operatorname{Cos}[c + d x]} \operatorname{EllipticE}\left[\frac{1}{2} (c + d x), 2\right] \sqrt{\operatorname{Sec}[c + d x]}}{15 d} + \frac{32 a^4 \sqrt{\operatorname{Cos}[c + d x]} \operatorname{EllipticF}\left[\frac{1}{2} (c + d x), 2\right] \sqrt{\operatorname{Sec}[c + d x]}}{7 d} + \frac{2 a^4 \operatorname{Sin}[c + d x]}{9 d \operatorname{Sec}[c + d x]^{7/2}} + \frac{8 a^4 \operatorname{Sin}[c + d x]}{7 d \operatorname{Sec}[c + d x]^{5/2}} + \frac{122 a^4 \operatorname{Sin}[c + d x]}{45 d \operatorname{Sec}[c + d x]^{3/2}} + \frac{32 a^4 \operatorname{Sin}[c + d x]}{7 d \sqrt{\operatorname{Sec}[c + d x]}}$$

Result (type 5, 156 leaves):

$$\left(a^4\left(-25536\,i+\frac{51072\,i\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]}{\sqrt{1+e^{2\,i\,(c+d\,x)}}}-11520\,i\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\text{Sec}[c+d\,x]+12240\,\text{Sin}[c+d\,x]+3556\,\text{Sin}[2\,(c+d\,x)]+720\,\text{Sin}[3\,(c+d\,x)]+70\,\text{Sin}[4\,(c+d\,x)]\right)\right)\Big/\left(2520\,d\,\sqrt{\text{Sec}[c+d\,x]}\right)$$

Problem 193: Result unnecessarily involves higher level functions.

$$\int\frac{(a+a\,\text{Sec}[c+d\,x])^4}{\text{Sec}[c+d\,x]^{11/2}}\,dx$$

Optimal (type 4, 213 leaves, 21 steps):

$$\frac{128\,a^4\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{15\,d}+\frac{904\,a^4\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{231\,d}+\frac{2\,a^4\,\text{Sin}[c+d\,x]}{11\,d\,\text{Sec}[c+d\,x]^{9/2}}+\frac{8\,a^4\,\text{Sin}[c+d\,x]}{9\,d\,\text{Sec}[c+d\,x]^{7/2}}+\frac{150\,a^4\,\text{Sin}[c+d\,x]}{77\,d\,\text{Sec}[c+d\,x]^{5/2}}+\frac{128\,a^4\,\text{Sin}[c+d\,x]}{45\,d\,\text{Sec}[c+d\,x]^{3/2}}+\frac{904\,a^4\,\text{Sin}[c+d\,x]}{231\,d\,\sqrt{\text{Sec}[c+d\,x]}}$$

Result (type 5, 306 leaves):

$$-\frac{1}{1774080\,d\,\text{Sec}[c+d\,x]^{7/2}}\,i\,a^4\,e^{-6\,i\,(c+d\,x)}\left(-315-3080\,e^{i\,(c+d\,x)}-14760\,e^{2\,i\,(c+d\,x)}-48664\,e^{3\,i\,(c+d\,x)}-137055\,e^{4\,i\,(c+d\,x)}+427504\,e^{5\,i\,(c+d\,x)}+518672\,e^{7\,i\,(c+d\,x)}+137055\,e^{8\,i\,(c+d\,x)}+48664\,e^{9\,i\,(c+d\,x)}+14760\,e^{10\,i\,(c+d\,x)}+3080\,e^{11\,i\,(c+d\,x)}+315\,e^{12\,i\,(c+d\,x)}-946176\,e^{5\,i\,(c+d\,x)}\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+433920\,e^{6\,i\,(c+d\,x)}\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^8(1+\text{Sec}[c+d\,x])^4$$

Problem 194: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 164 leaves, 8 steps):

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

Result (type 5, 291 leaves):

$$\frac{1}{3 a d\,(1+\text{Sec}[c+d x])}\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\left(\frac{1}{-1+e^{2 i c}}2 i\sqrt{2}\,e^{-i (c+d x)}\sqrt{\frac{e^{i (c+d x)}}{1+e^{2 i (c+d x)}}}\left(9\left(1+e^{2 i (c+d x)}\right)+9\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\ \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]-5\,e^{i (c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right]\right)-\sqrt{\text{Sec}[c+d x]}\left(18\,\text{Cos}[d x]\,\text{Csc}[c]+\text{Sec}[c+d x]\left(-5\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]\text{Sin}\left[\frac{3}{2}(c+d x)\right]+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)$$

Problem 195: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 136 leaves, 7 steps):

$$-\frac{3\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}-\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}+\frac{3\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{a d}-\frac{\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{d\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 5, 262 leaves):

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

Problem 196: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 110 leaves, 6 steps):

$$\frac{\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),2\right]\sqrt{\text{Sec}[c+d\,x]}}{a\,d}+$$
$$\frac{\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),2\right]\sqrt{\text{Sec}[c+d\,x]}}{a\,d}-\frac{\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{d\left(a+a\,\text{Sec}[c+d\,x]\right)}$$

Result (type 5, 201 leaves):

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

Problem 197: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 110 leaves, 6 steps):

$$-\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}+\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}+\frac{\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{d\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 5, 202 leaves):

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

Problem 198: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Sec}[c+d x]}\ (a+a\,\text{Sec}[c+d x])}\,dx$$

Optimal (type 4, 112 leaves, 6 steps):

$$\frac{3\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}-\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a d}-\frac{\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{d\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 5, 317 leaves):

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

Problem 199: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

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

Optimal (type 4, 140 leaves, 7 steps):

$$-\frac{3 \sqrt{\operatorname{Cos}[c+d x]}\ \operatorname{EllipticE}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\operatorname{Sec}[c+d x]}}{a d}+\frac{5 \sqrt{\operatorname{Cos}[c+d x]}\ \operatorname{EllipticF}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\operatorname{Sec}[c+d x]}}{3 a d}+\frac{5 \operatorname{Sin}[c+d x]}{3 a d \sqrt{\operatorname{Sec}[c+d x]}}-\frac{\operatorname{Sin}[c+d x]}{d \sqrt{\operatorname{Sec}[c+d x]}\,(a+a \operatorname{Sec}[c+d x])}$$

Result (type 5, 380 leaves):

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

Problem 200: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\operatorname{Sec}[c+d x]^{5/2}\,(a+a \operatorname{Sec}[c+d x])}\,dx$$

Optimal (type 4, 168 leaves, 8 steps):

$$\frac{21\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{5\,a\,d}-\frac{5\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{3\,a\,d}+\frac{7\,\text{Sin}[c+d\,x]}{5\,a\,d\,\text{Sec}[c+d\,x]^{3/2}}-\frac{5\,\text{Sin}[c+d\,x]}{3\,a\,d\sqrt{\text{Sec}[c+d\,x]}}-\frac{\text{Sin}[c+d\,x]}{d\,\text{Sec}[c+d\,x]^{3/2}\left(a+a\,\text{Sec}[c+d\,x]\right)}$$

Result (type 5, 347 leaves):

$$\frac{1}{60\,a\,d\left(1+\text{Sec}[c+d\,x]\right)}\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\left(\frac{1}{-1+e^{2\,i\,c}}8\,i\sqrt{2}\,e^{-i\,(c+d\,x)}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\left(63\left(1+e^{2\,i\,(c+d\,x)}\right)+63\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+25\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)-\sqrt{\text{Sec}[c+d\,x]}\left(18\left(17+11\,\text{Cos}[2\,c]\right)\text{Cos}[d\,x]\,\text{Csc}[c]+4\left(10\,\text{Cos}[2\,d\,x]\,\text{Sin}[2\,c]-3\,\text{Cos}[3\,d\,x]\,\text{Sin}[3\,c]-30\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]\text{Sin}\left[\frac{d\,x}{2}\right]-99\,\text{Cos}[c]\,\text{Sin}[d\,x]+10\,\text{Cos}[2\,c]\,\text{Sin}[2\,d\,x]-3\,\text{Cos}[3\,c]\,\text{Sin}[3\,d\,x]-30\,\text{Tan}\left[\frac{c}{2}\right]\right)\right)\right)$$

Problem 201: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 202 leaves, 9 steps):

$$\frac{7\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{a^2\,d}+\frac{10\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{3\,a^2\,d}-\frac{7\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{a^2\,d}+\frac{10\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,a^2\,d}-\frac{7\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{3\,a^2\,d\left(1+\text{Sec}[c+d\,x]\right)}-\frac{\text{Sec}[c+d\,x]^{7/2}\,\text{Sin}[c+d\,x]}{3\,d\left(a+a\,\text{Sec}[c+d\,x]\right)^2}$$

Result (type 5, 451 leaves):

$$\left(7\sqrt{2}\,e^{-i\,(2c+dx)}\sqrt{\frac{e^{i\,(c+dx)}}{1+e^{2i\,(c+dx)}}}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\mathrm{Csc}\left[\frac{c}{2}\right]\right.$$
$$\left(1+e^{2i\,(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i\,(c+dx)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i\,(c+dx)}\right]\right)$$
$$\left.\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+dx]^2\right)\Big/\left(d\left(a+a\,\mathrm{Sec}[c+dx]\right)^2\right)+$$
$$\left(20\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{EllipticF}\left[\frac{1}{2}\,(c+dx),2\right]\mathrm{Sec}\left[\frac{c}{2}\right]\right.$$
$$\left.\mathrm{Sec}[c+dx]^{5/2}\,\mathrm{Sin}[c]\right)\Big/\left(3d\left(a+a\,\mathrm{Sec}[c+dx]\right)^2\right)+\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\mathrm{Sec}[c+dx]^{5/2}\right.$$
$$\left(-\frac{14\,\mathrm{Cos}[dx]\,\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}\right]}{d}+\frac{4\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c]\left(-3\,\mathrm{Sin}\left[\frac{c}{2}\right]+5\,\mathrm{Sin}\left[\frac{3c}{2}\right]\right)}{3d}+\right.$$
$$\frac{32\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\mathrm{Sin}\left[\frac{dx}{2}\right]}{3d}+\frac{2\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\mathrm{Sin}\left[\frac{dx}{2}\right]}{3d}+$$
$$\left.\left.\frac{8\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+dx]\,\mathrm{Sin}[dx]}{3d}+\frac{2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\mathrm{Tan}\left[\frac{c}{2}\right]}{3d}\right)\right)\Big/\left(a+a\,\mathrm{Sec}[c+dx]\right)^2$$

Problem 202: Result unnecessarily involves higher level functions.

$$\int\frac{\mathrm{Sec}[c+dx]^{7/2}}{\left(a+a\,\mathrm{Sec}[c+dx]\right)^2}\,dx$$

Optimal (type 4, 176 leaves, 8 steps):

$$-\frac{4\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{a^2\,d}-\frac{5\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{3\,a^2\,d}+$$
$$\frac{4\sqrt{\mathrm{Sec}[c+dx]}\,\mathrm{Sin}[c+dx]}{a^2\,d}-\frac{5\,\mathrm{Sec}[c+dx]^{3/2}\,\mathrm{Sin}[c+dx]}{3\,a^2\,d\,\left(1+\mathrm{Sec}[c+dx]\right)}-\frac{\mathrm{Sec}[c+dx]^{5/2}\,\mathrm{Sin}[c+dx]}{3\,d\,\left(a+a\,\mathrm{Sec}[c+dx]\right)^2}$$

Result (type 5, 259 leaves):

$$-\frac{1}{6 a^2 d \left(1+\text{Sec}[c+d x]\right)^2} e^{-i (2 c+d x)} \text{Cos}\left[\frac{1}{2} (c+d x)\right] \text{Sec}[c+d x]^{5/2} \left(12 i e^{-2 i (c+d x)} \left(1+e^{i (c+d x)}\right)^3 \sqrt{1+e^{2 i (c+d x)}} \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]+40 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^3 \sqrt{\text{Cos}[c+d x]} \text{EllipticF}\left[\frac{1}{2} (c+d x),2\right] \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+i \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)-i \left(29+50 \text{Cos}[c+d x]+17 \text{Cos}[2 (c+d x)]-12 i \text{Sin}[c+d x]-7 i \text{Sin}[2 (c+d x)]\right)\right) \left(\text{Cos}\left[\frac{1}{2} (3 c+d x)\right]+i \text{Sin}\left[\frac{1}{2} (3 c+d x)\right]\right)$$

Problem 203: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 149 leaves, 7 steps):

$$\frac{\sqrt{\text{Cos}[c+d x]} \text{EllipticE}\left[\frac{1}{2} (c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{a^2 d}+\frac{2 \sqrt{\text{Cos}[c+d x]} \text{EllipticF}\left[\frac{1}{2} (c+d x),2\right] \sqrt{\text{Sec}[c+d x]}}{3 a^2 d}-\frac{\sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{a^2 d \left(1+\text{Sec}[c+d x]\right)}-\frac{\text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x]}{3 d \left(a+a \text{Sec}[c+d x]\right)^2}$$

Result (type 5, 249 leaves):

$$\frac{1}{6 a^2 d \left(1+\text{Sec}[c+d x]\right)^2} e^{-i (2 c+d x)} \text{Cos}\left[\frac{1}{2} (c+d x)\right] \text{Sec}[c+d x]^{5/2} \left(3 i e^{-2 i (c+d x)} \left(1+e^{i (c+d x)}\right)^3 \sqrt{1+e^{2 i (c+d x)}} \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]+16 \text{Cos}\left[\frac{1}{2} (c+d x)\right]^3 \sqrt{\text{Cos}[c+d x]} \text{EllipticF}\left[\frac{1}{2} (c+d x),2\right] \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+i \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)-i \left(5+14 \text{Cos}[c+d x]+5 \text{Cos}[2 (c+d x)]-i \text{Sin}[2 (c+d x)]\right)\right) \left(\text{Cos}\left[\frac{1}{2} (3 c+d x)\right]+i \text{Sin}\left[\frac{1}{2} (3 c+d x)\right]\right)$$

Problem 205: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 149 leaves, 7 steps):

$$-\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a^2 d}+\frac{2\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{3 a^2 d}+\frac{\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{a^2 d\,(1+\text{Sec}[c+d x])}-\frac{\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{3 d\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 247 leaves):

$$\frac{1}{6 a^2 d\,(1+\text{Sec}[c+d x])^2}\,e^{-i(2c+d x)}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c+d x]^{5/2}\left(16\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]^3\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)-i\left(-7-10\,\text{Cos}[c+d x]-7\,\text{Cos}[2(c+d x)]+3\,e^{-2i(c+d x)}\left(1+e^{i(c+d x)}\right)^3\sqrt{1+e^{2i(c+d x)}}\ \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i(c+d x)}\right]-i\,\text{Sin}[2(c+d x)]\right)\right)\left(\text{Cos}\left[\frac{1}{2}(3c+d x)\right]+i\,\text{Sin}\left[\frac{1}{2}(3c+d x)\right]\right)$$

Problem 206: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Sec}[c+d x]}\,(a+a\,\text{Sec}[c+d x])^2}\,dx$$

Optimal (type 4, 152 leaves, 7 steps):

$$\frac{4\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a^2 d}-\frac{5\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{3 a^2 d}-\frac{5\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{3 a^2 d\,(1+\text{Sec}[c+d x])}-\frac{\sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{3 d\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 430 leaves):

$$\left(4\sqrt{2}\,e^{-i(2c+dx)}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\text{Csc}\left[\frac{c}{2}\right]\right.$$
$$\left(1+e^{2i(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i(c+dx)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i(c+dx)}\right]\right)$$
$$\left.\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^2\right)\Big/\left(d\left(a+a\,\text{Sec}[c+dx]\right)^2\right)-$$
$$\left(10\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\sqrt{\text{Cos}[c+dx]}\,\text{Csc}\left[\frac{c}{2}\right]\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\right.$$
$$\left.\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^{5/2}\,\text{Sin}[c]\right)\Big/\left(3d\left(a+a\,\text{Sec}[c+dx]\right)^2\right)+$$
$$\left(\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\text{Sec}[c+dx]^{5/2}\left(-\frac{2\left(3+\text{Cos}[2c]\right)\text{Cos}[dx]\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]}{d}+\right.\right.$$
$$\frac{28\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\text{Sin}\left[\frac{dx}{2}\right]}{3d}-\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\text{Sin}\left[\frac{dx}{2}\right]}{3d}+$$
$$\left.\left.\frac{8\,\text{Cos}[c]\,\text{Sin}[dx]}{d}+\frac{28\,\text{Tan}\left[\frac{c}{2}\right]}{3d}-\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{3d}\right)\right)\Big/\left(a+a\,\text{Sec}[c+dx]\right)^2$$

Problem 207: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 178 leaves, 8 steps):

$$-\frac{7\sqrt{\text{Cos}[c+dx]}\,\text{EllipticE}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{a^2d}+$$
$$\frac{10\sqrt{\text{Cos}[c+dx]}\,\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{3a^2d}+\frac{10\,\text{Sin}[c+dx]}{3a^2d\sqrt{\text{Sec}[c+dx]}}-$$
$$\frac{7\,\text{Sin}[c+dx]}{3a^2d\sqrt{\text{Sec}[c+dx]}\left(1+\text{Sec}[c+dx]\right)}-\frac{\text{Sin}[c+dx]}{3d\sqrt{\text{Sec}[c+dx]}\left(a+a\,\text{Sec}[c+dx]\right)^2}$$

Result (type 5, 278 leaves):

$$\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^4\right.$$
$$\left(\frac{40\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{d}+\left(2\,i\,e^{-2 i (c+d x)}\left(1+33\,e^{i (c+d x)}+\right.\right.\right.$$
$$73\,e^{2 i (c+d x)}+87\,e^{3 i (c+d x)}+81\,e^{4 i (c+d x)}+53\,e^{5 i (c+d x)}+9\,e^{6 i (c+d x)}-e^{7 i (c+d x)}-$$
$$\left.42\,e^{i (c+d x)}\left(1+e^{i (c+d x)}\right)^3\sqrt{1+e^{2 i (c+d x)}}\ \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]\right)$$
$$\left.\left.\sqrt{\text{Sec}[c+d x]}\right)\Big/\left(d\left(1+e^{i (c+d x)}\right)^3\right)\right)\text{Sec}[c+d x]^2\Bigg)\Big/\left(3\,a^2\left(1+\text{Sec}[c+d x]\right)^2\right)$$

Problem 208: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Sec}[c+d x]^{5/2}\left(a+a\,\text{Sec}[c+d x]\right)^2}\,dx$$

Optimal (type 4, 200 leaves, 9 steps):

$$\frac{56\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{5\,a^2\,d}-$$
$$\frac{5\sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{a^2\,d}+\frac{56\,\text{Sin}[c+d x]}{15\,a^2\,d\,\text{Sec}[c+d x]^{3/2}}-$$
$$\frac{5\,\text{Sin}[c+d x]}{a^2\,d\sqrt{\text{Sec}[c+d x]}}-\frac{3\,\text{Sin}[c+d x]}{a^2\,d\,\text{Sec}[c+d x]^{3/2}\left(1+\text{Sec}[c+d x]\right)}-\frac{\text{Sin}[c+d x]}{3\,d\,\text{Sec}[c+d x]^{3/2}\left(a+a\,\text{Sec}[c+d x]\right)^2}$$

Result (type 5, 500 leaves):

$$\left(56\sqrt{2}\,e^{-i\,(2c+dx)}\sqrt{\frac{e^{i\,(c+dx)}}{1+e^{2i\,(c+dx)}}}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\mathrm{Csc}\left[\frac{c}{2}\right]\left(1+e^{2i\,(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i\,(c+dx)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i\,(c+dx)}\right]\right)\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+dx]^2\right)\Big/\left(5d\,(a+a\,\mathrm{Sec}[c+dx])^2\right)-$$

$$\left(10\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+dx]^{5/2}\,\mathrm{Sin}[c]\right)\Big/\left(d\,(a+a\,\mathrm{Sec}[c+dx])^2\right)+$$

$$\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\mathrm{Sec}[c+dx]^{5/2}\left(-\frac{(151+73\,\mathrm{Cos}[2c])\,\mathrm{Cos}[dx]\,\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}\right]}{10d}-\frac{8\,\mathrm{Cos}[2dx]\,\mathrm{Sin}[2c]}{3d}+\frac{2\,\mathrm{Cos}[3dx]\,\mathrm{Sin}[3c]}{5d}+\frac{52\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\mathrm{Sin}\left[\frac{dx}{2}\right]}{3d}-\frac{2\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\mathrm{Sin}\left[\frac{dx}{2}\right]}{3d}+\frac{146\,\mathrm{Cos}[c]\,\mathrm{Sin}[dx]}{5d}-\frac{8\,\mathrm{Cos}[2c]\,\mathrm{Sin}[2dx]}{3d}+\frac{2\,\mathrm{Cos}[3c]\,\mathrm{Sin}[3dx]}{5d}+\frac{52\,\mathrm{Tan}\left[\frac{c}{2}\right]}{3d}-\frac{2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\mathrm{Tan}\left[\frac{c}{2}\right]}{3d}\right)\right)\Big/\left(a+a\,\mathrm{Sec}[c+dx]\right)^2$$

Problem 209: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[c+dx]^{11/2}}{(a+a\,\mathrm{Sec}[c+dx])^3}\,dx$$

Optimal (type 4, 247 leaves, 10 steps):

$$\frac{119\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{EllipticE}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{10a^3d}+\frac{11\sqrt{\mathrm{Cos}[c+dx]}\,\mathrm{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{2a^3d}-\frac{119\sqrt{\mathrm{Sec}[c+dx]}\,\mathrm{Sin}[c+dx]}{10a^3d}+\frac{11\,\mathrm{Sec}[c+dx]^{3/2}\,\mathrm{Sin}[c+dx]}{2a^3d}-\frac{\mathrm{Sec}[c+dx]^{9/2}\,\mathrm{Sin}[c+dx]}{5d\,(a+a\,\mathrm{Sec}[c+dx])^3}-\frac{2\,\mathrm{Sec}[c+dx]^{7/2}\,\mathrm{Sin}[c+dx]}{3ad\,(a+a\,\mathrm{Sec}[c+dx])^2}-\frac{119\,\mathrm{Sec}[c+dx]^{5/2}\,\mathrm{Sin}[c+dx]}{30d\,(a^3+a^3\,\mathrm{Sec}[c+dx])}$$

Result (type 5, 516 leaves):

$$\left(119\sqrt{2}\,e^{-i(2c+dx)}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\left(1+e^{2i(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i(c+dx)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i(c+dx)}\right]\right)\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^3\right)\Big/\left(5d\left(a+a\,\text{Sec}[c+dx]\right)^3\right)+$$

$$\left(22\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\sqrt{\text{Cos}[c+dx]}\,\text{Csc}\left[\frac{c}{2}\right]\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^{7/2}\,\text{Sin}[c]\right)\Big/\left(d\left(a+a\,\text{Sec}[c+dx]\right)^3\right)+\left(\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\text{Sec}[c+dx]^{7/2}\left(-\frac{238\,\text{Cos}[dx]\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]}{5d}+\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c]\left(-25\,\text{Sin}\left[\frac{c}{2}\right]+33\,\text{Sin}\left[\frac{3c}{2}\right]\right)}{3d}+\frac{116\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\text{Sin}\left[\frac{dx}{2}\right]}{3d}+\frac{52\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\text{Sin}\left[\frac{dx}{2}\right]}{15d}+\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^5\text{Sin}\left[\frac{dx}{2}\right]}{5d}+\frac{16\,\text{Sec}[c]\,\text{Sec}[c+dx]\,\text{Sin}[dx]}{3d}+\frac{52\,\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{15d}+\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\text{Tan}\left[\frac{c}{2}\right]}{5d}\right)\right)\Big/\left(a+a\,\text{Sec}[c+dx]\right)^3$$

Problem 210: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Sec}[c+dx]^{9/2}}{\left(a+a\,\text{Sec}[c+dx]\right)^3}\,dx$$

Optimal (type 4, 221 leaves, 9 steps):

$$-\frac{49\sqrt{\text{Cos}[c+dx]}\,\text{EllipticE}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{10a^3d}-\frac{13\sqrt{\text{Cos}[c+dx]}\,\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{6a^3d}+\frac{49\sqrt{\text{Sec}[c+dx]}\,\text{Sin}[c+dx]}{10a^3d}-\frac{\text{Sec}[c+dx]^{7/2}\,\text{Sin}[c+dx]}{5d\left(a+a\,\text{Sec}[c+dx]\right)^3}-\frac{8\,\text{Sec}[c+dx]^{5/2}\,\text{Sin}[c+dx]}{15ad\left(a+a\,\text{Sec}[c+dx]\right)^2}-\frac{13\,\text{Sec}[c+dx]^{3/2}\,\text{Sin}[c+dx]}{6d\left(a^3+a^3\,\text{Sec}[c+dx]\right)}$$

Result (type 5, 371 leaves):

$$\frac{1}{15\, a^3\, d\, \left(1+\text{Sec}[c+d\, x]\right)^3}2\, \text{Cos}\left[\frac{1}{2}\, \left(c+d\, x\right)\right]^6 \left(-\frac{1}{-1+e^{2\, i\, c}}2\, i\, \sqrt{2}\, e^{-i\, (c+d\, x)}\, \sqrt{\frac{e^{i\, (c+d\, x)}}{1+e^{2\, i\, (c+d\, x)}}}\, \left(147\, \left(1+e^{2\, i\, (c+d\, x)}\right)+147\, \left(-1+e^{2\, i\, c}\right)\, \sqrt{1+e^{2\, i\, (c+d\, x)}}\, \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\, i\, (c+d\, x)}\right]-65\, e^{i\, (c+d\, x)}\, \left(-1+e^{2\, i\, c}\right)\, \sqrt{1+e^{2\, i\, (c+d\, x)}}\, \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\, i\, (c+d\, x)}\right]\right)+\frac{1}{32}\, \left(1284\, \text{Cos}\left[\frac{1}{2}\, \left(c-d\, x\right)\right]+921\, \text{Cos}\left[\frac{1}{2}\, \left(3\, c+d\, x\right)\right]+1243\, \text{Cos}\left[\frac{1}{2}\, \left(c+3\, d\, x\right)\right]+374\, \text{Cos}\left[\frac{1}{2}\, \left(5\, c+3\, d\, x\right)\right]+670\, \text{Cos}\left[\frac{1}{2}\, \left(3\, c+5\, d\, x\right)\right]+65\, \text{Cos}\left[\frac{1}{2}\, \left(7\, c+5\, d\, x\right)\right]+147\, \text{Cos}\left[\frac{1}{2}\, \left(5\, c+7\, d\, x\right)\right]\right)\, \text{Csc}\left[\frac{c}{2}\right]\, \text{Sec}\left[\frac{c}{2}\right]\, \text{Sec}\left[\frac{1}{2}\, \left(c+d\, x\right)\right]^5\, \sqrt{\text{Sec}[c+d\, x]}\right)\, \text{Sec}[c+d\, x]^3$$

Problem 211: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\, x]^{7/2}}{\left(a+a\, \text{Sec}[c+d\, x]\right)^3}\, dx$$

Optimal (type 4, 195 leaves, 8 steps):

$$\frac{9\, \sqrt{\text{Cos}[c+d\, x]}\, \text{EllipticE}\left[\frac{1}{2}\, \left(c+d\, x\right),2\right]\, \sqrt{\text{Sec}[c+d\, x]}}{10\, a^3\, d}+\frac{\sqrt{\text{Cos}[c+d\, x]}\, \text{EllipticF}\left[\frac{1}{2}\, \left(c+d\, x\right),2\right]\, \sqrt{\text{Sec}[c+d\, x]}}{2\, a^3\, d}-\frac{\text{Sec}[c+d\, x]^{5/2}\, \text{Sin}[c+d\, x]}{5\, d\, \left(a+a\, \text{Sec}[c+d\, x]\right)^3}-\frac{2\, \text{Sec}[c+d\, x]^{3/2}\, \text{Sin}[c+d\, x]}{5\, a\, d\, \left(a+a\, \text{Sec}[c+d\, x]\right)^2}-\frac{9\, \sqrt{\text{Sec}[c+d\, x]}\, \text{Sin}[c+d\, x]}{10\, d\, \left(a^3+a^3\, \text{Sec}[c+d\, x]\right)}$$

Result (type 5, 474 leaves):

$$\left(9\sqrt{2}\, e^{-i\,(2c+d x)} \sqrt{\frac{e^{i\,(c+d x)}}{1+e^{2 i\,(c+d x)}}}\, \text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \text{Csc}\left[\frac{c}{2}\right] \left(1+e^{2 i\,(c+d x)}+\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i\,(c+d x)}}\, \text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i\,(c+d x)}\right]\right) \text{Sec}\left[\frac{c}{2}\right] \text{Sec}[c+d x]^3\right) \Big/ \left(5 d\,(a+a\,\text{Sec}[c+d x])^3\right)+$$

$$\left(2\,\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \sqrt{\text{Cos}[c+d x]}\, \text{Csc}\left[\frac{c}{2}\right] \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right] \text{Sec}\left[\frac{c}{2}\right] \text{Sec}[c+d x]^{7/2} \text{Sin}[c]\right) \Big/ \left(d\,(a+a\,\text{Sec}[c+d x])^3\right)+$$

$$\left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \text{Sec}[c+d x]^{7/2} \left(-\frac{18\,\text{Cos}[d x]\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]}{5 d}+\frac{4\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]\text{Sin}\left[\frac{d x}{2}\right]}{d}+\frac{4\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^3\text{Sin}\left[\frac{d x}{2}\right]}{5 d}+\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^5\text{Sin}\left[\frac{d x}{2}\right]}{5 d}+\frac{4\,\text{Tan}\left[\frac{c}{2}\right]}{d}+\frac{4\,\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{5 d}+\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^4\text{Tan}\left[\frac{c}{2}\right]}{5 d}\right)\right) \Big/ (a+a\,\text{Sec}[c+d x])^3$$

Problem 212: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 195 leaves, 8 steps):

$$\frac{\sqrt{\text{Cos}[c+d x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{10 a^3 d}+\frac{\sqrt{\text{Cos}[c+d x]}\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]\sqrt{\text{Sec}[c+d x]}}{6 a^3 d}-\frac{\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{5 d\,(a+a\,\text{Sec}[c+d x])^3}-\frac{4\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{15 a d\,(a+a\,\text{Sec}[c+d x])^2}+\frac{\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{6 d\,(a^3+a^3\,\text{Sec}[c+d x])}$$

Result (type 5, 371 leaves):

$$\frac{1}{15\,a^3\,d\,\left(1+\operatorname{Sec}[c+d\,x]\right)^3}\,2\operatorname{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^6\left(\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\right.$$

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

$$\left.5\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)-$$

$$\frac{1}{32}\left(36\operatorname{Cos}\left[\frac{1}{2}\left(c-d\,x\right)\right]+9\operatorname{Cos}\left[\frac{1}{2}\left(3\,c+d\,x\right)\right]+7\operatorname{Cos}\left[\frac{1}{2}\left(c+3\,d\,x\right)\right]+26\operatorname{Cos}\left[\frac{1}{2}\left(5\,c+3\,d\,x\right)\right]+\right.$$

$$\left.10\operatorname{Cos}\left[\frac{1}{2}\left(3\,c+5\,d\,x\right)\right]+5\operatorname{Cos}\left[\frac{1}{2}\left(7\,c+5\,d\,x\right)\right]+3\operatorname{Cos}\left[\frac{1}{2}\left(5\,c+7\,d\,x\right)\right]\right)$$

$$\left.\operatorname{Csc}\left[\frac{c}{2}\right]\operatorname{Sec}\left[\frac{c}{2}\right]\operatorname{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5\sqrt{\operatorname{Sec}[c+d\,x]}\right)\operatorname{Sec}[c+d\,x]^3$$

Problem 213: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 195 leaves, 8 steps):

$$-\frac{\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),2\right]\sqrt{\operatorname{Sec}[c+d\,x]}}{10\,a^3\,d}+\frac{\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),2\right]\sqrt{\operatorname{Sec}[c+d\,x]}}{6\,a^3\,d}+$$

$$\frac{\operatorname{Sec}[c+d\,x]^{3/2}\operatorname{Sin}[c+d\,x]}{5\,d\left(a+a\operatorname{Sec}[c+d\,x]\right)^3}-\frac{\sqrt{\operatorname{Sec}[c+d\,x]}\,\operatorname{Sin}[c+d\,x]}{15\,a\,d\left(a+a\operatorname{Sec}[c+d\,x]\right)^2}+\frac{\sqrt{\operatorname{Sec}[c+d\,x]}\,\operatorname{Sin}[c+d\,x]}{6\,d\left(a^3+a^3\operatorname{Sec}[c+d\,x]\right)}$$

Result (type 5, 371 leaves):

$$\frac{1}{15\,a^3\,d\,\left(1+\mathrm{Sec}[c+d\,x]\right)^3}$$
$$2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^6\left(-\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\left(3\,\left(1+e^{2\,i\,(c+d\,x)}\right)+\right.\right.$$
$$3\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$\left.5\,e^{i\,(c+d\,x)}\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)+$$
$$\frac{1}{32}\left(36\,\mathrm{Cos}\left[\frac{1}{2}\,(c-d\,x)\right]+9\,\mathrm{Cos}\left[\frac{1}{2}\,(3\,c+d\,x)\right]+17\,\mathrm{Cos}\left[\frac{1}{2}\,(c+3\,d\,x)\right]+16\,\mathrm{Cos}\left[\frac{1}{2}\,(5\,c+3\,d\,x)\right]+\right.$$
$$\left.20\,\mathrm{Cos}\left[\frac{1}{2}\,(3\,c+5\,d\,x)\right]-5\,\mathrm{Cos}\left[\frac{1}{2}\,(7\,c+5\,d\,x)\right]+3\,\mathrm{Cos}\left[\frac{1}{2}\,(5\,c+7\,d\,x)\right]\right)$$
$$\left.\mathrm{Csc}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\sqrt{\mathrm{Sec}[c+d\,x]}\right)\,\mathrm{Sec}[c+d\,x]^3$$

Problem 214: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 195 leaves, 8 steps):

$$-\frac{9\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{10\,a^3\,d}+$$
$$\frac{\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\sqrt{\mathrm{Sec}[c+d\,x]}}{2\,a^3\,d}-\frac{\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{5\,d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3}+$$
$$\frac{2\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{5\,a\,d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2}+\frac{\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{2\,d\,\left(a^3+a^3\,\mathrm{Sec}[c+d\,x]\right)}$$

Result (type 5, 474 leaves):

$$-\left(\left(\left(9\sqrt{2}\,e^{-i\,(2c+dx)}\sqrt{\frac{e^{i\,(c+dx)}}{1+e^{2i\,(c+dx)}}}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\mathrm{Csc}\left[\frac{c}{2}\right]\left(1+e^{2i\,(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i\,(c+dx)}}\;\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i\,(c+dx)}\right]\right)\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+dx]^3\right)\Big/\left(5d\left(a+a\,\mathrm{Sec}[c+dx]\right)^3\right)\right)+$$

$$\left(2\,\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\sqrt{\mathrm{Cos}[c+dx]}\;\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+dx]^{7/2}\,\mathrm{Sin}[c]\right)\Big/\left(d\left(a+a\,\mathrm{Sec}[c+dx]\right)^3\right)+$$

$$\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\mathrm{Sec}[c+dx]^{7/2}\left(\frac{18\,\mathrm{Cos}[dx]\,\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}\right]}{5d}-\frac{12\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\mathrm{Sin}\left[\frac{dx}{2}\right]}{d}+\frac{16\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\mathrm{Sin}\left[\frac{dx}{2}\right]}{5d}-\frac{2\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^5\mathrm{Sin}\left[\frac{dx}{2}\right]}{5d}-\frac{12\,\mathrm{Tan}\left[\frac{c}{2}\right]}{d}+\frac{16\,\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\mathrm{Tan}\left[\frac{c}{2}\right]}{5d}-\frac{2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\mathrm{Tan}\left[\frac{c}{2}\right]}{5d}\right)\right)\Big/\left(a+a\,\mathrm{Sec}[c+dx]\right)^3$$

Problem 215: Result unnecessarily involves higher level functions.

$$\int\frac{1}{\sqrt{\mathrm{Sec}[c+dx]}\,\left(a+a\,\mathrm{Sec}[c+dx]\right)^3}\,dx$$

Optimal (type 4, 195 leaves, 8 steps):

$$\frac{49\sqrt{\mathrm{Cos}[c+dx]}\;\mathrm{EllipticE}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{10a^3d}-\frac{13\sqrt{\mathrm{Cos}[c+dx]}\;\mathrm{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\mathrm{Sec}[c+dx]}}{6a^3d}-\frac{\sqrt{\mathrm{Sec}[c+dx]}\;\mathrm{Sin}[c+dx]}{5d\left(a+a\,\mathrm{Sec}[c+dx]\right)^3}-\frac{8\sqrt{\mathrm{Sec}[c+dx]}\;\mathrm{Sin}[c+dx]}{15ad\left(a+a\,\mathrm{Sec}[c+dx]\right)^2}-\frac{13\sqrt{\mathrm{Sec}[c+dx]}\;\mathrm{Sin}[c+dx]}{6d\left(a^3+a^3\,\mathrm{Sec}[c+dx]\right)}$$

Result (type 5, 386 leaves):

$$\frac{1}{15\,a^3\,d\,\left(1+\operatorname{Sec}[c+d\,x]\right)^3}\,2\operatorname{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^6\left(\frac{1}{-1+e^{2\,i\,c}}2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\sqrt{\frac{e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}}\,\left(147\,\left(1+e^{2\,i\,(c+d\,x)}\right)+\right.\right.$$
$$147\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\operatorname{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+$$
$$\left.65\,e^{i\,(c+d\,x)}\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\operatorname{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)-$$
$$\frac{1}{32}\left(1134\operatorname{Cos}\left[\frac{1}{2}\,(c-d\,x)\right]+1071\operatorname{Cos}\left[\frac{1}{2}\,(3\,c+d\,x)\right]+923\operatorname{Cos}\left[\frac{1}{2}\,(c+3\,d\,x)\right]+\right.$$
$$694\operatorname{Cos}\left[\frac{1}{2}\,(5\,c+3\,d\,x)\right]+470\operatorname{Cos}\left[\frac{1}{2}\,(3\,c+5\,d\,x)\right]+$$
$$\left.265\operatorname{Cos}\left[\frac{1}{2}\,(7\,c+5\,d\,x)\right]+117\operatorname{Cos}\left[\frac{1}{2}\,(5\,c+7\,d\,x)\right]+30\operatorname{Cos}\left[\frac{1}{2}\,(9\,c+7\,d\,x)\right]\right)$$
$$\left.\operatorname{Csc}\left[\frac{c}{2}\right]\operatorname{Sec}\left[\frac{c}{2}\right]\operatorname{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\,\sqrt{\operatorname{Sec}[c+d\,x]}\right)\operatorname{Sec}[c+d\,x]^3$$

Problem 216: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 221 leaves, 9 steps):

$$-\frac{119\,\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\operatorname{Sec}[c+d\,x]}}{10\,a^3\,d}+$$
$$\frac{11\,\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\operatorname{Sec}[c+d\,x]}}{2\,a^3\,d}+$$
$$\frac{11\operatorname{Sin}[c+d\,x]}{2\,a^3\,d\,\sqrt{\operatorname{Sec}[c+d\,x]}}-\frac{\operatorname{Sin}[c+d\,x]}{5\,d\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\left(a+a\operatorname{Sec}[c+d\,x]\right)^3}-$$
$$\frac{2\operatorname{Sin}[c+d\,x]}{3\,a\,d\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\left(a+a\operatorname{Sec}[c+d\,x]\right)^2}-\frac{119\operatorname{Sin}[c+d\,x]}{30\,d\,\sqrt{\operatorname{Sec}[c+d\,x]}\,\left(a^3+a^3\operatorname{Sec}[c+d\,x]\right)}$$

Result (type 5, 529 leaves):

$$-\left(\left(\left(119\sqrt{2}\,e^{-i(2c+dx)}\sqrt{\frac{e^{i(c+dx)}}{1+e^{2i(c+dx)}}}\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\left(1+e^{2i(c+dx)}+\left(-1+e^{2ic}\right)\sqrt{1+e^{2i(c+dx)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2i(c+dx)}\right]\right)\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^3\right)\Big/\left(5d\left(a+a\,\text{Sec}[c+dx]\right)^3\right)\right)+$$

$$\left(22\,\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\sqrt{\text{Cos}[c+dx]}\,\text{Csc}\left[\frac{c}{2}\right]\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+dx]^{7/2}\,\text{Sin}[c]\right)\Big/\left(d\left(a+a\,\text{Sec}[c+dx]\right)^3\right)+\left(\text{Cos}\left[\frac{c}{2}+\frac{dx}{2}\right]^6\text{Sec}[c+dx]^{7/2}\left(\frac{2\left(89+30\,\text{Cos}[2c]\right)\text{Cos}[dx]\,\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]}{5d}+\frac{8\,\text{Cos}[2dx]\,\text{Sin}[2c]}{3d}-\frac{172\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]\text{Sin}\left[\frac{dx}{2}\right]}{3d}+\frac{88\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^3\text{Sin}\left[\frac{dx}{2}\right]}{15d}-\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^5\text{Sin}\left[\frac{dx}{2}\right]}{5d}-\frac{48\,\text{Cos}[c]\,\text{Sin}[dx]}{d}+\frac{8\,\text{Cos}[2c]\,\text{Sin}[2dx]}{3d}-\frac{172\,\text{Tan}\left[\frac{c}{2}\right]}{3d}+\frac{88\,\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{15d}-\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]^4\text{Tan}\left[\frac{c}{2}\right]}{5d}\right)\right)\Big/\left(a+a\,\text{Sec}[c+dx]\right)^3$$

Problem 217: Result unnecessarily involves higher level functions.

$$\int\frac{1}{\text{Sec}[c+dx]^{5/2}\left(a+a\,\text{Sec}[c+dx]\right)^3}\,dx$$

Optimal (type 4, 247 leaves, 10 steps):

$$\frac{231\sqrt{\text{Cos}[c+dx]}\,\text{EllipticE}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{10a^3d}-\frac{21\sqrt{\text{Cos}[c+dx]}\,\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]\sqrt{\text{Sec}[c+dx]}}{2a^3d}+\frac{77\,\text{Sin}[c+dx]}{10a^3d\,\text{Sec}[c+dx]^{3/2}}-\frac{21\,\text{Sin}[c+dx]}{2a^3d\sqrt{\text{Sec}[c+dx]}}-\frac{\text{Sin}[c+dx]}{5d\,\text{Sec}[c+dx]^{3/2}\left(a+a\,\text{Sec}[c+dx]\right)^3}-\frac{4\,\text{Sin}[c+dx]}{5ad\,\text{Sec}[c+dx]^{3/2}\left(a+a\,\text{Sec}[c+dx]\right)^2}-\frac{63\,\text{Sin}[c+dx]}{10d\,\text{Sec}[c+dx]^{3/2}\left(a^3+a^3\,\text{Sec}[c+dx]\right)}$$

Result (type 5, 332 leaves):

$$-\frac{1}{5\,a^3\,d\,\left(1+e^{i\,(c+d\,x)}\right)^5\,\left(1+\mathrm{Sec}[c+d\,x]\right)^3}\,2\,i\,e^{-3\,i\,(c+d\,x)}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^6\left(-1+5\,e^{i\,(c+d\,x)}+369\,e^{2\,i\,(c+d\,x)}+1505\,e^{3\,i\,(c+d\,x)}+2900\,e^{4\,i\,(c+d\,x)}+3590\,e^{5\,i\,(c+d\,x)}+3340\,e^{6\,i\,(c+d\,x)}+2182\,e^{7\,i\,(c+d\,x)}+805\,e^{8\,i\,(c+d\,x)}+93\,e^{9\,i\,(c+d\,x)}-5\,e^{10\,i\,(c+d\,x)}+e^{11\,i\,(c+d\,x)}-210\,i\,e^{3\,i\,(c+d\,x)}\,\left(1+e^{i\,(c+d\,x)}\right)^5\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]-462\,e^{2\,i\,(c+d\,x)}\,\left(1+e^{i\,(c+d\,x)}\right)^5\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\,\frac{1}{2},\,\frac{3}{4},\,-e^{2\,i\,(c+d\,x)}\right]\right)\,\mathrm{Sec}[c+d\,x]^{7/2}$$

Problem 218: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]^{5/2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 3, 116 leaves, 4 steps):

$$\frac{3\,\sqrt{a}\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{4\,d}+\frac{3\,a\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{4\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{a\,\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Sin}[c+d\,x]}{2\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}$$

Result (type 3, 434 leaves):

$$\frac{1}{32\,\sqrt{2}\,d\,\sqrt{\mathrm{Sec}[c+d\,x]}}\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{a\,\left(1+\mathrm{Sec}[c+d\,x]\right)}\left(-12\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\,\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\,\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]-12\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\,\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\,\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+\mathrm{Sec}[c+d\,x]^2\left(6\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\,\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\,\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\mathrm{Cos}[2\,(c+d\,x)]\left(6\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\left(\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\right)+4\,\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+12\,\sqrt{2}\,\mathrm{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)\right)$$

Problem 219: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 72 leaves, 3 steps):

$$\frac{\sqrt{a}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}+\frac{a\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 3, 306 leaves):

$$\frac{1}{4\sqrt{2}\,d\,\sqrt{\text{Sec}[c+d\,x]}}\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{a\,(1+\text{Sec}[c+d\,x])}$$
$$\left(-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]-\right.$$
$$2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]+$$
$$2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$\left.\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+4\sqrt{2}\,\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

Problem 220: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 37 leaves, 2 steps):

$$\frac{2\sqrt{a}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}$$

Result (type 3, 283 leaves):

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

Problem 225: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 160 leaves, 6 steps):

$$\frac{11\,a^{3/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{8\,d}+\frac{11\,a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{8\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+$$
$$\frac{11\,a^2\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{12\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a^2\,\text{Sec}[c+d\,x]^{7/2}\,\text{Sin}[c+d\,x]}{3\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 3, 456 leaves):

$$\frac{1}{384\sqrt{2}\, d\,\sqrt{\text{Sec}[c+d x]}}\, a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]\sqrt{a\,(1+\text{Sec}[c+d x])}\left(-264\, i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]-264\, i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]+\text{Sec}[c+d x]^3\left(99\,\text{Cos}[c+d x]\left(2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+33\,\text{Cos}[3(c+d x)]\left(2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+4\sqrt{2}\left(54\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]+11\,\text{Sin}\left[\frac{3}{2}(c+d x)\right]+33\,\text{Sin}\left[\frac{5}{2}(c+d x)\right]\right)\right)\right)$$

Problem 226: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{7\, a^{3/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{4 d}+\frac{7\, a^2\,\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{4 d\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a^2\,\text{Sec}[c+d x]^{5/2}\,\text{Sin}[c+d x]}{2 d\sqrt{a+a\,\text{Sec}[c+d x]}}$$

Result (type 3, 432 leaves):

$$-\frac{1}{32\sqrt{2}\,d\,\sqrt{\mathrm{Sec}[c+d\,x]}}\,a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\left(28\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+\right.$$
$$28\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+\mathrm{Sec}[c+d\,x]^2$$
$$\left(7\,\mathrm{Cos}[2\,(c+d\,x)]\left(-2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\right.\right.\right.$$
$$\left.\left.\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)+$$
$$12\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+7\left(-2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\right.$$
$$\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$\left.\left.\left.\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\sqrt{2}\,\mathrm{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)\right)\right)$$

Problem 227: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 75 leaves, 4 steps):

$$\frac{3\,a^{3/2}\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{d}+\frac{a^2\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}$$

Result (type 3, 307 leaves):

$$\frac{1}{4\sqrt{2}\,d\,\sqrt{\mathrm{Sec}[c+d\,x]}}\,a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\left(-6\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]-\right.$$
$$6\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+$$
$$6\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\,\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$
$$\left.3\,\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+4\sqrt{2}\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

Problem 228: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 76 leaves, 4 steps):

$$\frac{2 a^{3/2} \operatorname{ArcSinh}\left[\frac{\sqrt{a} \operatorname{Tan}[c+d x]}{\sqrt{a+a \operatorname{Sec}[c+d x]}}\right]}{d} + \frac{2 a^2 \sqrt{\operatorname{Sec}[c + d x]} \operatorname{Sin}[c + d x]}{d \sqrt{a + a \operatorname{Sec}[c + d x]}}$$

Result (type 3, 301 leaves):

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

Problem 233: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 200 leaves, 6 steps):

$$\frac{163 a^{5/2} \operatorname{ArcSinh}\left[\frac{\sqrt{a} \operatorname{Tan}[c+d x]}{\sqrt{a+a \operatorname{Sec}[c+d x]}}\right]}{64 d} + \frac{163 a^3 \operatorname{Sec}[c + d x]^{3/2} \operatorname{Sin}[c + d x]}{64 d \sqrt{a + a \operatorname{Sec}[c + d x]}} +$$
$$\frac{163 a^3 \operatorname{Sec}[c + d x]^{5/2} \operatorname{Sin}[c + d x]}{96 d \sqrt{a + a \operatorname{Sec}[c + d x]}} + \frac{17 a^3 \operatorname{Sec}[c + d x]^{7/2} \operatorname{Sin}[c + d x]}{24 d \sqrt{a + a \operatorname{Sec}[c + d x]}} +$$
$$\frac{a^2 \operatorname{Sec}[c + d x]^{7/2} \sqrt{a + a \operatorname{Sec}[c + d x]} \operatorname{Sin}[c + d x]}{4 d}$$

Result (type 3, 582 leaves):

$$-\frac{1}{6144\,\sqrt{2}\,d\,\sqrt{\text{Sec}[c+d\,x]}}\,a^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{a\,(1+\text{Sec}[c+d\,x])}$$

$$\left(7824\,\mathbb{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+\right.$$

$$7824\,\mathbb{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+$$

$$\text{Sec}[c+d\,x]^4\,\left(-2934\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\right.$$

$$1467\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-1956\,\text{Cos}[2\,(c+d\,x)]$$

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

$$\left.\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)-489\,\text{Cos}[4\,(c+d\,x)]$$

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

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

$$1467\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+2060\,\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-$$

$$\left.\left.6204\,\sqrt{2}\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]-652\,\sqrt{2}\,\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]-1956\,\sqrt{2}\,\text{Sin}\left[\frac{7}{2}\,(c+d\,x)\right]\right)\right)$$

Problem 234: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 160 leaves, 5 steps):

$$\frac{25\,a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{8\,d}+\frac{25\,a^3\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{8\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+$$

$$\frac{13\,a^3\,\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{12\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a^2\,\text{Sec}[c+d\,x]^{5/2}\,\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d}$$

Result (type 3, 458 leaves):

$$\frac{1}{384\sqrt{2}\,d\sqrt{\mathrm{Sec}[c+d\,x]}}\,a^2\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}$$
$$\left(-600\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]-\right.$$
$$600\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]+$$
$$\mathrm{Sec}[c+d\,x]^3\left(225\,\mathrm{Cos}[c+d\,x]\left(2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\right.\right.\right.$$
$$\left.\left.\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+$$
$$75\,\mathrm{Cos}[3\,(c+d\,x)]\left(2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\right.\right.$$
$$\left.\left.\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+$$
$$\left.\left.4\sqrt{2}\left(114\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]-7\,\mathrm{Sin}\left[\frac{3}{2}(c+d\,x)\right]+75\,\mathrm{Sin}\left[\frac{5}{2}(c+d\,x)\right]\right)\right)\right)$$

Problem 235: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\sqrt{\mathrm{Sec}[c+d\,x]}\,(a+a\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 3, 120 leaves, 4 steps):

$$\frac{19\,a^{5/2}\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{4\,d}+\frac{9\,a^3\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{4\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+$$
$$\frac{a^2\,\mathrm{Sec}[c+d\,x]^{3/2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{2\,d}$$

Result (type 3, 435 leaves):

$$-\frac{1}{32\sqrt{2}\, d\sqrt{\text{Sec}[c+d x]}} a^2 \text{Sec}\left[\frac{1}{2}(c+d x)\right]\sqrt{a\,(1+\text{Sec}[c+d x])}$$
$$\left(76\, i\, \text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]+\right.$$
$$76\, i\, \text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]+$$
$$\text{Sec}[c+d x]^2\left(-38\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+19\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\right.\right.$$
$$\left.\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+19\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+$$
$$19\,\text{Cos}[2\,(c+d x)]\left(-2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\right.\right.$$
$$\left.\left.\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+$$
$$\left.\left.28\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]-44\sqrt{2}\,\text{Sin}\left[\frac{3}{2}(c+d x)\right]\right)\right)$$

Problem 236: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 112 leaves, 4 steps):

$$\frac{5\,a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{d}+\frac{a^3\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{d\sqrt{a+a\,\text{Sec}[c+d x]}}+$$
$$\frac{a^2\sqrt{\text{Sec}[c+d x]}\,\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{d}$$

Result (type 3, 309 leaves):

$$\frac{1}{4\sqrt{2}\,d\,\sqrt{\text{Sec}[c+d\,x]}}\,a^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{a\,(1+\text{Sec}[c+d\,x])}$$
$$\left(-10\,\mathrm{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]-\right.$$
$$10\,\mathrm{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+$$
$$10\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-5\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$
$$\left.5\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+4\,\sqrt{2}\,\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)$$

Problem 237: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 118 leaves, 4 steps):

$$\frac{2\,a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{d}+$$
$$\frac{14\,a^3\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{2\,a^2\,\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d\,\sqrt{\text{Sec}[c+d\,x]}}$$

Result (type 3, 320 leaves):

$$\frac{1}{6\sqrt{2}\,d\,\sqrt{\text{Sec}[c+d\,x]}}\,a^2\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{a\,(1+\text{Sec}[c+d\,x])}$$
$$\left(-6\,\mathrm{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]-\right.$$
$$6\,\mathrm{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+$$
$$6\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-3\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$
$$3\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$\left.30\,\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+2\,\sqrt{2}\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)$$

Problem 243: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Sec}[e+f x]}\ \sqrt{a+a\,\text{Sec}[e+f x]}\ dx$$

Optimal (type 3, 37 leaves, 2 steps):

$$\frac{2\sqrt{a}\ \text{ArcSinh}\left[\frac{\sqrt{a}\ \text{Tan}[e+f x]}{\sqrt{a+a\,\text{Sec}[e+f x]}}\right]}{f}$$

Result (type 3, 283 leaves):

$$\left(\left(-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(e+f x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\text{Sin}\left[\frac{1}{4}(e+f x)\right]}\right]-\right.\right.$$
$$2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(e+f x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\text{Sin}\left[\frac{1}{4}(e+f x)\right]}\right]+$$
$$2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[2-\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{2}\ \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-$$
$$\left.\text{Log}\left[2+\sqrt{2}\ \text{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{2}\ \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]\sqrt{a\left(1+\text{Sec}[e+f x]\right)}\right)\Big/\left(2\sqrt{2}\ f\sqrt{\text{Sec}[e+f x]}\right)$$

Problem 244: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \sqrt{-\text{Sec}[e+f x]}\ \sqrt{a-a\,\text{Sec}[e+f x]}\ dx$$

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

$$\frac{2\sqrt{a}\ \text{ArcSinh}\left[\frac{\sqrt{a}\ \text{Tan}[e+f x]}{\sqrt{a-a\,\text{Sec}[e+f x]}}\right]}{f}$$

Result (type 3, 299 leaves):

$$\frac{1}{2\sqrt{2}\, f\sqrt{-\text{Sec}[e+f x]}}$$

$$\text{Csc}\left[\frac{1}{2}(e+f x)\right]\left(-2\, i\, \text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(e+f x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\text{Sin}\left[\frac{1}{4}(e+f x)\right]}\right]+\right.$$

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

$$4\,\text{ArcTanh}\left[\sqrt{2}\,\text{Cos}\left[\frac{1}{4}(2 e+f x)\right]\text{Sec}\left[\frac{f x}{4}\right]+\text{Tan}\left[\frac{f x}{4}\right]\right]+$$

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

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

Problem 245: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 128 leaves, 6 steps):

$$-\frac{\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{\sqrt{a}\, d}+\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{\sqrt{2}\sqrt{a+a\,\text{Sec}[c+d x]}}\right]}{\sqrt{a}\, d}+\frac{\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{d\sqrt{a+a\,\text{Sec}[c+d x]}}$$

Result (type 3, 362 leaves):

$$\frac{1}{2\sqrt{2}\, d\sqrt{a\,(1+\text{Sec}[c+d x])}}$$

$$\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{\text{Sec}[c+d x]}\left(2\, i\, \text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]+\right.$$

$$2\, i\, \text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]-4\sqrt{2}$$

$$\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]+4\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]+\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]-$$

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

$$\left.\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+4\sqrt{2}\,\text{Sec}[c+d x]\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)$$

Problem 246: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 95 leaves, 5 steps):

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

Result (type 3, 394 leaves):

$$\frac{1}{\left(\left(-1+i\right)+\sqrt{2}\right)d\sqrt{a\left(1+\text{Sec}[c+d\,x]\right)}}\left(\frac{1}{2}+\frac{i}{2}\right)\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$
$$\left(2\left(\left(-1-i\right)+\sqrt{2}\right)\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}\right]+\right.$$
$$2\left(\left(-1-i\right)+\sqrt{2}\right)\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}\right]-$$
$$i\left(\left(-4+\left(2+2\,i\right)\sqrt{2}\right)\text{Log}\left[\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]+\right.$$
$$\left(4-\left(2+2\,i\right)\sqrt{2}\right)\text{Log}\left[\text{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]-\left(\left(-1-i\right)+\sqrt{2}\right)$$
$$\left(2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]-\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]-\right.$$
$$\left.\left.\left.\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]\right)\right)\right)\sqrt{\text{Sec}[c+d\,x]}$$

Problem 251: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^{7/2}}{\left(a+a\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 174 leaves, 7 steps):

$$-\frac{3\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{a^{3/2}\,d}+\frac{9\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{2\sqrt{2}\,a^{3/2}\,d}-$$
$$\frac{\text{Sec}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{2\,d\left(a+a\,\text{Sec}[c+d\,x]\right)^{3/2}}+\frac{3\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{2\,a\,d\sqrt{a+a\,\text{Sec}[c+d\,x]}}$$

Result (type 3, 457 leaves):

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

Problem 252: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^{5/2}}{\left(a+a\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 134 leaves, 6 steps):

$$\frac{2\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{a^{3/2}\,d}-\frac{5\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d}-\frac{\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{2\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^{3/2}}$$

Result (type 3, 437 leaves):

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

$$\left(\frac{(4+4\,\mathrm{i})\,\left((-1-\mathrm{i})+\sqrt{2}\right)\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\,\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\,\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]}{(-1+\mathrm{i})+\sqrt{2}}-\right.$$

$$4\,\mathrm{i}\,\sqrt{2}\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\left(1+\sqrt{2}\right)\,\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\,\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]+$$

$$10\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]\right]-$$

$$10\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]\right]+4\,\sqrt{2}\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$

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

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

$$\left.\frac{1}{\left(\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]\right)^2}+\frac{1}{\left(\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]\right)^2}\right)$$

Problem 258: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[c+d\,x]^{9/2}}{\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 214 leaves, 8 steps):

$$-\frac{5\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{a^{5/2}\,d}+\frac{115\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,d}-$$

$$\frac{\mathrm{Sec}[c+d\,x]^{7/2}\,\mathrm{Sin}[c+d\,x]}{4\,d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^{5/2}}-\frac{15\,\mathrm{Sec}[c+d\,x]^{5/2}\,\mathrm{Sin}[c+d\,x]}{16\,a\,d\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^{3/2}}+\frac{35\,\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{16\,a^2\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}$$

Result (type 3, 1042 leaves):

$$\left(10\,\mathrm{i}\,\sqrt{2}\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}{-\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{4}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}\,(c+d\,x)\right]}\right]\right.$$

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

$$\left(10\,i\,\sqrt{2}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\sqrt{2}\,\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]\right.$$

$$\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}\right)\Big/\left(d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\right)-$$

$$\left(115\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}\right)\Big/$$

$$\left(4\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\right)+$$

$$\left(115\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}\right)\Big/$$

$$\left(4\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\right)-$$

$$\frac{40\,i\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}}{\left((-1+i)+\sqrt{2}\right)\left((1+i)+\sqrt{2}\right)d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}}+$$

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

$$\left(d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\right)+$$

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

$$\left(d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\right)+\frac{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^4}+$$

$$\frac{19\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^2}-$$

$$\frac{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^4}-$$

$$\frac{19\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^2}+$$

$$\frac{4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}-$$

$$\frac{4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{d\,(a\,(1+\text{Sec}[c+d\,x]))^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}$$

Problem 259: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]^{7/2}}{(a+a \text{Sec}[c+d x])^{5/2}} \, dx$$

Optimal (type 3, 174 leaves, 7 steps):

$$\frac{2 \text{ArcSinh}\left[\frac{\sqrt{a} \text{Tan}[c+d x]}{\sqrt{a+a \text{Sec}[c+d x]}}\right]}{a^{5/2} d}-\frac{43 \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{\sqrt{2} \sqrt{a+a \text{Sec}[c+d x]}}\right]}{16 \sqrt{2} a^{5/2} d}-\frac{\text{Sec}[c+d x]^{5/2} \text{Sin}[c+d x]}{4 d (a+a \text{Sec}[c+d x])^{5/2}}-\frac{11 \text{Sec}[c+d x]^{3/2} \text{Sin}[c+d x]}{16 a d (a+a \text{Sec}[c+d x])^{3/2}}$$

Result (type 3, 925 leaves):

$$-\left(\left(\left(4\,i\,\sqrt{2}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{-\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\sqrt{2}\,\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]\right.\right.\right.$$

$$\left.\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}\right)\bigg/\left(d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)\right)+$$

$$\left(\left(4+4\,i\right)\,\left(\left(-1-i\right)+\sqrt{2}\right)\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\sqrt{2}\,\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]\right.$$

$$\left.\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}\right)\bigg/\left(\left(\left(-1+i\right)+\sqrt{2}\right)\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)+$$

$$\left(43\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}\right)\bigg/$$

$$\left(4\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)-$$

$$\left(43\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}\right)\bigg/$$

$$\left(4\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)+$$

$$\frac{4\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}}{d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}}-$$

$$\left(2\,\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\,\text{Sec}[c+d\,x]^{5/2}\right)\bigg/$$

$$\left(d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)+$$

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

$$\left.\text{Sec}[c+d\,x]^{5/2}\right)\bigg/\left(\left(\left(-1+i\right)+\sqrt{2}\right)\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\right)-$$

$$\frac{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\,\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^4}-$$

$$\frac{11\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\,\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^2}+$$

$$\frac{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\,\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^4}+$$

$$\frac{11\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^5\,\text{Sec}[c+d\,x]^{5/2}}{8\,d\,\left(a\,\left(1+\text{Sec}[c+d\,x]\right)\right)^{5/2}\,\left(\text{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right)^2}$$

Problem 265: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]^{7/2}}{\sqrt{1+\text{Sec}[c+d x]}}\, dx$$

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

$$-\frac{\sqrt{2}\,\text{ArcSinh}\left[\frac{\text{Tan}[c+d x]}{1+\text{Sec}[c+d x]}\right]}{d}+\frac{7\,\text{ArcSinh}\left[\frac{\text{Tan}[c+d x]}{\sqrt{1+\text{Sec}[c+d x]}}\right]}{4 d}-\frac{\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{4 d \sqrt{1+\text{Sec}[c+d x]}}+\frac{\text{Sec}[c+d x]^{5/2}\,\text{Sin}[c+d x]}{2 d \sqrt{1+\text{Sec}[c+d x]}}$$

Result (type 3, 542 leaves):

$$\frac{1}{32 d}\text{Cos}\left[\frac{1}{2}(c+d x)\right]\sqrt{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}$$
$$\left(-28\,\mathbb{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]-\right.$$
$$28\,\mathbb{i}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{1}{4}(c+d x)\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]}\right]+$$
$$\text{Sec}[c+d x]^2\left(16\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]-\right.$$
$$16\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]+\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]+14\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-$$
$$7\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+$$
$$\text{Cos}[2(c+d x)]\left(16\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]-\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]-\right.$$
$$16\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}(c+d x)\right]+\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right]+14\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-$$
$$7\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]-$$
$$\left.7\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)-$$
$$7\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]+$$
$$\left.\left.20\sqrt{2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]-4\sqrt{2}\,\text{Sin}\left[\frac{3}{2}(c+d x)\right]\right)\right)$$

Problem 266: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{\mathrm{Sec}[c+d\,x]^{5/2}}{\sqrt{1+\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 3, 85 leaves, 6 steps):

$$\frac{\sqrt{2}\,\mathrm{ArcSinh}\left[\frac{\mathrm{Tan}[c+d\,x]}{1+\mathrm{Sec}[c+d\,x]}\right]}{d}-\frac{\mathrm{ArcSinh}\left[\frac{\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Sec}[c+d\,x]}}\right]}{d}+\frac{\mathrm{Sec}[c+d\,x]^{3/2}\,\mathrm{Sin}[c+d\,x]}{d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}}$$

Result (type 3, 349 leaves):

$$\frac{1}{4\,d}\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}$$
$$\left(2\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]+\right.$$
$$2\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]}\right]-4\sqrt{2}$$
$$\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]+4\sqrt{2}\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{4}(c+d\,x)\right]\right]-$$
$$2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$\left.\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+4\sqrt{2}\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

Problem 267: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 54 leaves, 5 steps):

$$-\frac{\sqrt{2}\,\mathrm{ArcSinh}\left[\frac{\mathrm{Tan}[c+d\,x]}{1+\mathrm{Sec}[c+d\,x]}\right]}{d}+\frac{2\,\mathrm{ArcSinh}\left[\frac{\mathrm{Tan}[c+d\,x]}{\sqrt{1+\mathrm{Sec}[c+d\,x]}}\right]}{d}$$

Result (type 3, 384 leaves):

$$\frac{1}{\left(\left(-1+i\right)+\sqrt{2}\right)d}\left(\frac{1}{2}+\frac{i}{2}\right)\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{1}{1+\mathrm{Cos}[c+d\,x]}}$$
$$\left(2\left(\left(-1-i\right)+\sqrt{2}\right)\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}\right]+\right.$$
$$2\left(\left(-1-i\right)+\sqrt{2}\right)\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]}\right]-$$
$$i\left(\left(-4+\left(2+2\,i\right)\sqrt{2}\right)\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]+\right.$$
$$\left(4-\left(2+2\,i\right)\sqrt{2}\right)\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]+\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]-\left(\left(-1-i\right)+\sqrt{2}\right)$$
$$\left(2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]-\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]-\right.$$
$$\left.\left.\left.\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]\right)\right)\right)$$

Problem 268: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Sec}[c+d\,x]}}{\sqrt{1+\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 3, 27 leaves, 2 steps):

$$\frac{\sqrt{2}\,\mathrm{ArcSinh}\left[\frac{\mathrm{Tan}[c+d\,x]}{1+\mathrm{Sec}[c+d\,x]}\right]}{d}$$

Result (type 3, 78 leaves):

$$\frac{1}{d}2\,\mathrm{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]\sqrt{\frac{1}{1+\mathrm{Cos}[c+d\,x]}}$$
$$\left(-\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]+\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(c+d\,x\right)\right]+\mathrm{Sin}\left[\frac{1}{4}\left(c+d\,x\right)\right]\right]\right)$$

Problem 272: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 325 leaves, 4 steps):

$$\frac{6\,a\,e\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}\,\mathrm{Tan}[c+d\,x]}{5\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\left(4\times 3^{3/4}\,\sqrt{2+\sqrt{3}}\;a^2\,e\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(5\,d\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 160 leaves) :

$$-\left(\left(3\,i\,e\left(-4+4\,e^{i\,(c+d\,x)}+4\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/6}\mathrm{Hypergeometric2F1}\left[\frac{1}{6},\frac{5}{6},\frac{7}{6},-e^{2\,i\,(c+d\,x)}\right]+e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/6}\mathrm{Hypergeometric2F1}\left[\frac{2}{3},\frac{5}{6},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]\right)(e\,\mathrm{Sec}[c+d\,x])^{1/3}\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\right)\Big/\left(10\,d\left(1+e^{i\,(c+d\,x)}\right)\right)\right)$$

Problem 273: Result unnecessarily involves higher level functions.

$$\int (e\,\mathrm{Sec}[c+d\,x])^{1/3}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 280 leaves, 3 steps) :

$$\left(2\times 3^{3/4}\,\sqrt{2+\sqrt{3}}\;a^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(d\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 153 leaves) :

$$-\left(\left(3\,i\left(\frac{e\,e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}\right)^{1/3}\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/6}\left(4\,\text{Hypergeometric2F1}\left[\frac{1}{6},\frac{5}{6},\frac{7}{6},-e^{2\,i\,(c+d\,x)}\right]+e^{i\,(c+d\,x)}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{5}{6},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]\right)\sqrt{a\,(1+\text{Sec}[c+d\,x])}\right)\Big/\left(2\times 2^{2/3}\,d\,\left(1+e^{i\,(c+d\,x)}\right)\right)\right)$$

Problem 274: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 326 leaves, 4 steps):

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

Result (type 5, 231 leaves):

$$\frac{1}{16\times 2^{2/3}\,d\,e}3\,e^{-2\,i\,(c+d\,x)}\left(\frac{e\,e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}\right)^{1/3}\left(4\left(-1+e^{i\,(c+d\,x)}-e^{2\,i\,(c+d\,x)}+e^{3\,i\,(c+d\,x)}\right)+4\,e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/6}\text{Hypergeometric2F1}\left[\frac{1}{6},\frac{5}{6},\frac{7}{6},-e^{2\,i\,(c+d\,x)}\right]+e^{2\,i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{5/6}\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{5}{6},\frac{5}{3},-e^{2\,i\,(c+d\,x)}\right]\right)\sqrt{a\,(1+\text{Sec}[c+d\,x])}\left(-i+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

Problem 275: Result unnecessarily involves higher level functions.

$$\int(e\,\text{Sec}[c+d\,x])^{8/3}\,\sqrt{a+a\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 716 leaves, 7 steps):

$$\frac{60\,a\,e^2\,(e\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{91\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{6\,a\,e\,(e\,\mathrm{Sec}[c+d\,x])^{5/3}\,\mathrm{Tan}[c+d\,x]}{13\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}-$$

$$\frac{240\,a\,e^3\,\mathrm{Tan}[c+d\,x]}{91\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}+$$

$$\left(120\times 3^{1/4}\,\sqrt{2-\sqrt{3}}\;a^2\,e^{7/3}\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(91\,d\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)-$$

$$\left(80\,\sqrt{2}\;3^{3/4}\,a^2\,e^{7/3}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(91\,d\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 221 leaves):

$$\frac{1}{91\,d}3\,i\,e\,e^{-\frac{5}{2}i\,(c+d\,x)}\left(10-5\,e^{i\,(c+d\,x)}+22\,e^{2\,i\,(c+d\,x)}-22\,e^{3\,i\,(c+d\,x)}+5\,e^{4\,i\,(c+d\,x)}-\right.$$

$$10\,e^{5\,i\,(c+d\,x)}-10\left(1+e^{2\,i\,(c+d\,x)}\right)^{13/6}\mathrm{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{6},\frac{5}{6},-e^{2\,i\,(c+d\,x)}\right]+$$

$$\left.5\,e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{13/6}\mathrm{Hypergeometric2F1}\left[\frac{1}{6},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]\,(e\,\mathrm{Sec}[c+d\,x])^{5/3}\,\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}$$

Problem 276: Result unnecessarily involves higher level functions.

$$\int(e\,\mathrm{Sec}[c+d\,x])^{5/3}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 673 leaves, 6 steps):

$$\frac{6\,a\,e\,\left(e\,\mathrm{Sec}[c+d\,x]\right)^{2/3}\,\mathrm{Tan}[c+d\,x]}{7\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}-\frac{24\,a\,e^{2}\,\mathrm{Tan}[c+d\,x]}{7\,d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\left(\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)}+$$

$$\left(12\times 3^{1/4}\,\sqrt{2-\sqrt{3}}\;a^{2}\,e^{4/3}\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}}\right],\,-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}+\left(e\,\mathrm{Sec}[c+d\,x]\right)^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\;\mathrm{Tan}[c+d\,x]\right)\Big/$$

$$\left(7\,d\,\left(a-a\,\mathrm{Sec}[c+d\,x]\right)\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\;\sqrt{\frac{e^{1/3}\left(e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\right)-$$

$$\left(8\,\sqrt{2}\;3^{3/4}\,a^{2}\,e^{4/3}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}}\right],\,-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}+\left(e\,\mathrm{Sec}[c+d\,x]\right)^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\;\mathrm{Tan}[c+d\,x]\right)\Big/$$

$$\left(7\,d\,\left(a-a\,\mathrm{Sec}[c+d\,x]\right)\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\;\sqrt{\frac{e^{1/3}\left(e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-\left(e\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\right)^{2}}}\right)$$

Result (type 5, 192 leaves):

$$\frac{1}{7\,d}3\,i\,e\,e^{-\frac{3}{2}i\,(c+d\,x)}\left(2-e^{i\,(c+d\,x)}+e^{2\,i\,(c+d\,x)}-2\,e^{3\,i\,(c+d\,x)}-\right.$$

$$2\left(1+e^{2\,i\,(c+d\,x)}\right)^{7/6}\mathrm{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{6},\frac{5}{6},-e^{2\,i\,(c+d\,x)}\right]+$$

$$\left.e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{7/6}\mathrm{Hypergeometric2F1}\left[\frac{1}{6},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]\left(e\,\mathrm{Sec}[c+d\,x]\right)^{2/3}\sqrt{a\left(1+\mathrm{Sec}[c+d\,x]\right)}$$

Problem 277: Result unnecessarily involves higher level functions.

$$\int\left(e\,\mathrm{Sec}[c+d\,x]\right)^{2/3}\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\;dx$$

Optimal (type 4, 624 leaves, 5 steps):

$$-\frac{6\,a\,e\,\mathrm{Tan}[c+d\,x]}{d\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}+$$

$$\left(3\times 3^{1/4}\sqrt{2-\sqrt{3}}\;a^2\,e^{1/3}\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

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

$$\left(2\sqrt{2}\;3^{3/4}\,a^2\,e^{1/3}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

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

Result (type 5, 158 leaves) :

$$\left(3\,i\,e\left(2-2\,e^{i\,(c+d\,x)}-2\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/6}\mathrm{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{6},\frac{5}{6},-e^{2\,i\,(c+d\,x)}\right]+\right.\right.$$

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

$$\left.\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\right)\Big/\left(d\left(1+e^{i\,(c+d\,x)}\right)(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)$$

Problem 278: Result unnecessarily involves higher level functions.

$$\int\frac{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}{(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 4, 662 leaves, 6 steps) :

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

$$\left(3\times 3^{1/4}\sqrt{2-\sqrt{3}}\;a^2\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Big/$$

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

$$\left(\sqrt{2}\;3^{3/4}\,a^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Big/$$

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

Result (type 5, 153 leaves):

$$-\left(\left(3\,i\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/6}\left(-2\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{6},\frac{5}{6},-e^{2\,i\,(c+d\,x)}\right]+\right.\right.\right.$$

$$\left.e^{i\,(c+d\,x)}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{6},\frac{1}{3},\frac{4}{3},-e^{2\,i\,(c+d\,x)}\right]\right)$$

$$\left.\left.\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\right)\Big/\left(2\times 2^{1/3}\,d\,\left(1+e^{i\,(c+d\,x)}\right)\left(\frac{e\,e^{i\,(c+d\,x)}}{1+e^{2\,i\,(c+d\,x)}}\right)^{1/3}\right)\right)$$

Problem 279: Result unnecessarily involves higher level functions.

$$\int\frac{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}{(e\,\mathrm{Sec}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 4, 715 leaves, 7 steps):

$$\frac{3\,a\,\mathrm{Tan}[c+d\,x]}{4\,d\,(e\,\mathrm{Sec}[c+d\,x])^{4/3}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{15\,a\,\mathrm{Tan}[c+d\,x]}{8\,d\,e\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+$$

$$\frac{15\,a\,\mathrm{Tan}[c+d\,x]}{8\,d\,e\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}-$$

$$\left(15\times 3^{1/4}\sqrt{2-\sqrt{3}}\;a^2\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(16\,d\,e^{5/3}\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)+$$

$$\left(5\times 3^{3/4}\,a^2\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\left(1-\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}{\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}}\right],-7-4\sqrt{3}\right]\right.$$

$$\left.\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)\sqrt{\frac{e^{2/3}+e^{1/3}\,(e\,\mathrm{Sec}[c+d\,x])^{1/3}+(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\;\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(4\sqrt{2}\,d\,e^{5/3}\,(a-a\,\mathrm{Sec}[c+d\,x])\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\sqrt{\frac{e^{1/3}\left(e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)}{\left(\left(1+\sqrt{3}\right)e^{1/3}-(e\,\mathrm{Sec}[c+d\,x])^{1/3}\right)^2}}\right)$$

Result (type 5, 248 leaves) :

$$\Bigg(3\,e^{-2\,i\,(c+d\,x)}\,\Big(2\left(-1+e^{i\,(c+d\,x)}-e^{2\,i\,(c+d\,x)}+e^{3\,i\,(c+d\,x)}\right)-$$

$$10\,e^{i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)^{1/6}\mathrm{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{6},\frac{5}{6},-e^{2\,i\,(c+d\,x)}\right]+$$

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

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

$$\left(16\times 2^{5/6}\,d\left(e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)\right)^{1/6}\mathrm{Cos}[c+d\,x]^{5/6}\,(e\,\mathrm{Sec}[c+d\,x])^{4/3}\right)$$

Problem 280: Result more than twice size of optimal antiderivative.

$$\int\frac{(e\,\mathrm{Sec}[c+d\,x])^{2/3}}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 6, 78 leaves, 4 steps) :

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

Result (type 6, 1975 leaves):

$$\Big(9\times 2^{5/6}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$(e\,\text{Sec}[c+d\,x])^{2/3}\,(1+\text{Sec}[c+d\,x])^{1/6}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big/\left(d\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\right.$$
$$\sqrt{a\,(1+\text{Sec}[c+d\,x])}\,\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\Big(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)$$
$$\Big(\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}(1+\text{Sec}[c+d\,x])^{1/6}\Big)\Big/$$
$$\Big(2^{1/6}\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\Big(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\Big[\frac{3}{2},$$
$$\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big)-$$
$$\Big(3\times 2^{5/6}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$(1+\text{Sec}[c+d\,x])^{1/6}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big/$$
$$\Big(\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\Big(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\Big[\frac{3}{2},$$
$$\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big)+$$
$$\Big(9\times 2^{5/6}\,(1+\text{Sec}[c+d\,x])^{1/6}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big(-\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{18}\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},\frac{1}{3},$$
$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big/$$
$$\Big(\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\Big(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\Big[\frac{3}{2},$$

$$\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)\Big)-$$

$$\Bigg(9\times 2^{5/6}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right](1+\text{Sec}[c+dx])^{1/6}$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]\Bigg(\Bigg(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]+9\Bigg(-\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{18}\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\right.$$

$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\Bigg)+$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg(-\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{7}{10}\text{AppellF1}\left[\frac{5}{2},\frac{13}{6},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]-$$

$$2\Bigg(-\frac{4}{5}\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{10}\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+\right.\right.$$

$$\left.\left.dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)^{1/3}\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\Bigg(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)^2\Bigg)+$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}[c+dx]$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]\text{Tan}[c+dx]\Bigg)\Bigg/$$

$$\Bigg(2^{1/6}\Bigg(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)^{1/3}(1+\text{Sec}[c+dx])^{5/6}$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\Bigg(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg)\Bigg)$$

Problem 281: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 76 leaves, 4 steps):

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

Result (type 6, 749 leaves):

$$\Big(720\,e\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\,(1+\text{Cos}[c+d\,x])^2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\Big/\left(9\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\left(4\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{6},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big)\Big/$$

$$\Big(d\,(e\,\text{Sec}[c+d\,x])^{2/3}\,\sqrt{a\,(1+\text{Sec}[c+d\,x])}\,\Big(4320\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]^2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^6\,(-1+4\,\text{Cos}[c+d\,x])+160\left(4\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{6},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)^2\,\text{Cos}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^4+12\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\Big(20\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{6},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\,(7+14\,\text{Cos}[c+d\,x]+5\,\text{Cos}[2\,(c+d\,x)]-2\,\text{Cos}[3\,(c+d\,x)])+5\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\,(7+14\,\text{Cos}[c+d\,x]+5\,\text{Cos}[2\,(c+d\,x)]-2\,\text{Cos}[3\,(c+d\,x)])-24\left(40\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{6},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+8\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-5\,\text{AppellF1}\left[\frac{5}{2},\frac{11}{6},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Cos}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big)\Big)$$

Problem 282: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(e\,\mathrm{Sec}[c+d\,x])^{1/3}\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 6, 76 leaves, 4 steps):

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

Result (type 6, 5151 leaves):

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

$$\Bigg(1+\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$

$$\Bigg(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(9\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\Bigg(-2\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\mathrm{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\frac{7}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\left(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$

$$\Bigg(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\Bigg(-2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\mathrm{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.\frac{7}{6},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(d\left(\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}(e\,\mathrm{Sec}[c+d\,x])^{1/3}\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}$$

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

$$\Bigg(1+\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$

$$\Bigg(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(9\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\left(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)\Bigg)-$$

$$\frac{3}{2}\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{1/6}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(1+\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)\Bigg)+$$

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

$$\Bigg(1+\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\Bigg(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\right.$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + \text{AppellF1}[\tfrac{3}{2},\ \tfrac{7}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2)) -$$

$$(10\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2) \Big/ ((-1+\text{Tan}[\tfrac{1}{2}(c+d x)]^2)\ (15\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + (-2\ \text{AppellF1}[\tfrac{5}{2},\ \tfrac{1}{6},\ \tfrac{4}{3},\ \tfrac{7}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + \text{AppellF1}[\tfrac{5}{2},\ \tfrac{7}{6},\ \tfrac{1}{3},\ \tfrac{7}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2))) -$$

$$\frac{1}{(\text{Sec}[\frac{1}{2}(c+d x)]^2)^{1/3}}\ 3\ (\text{Cos}[\tfrac{1}{2}(c+d x)]^2\ \text{Sec}[c+d x])^{1/6}\ \text{Tan}[\tfrac{1}{2}(c+d x)]$$

$$(-1+\text{Tan}[\tfrac{1}{2}(c+d x)]^2)$$

$$(-((3\ \text{AppellF1}[\tfrac{1}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{3}{2},\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\ \text{Sec}[\tfrac{1}{2}(c+d x)]^2$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]) \Big/ ((-1+\text{Tan}[\tfrac{1}{2}(c+d x)]^2)^2\ (9\ \text{AppellF1}[\tfrac{1}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{3}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + (-2\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{4}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + \text{AppellF1}[\tfrac{3}{2},\ \tfrac{7}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2))) +$$

$$(3\ (-\tfrac{1}{9}\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{4}{3},\ \tfrac{5}{2},\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]$$

$$\text{Sec}[\tfrac{1}{2}(c+d x)]^2\ \text{Tan}[\tfrac{1}{2}(c+d x)] + \tfrac{1}{18}\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{7}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},\ \text{Tan}[$$

$$\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\ \text{Sec}[\tfrac{1}{2}(c+d x)]^2\ \text{Tan}[\tfrac{1}{2}(c+d x)])) \Big/$$

$$((-1+\text{Tan}[\tfrac{1}{2}(c+d x)]^2)\ (9\ \text{AppellF1}[\tfrac{1}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{3}{2},\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + (-2\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{4}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] + \text{AppellF1}[\tfrac{3}{2},\ \tfrac{7}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2)) +$$

$$(10\ \text{AppellF1}[\tfrac{3}{2},\ \tfrac{1}{6},\ \tfrac{1}{3},\ \tfrac{5}{2},\ \text{Tan}[\tfrac{1}{2}(c+d x)]^2,\ -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]$$

$$\text{Sec}[\tfrac{1}{2}(c+d x)]^2\ \text{Tan}[\tfrac{1}{2}(c+d x)]^3) \Big/ ((-1+\text{Tan}[\tfrac{1}{2}(c+d x)]^2)^2\ (15\ \text{AppellF1}[\tfrac{3}{2},$$

$$\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\left(-2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)-$$

$$\left(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\Big/\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\left(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\left(-2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)-\left(10\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\left(-\frac{1}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{10}\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\left(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\left(-2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)-$$

$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\left(\left(-2\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\mathrm{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+9\left(-\frac{1}{9}\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{18}\mathrm{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\left(-\frac{1}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\right.$$

$$\frac{7}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{13}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\left(-\frac{4}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{7}{3},\right.\right.$$

$$\left.\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

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

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)+$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right.$$

$$\left(\left(-2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.\right.$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\left(-\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\right.\right.$$

$$\left.\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{6},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{5}{6}\,\text{AppellF1}\left[\frac{7}{2},\frac{13}{6},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\left(-\frac{20}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{6},\frac{7}{3},\right.\right.$$

$$\left.\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{42}\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{6},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

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

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Big)-$$

$$\frac{1}{2\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{5/6}}$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(1+\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)-$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left(-2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big)$$

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

Problem 283: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 78 leaves, 4 steps):

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

Result (type 6, 2819 leaves):

$$\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right] \operatorname{Sec}[c+d x]^2 \left(-\frac{3}{2} \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]+\frac{3}{2} \operatorname{Sin}\left[\frac{3}{2}(c+d x)\right]\right)\right) \Big/ \left(d \,(e \operatorname{Sec}[c+d x])^{2/3} \sqrt{a\,(1+\operatorname{Sec}[c+d x])}\right) +$$
$$\Bigg(\left(\left(-\frac{3}{4 \operatorname{Sec}[c+d x]^{1/6}}+\frac{1}{4} \operatorname{Sec}[c+d x]^{5/6}\right) \operatorname{Sec}[c+d x]^{7/6}\right.$$
$$\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]\right)^{5/6} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]$$
$$\left(-\operatorname{Cos}[c+d x]^{5/6} \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{5}{6}, \frac{3}{2}, 2 \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 +\right.$$
$$\left(10 \operatorname{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, \frac{2}{3}, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/$$
$$\left(15 \operatorname{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, \frac{2}{3}, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +\right.$$
$$\left(-4 \operatorname{AppellF1}\left[\frac{5}{2}, \frac{5}{6}, \frac{5}{3}, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 5 \operatorname{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\left.\left.\frac{11}{6}, \frac{2}{3}, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right) \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right) \Big/$$
$$\Bigg(d \left(\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3} (e \operatorname{Sec}[c+d x])^{2/3} \sqrt{a\,(1+\operatorname{Sec}[c+d x])}$$
$$\Bigg(\frac{1}{2} \left(\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3} \left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]\right)^{5/6}$$
$$\left(-\operatorname{Cos}[c+d x]^{5/6} \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{5}{6}, \frac{3}{2}, 2 \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 +\right.$$
$$\left(10 \operatorname{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, \frac{2}{3}, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \Big/$$
$$\left(15 \operatorname{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, \frac{2}{3}, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +\right.$$
$$\left(-4 \operatorname{AppellF1}\left[\frac{5}{2}, \frac{5}{6}, \frac{5}{3}, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] + 5 \operatorname{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\frac{11}{6}, \frac{2}{3}, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right) \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right) -$$
$$\frac{1}{3 \left(\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}} \, 2 \left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Sec}[c+d x]\right)^{5/6} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\left(-\text{Cos}[c+d\,x]^{5/6}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{3}{2},2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+\right.$$
$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-4\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+5\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\left.\frac{11}{6},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$
$$\frac{1}{\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]\right)^{5/6}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$
$$\left(-\frac{1}{2}\text{Cos}[c+d\,x]^{5/6}\,\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]\right.$$
$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{3}{2},2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\frac{1}{\left(1-2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{5/6}}\right)+$$
$$\left(5\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{3}{2},2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sin}[c+d\,x]\right)\Big/$$
$$\left(6\,\text{Cos}[c+d\,x]^{1/6}\right)-\text{Cos}[c+d\,x]^{5/6}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{3}{2},2\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-4\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+5\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\left.\frac{11}{6},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$
$$\left(10\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\right.\right.\right.$$
$$\left.x)\right]^2\Big]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{2}\text{AppellF1}\left[\frac{5}{2},\frac{11}{6},\frac{2}{3},\frac{7}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-4\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+5\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\frac{11}{6},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)-$$

$$\Big(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\Big(\Big(-4\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$5\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{11}{6},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+15\Big(-\frac{2}{5}\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},$$

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

$$\frac{1}{2}\mathrm{AppellF1}\left[\frac{5}{2},\frac{11}{6},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\Big(-4\Big(-\frac{25}{21}\mathrm{AppellF1}\left[\frac{7}{2},\frac{5}{6},\frac{8}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{25}{42}\mathrm{AppellF1}\left[\frac{7}{2},\frac{11}{6},\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)+5\Big(-\frac{10}{21}\mathrm{AppellF1}\Big[\frac{7}{2},\frac{11}{6},$$

$$\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{55}{42}\mathrm{AppellF1}\Big[\frac{7}{2},\frac{17}{6},\frac{2}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

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

$$\Big(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\Big(-4\,\mathrm{AppellF1}\Big[$$

$$\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+5\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{11}{6},$$

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

$$\frac{1}{6\left(\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Sec}[c+d x]\right)^{1/6}}5\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]$$

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

$$\Big(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big/$$

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-4\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{6},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+5\,\text{AppellF1}\left[\frac{5}{2},\frac{11}{6},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(-\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\text{Sec}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Bigg)\Bigg)$$

Problem 284: Result more than twice size of optimal antiderivative.

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

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

$$\left(2^{5/6}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{1}{6},\frac{3}{2},1-\text{Sec}[c+d\,x],\frac{1}{2}(1-\text{Sec}[c+d\,x])\right](a+a\,\text{Sec}[c+d\,x])^{1/3}\,\text{Tan}[c+d\,x]\right)\Big/\left(d\,(1+\text{Sec}[c+d\,x])^{5/6}\right)$$

Result (type 6, 1982 leaves):

$$\left(3\,\text{Sec}[c+d\,x]^{1/3}\,((1+\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x])^{1/3}\,(a\,(1+\text{Sec}[c+d\,x]))^{1/3}\,\text{Sin}[c+d\,x]\right)\Big/\left(2\,d\,(1+\text{Sec}[c+d\,x])^{1/3}\right)+$$
$$\left(3\,(a\,(1+\text{Sec}[c+d\,x]))^{1/3}\left(-\frac{(1+\text{Sec}[c+d\,x])^{1/3}}{\text{Sec}[c+d\,x]^{2/3}}+\frac{1}{2}\text{Sec}[c+d\,x]^{1/3}\,(1+\text{Sec}[c+d\,x])^{1/3}\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(-1+\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\left(9\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-2\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\text{HypergeometricPFQ}\left[\left\{\frac{2}{3},\frac{3}{4}\right\},\left\{\frac{7}{4}\right\},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Big/$$
$$\left(2^{2/3}\,d\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]\right)^{1/3}(1+\text{Sec}[c+d\,x])^{1/3}\right.$$
$$\left(\left(3\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\left(-1+\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.\right.$$

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]-$$

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

$$\text{HypergeometricPFQ}\Big[\Big\{\frac{2}{3},\frac{3}{4}\Big\},\Big\{\frac{7}{4}\Big\},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big)\Big)\Big/$$

$$\Big(2\times2^{2/3}\,\Big(\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{1/3}\Big)-\Big(2^{1/3}\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

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

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]-$$

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

$$\text{HypergeometricPFQ}\Big[\Big\{\frac{2}{3},\frac{3}{4}\Big\},\Big\{\frac{7}{4}\Big\},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big)\Big)\Big/$$

$$\Big(\Big(\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)^{2/3}\,\Big(\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{1/3}\Big)+$$

$$\frac{1}{2^{2/3}\,\Big(\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)^{2/3}\,\Big(\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Sec}[c+d\,x]\Big)^{1/3}}$$

$$3\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\,\Bigg(\Bigg(3\,\Big(-\frac{2}{9}\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]-\frac{1}{9}\,\text{HypergeometricPFQ}\Big[$$

$$\Big\{\frac{2}{3},\frac{3}{4}\Big\},\Big\{\frac{7}{4}\Big\},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]\Big)\Big)\Big/$$

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]-$$

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

$$\text{HypergeometricPFQ}\Big[\Big\{\frac{2}{3},\frac{3}{4}\Big\},\Big\{\frac{7}{4}\Big\},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-$$

$$\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$

$$\Bigg(-2\,\Big(2\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\text{HypergeometricPFQ}\Big[\Big\{\frac{2}{3},\frac{3}{4}\Big\},\Big\{\frac{7}{4}\Big\},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+9\,\Big(-\frac{2}{9}\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]-$$

$$\frac{1}{9}\,\text{HypergeometricPFQ}\left[\left\{\frac{2}{3},\frac{3}{4}\right\},\left\{\frac{7}{4}\right\},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)-2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\Bigg(2\left(-\text{AppellF1}\left[\frac{5}{2},-\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{5}{3},\frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+\right.$$
$$\left.\left.d x)\right]\right)+\frac{3}{2}\,\text{Csc}\left[\frac{1}{2}(c+d x)\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]\Bigg(-\text{HypergeometricPFQ}\Big[$$
$$\left\{\frac{2}{3},\frac{3}{4}\right\},\left\{\frac{7}{4}\right\},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\Big]+\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\right)^{2/3}}\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-2$$
$$\Bigg(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$\text{HypergeometricPFQ}\left[\left\{\frac{2}{3},\frac{3}{4}\right\},\left\{\frac{7}{4}\right\},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2\Bigg)-$$
$$\Bigg(\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg(-1+\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\Bigg/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-$$
$$2\,\Bigg(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$
$$\text{HypergeometricPFQ}\left[\left\{\frac{2}{3},\frac{3}{4}\right\},\left\{\frac{7}{4}\right\},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg)$$
$$\Bigg(-\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Sec}[c+d x]\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]+\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\text{Sec}[c+d x]\,\text{Tan}[c+d x]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(2^{2/3}\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]\right)^{4/3}\Bigg)\Bigg)\Bigg)$$

Problem 285: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\left(2\times 2^{1/6} \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{3}, -\frac{1}{6}, \frac{3}{2}, 1-\text{Sec}[c+d x], \frac{1}{2} \left(1-\text{Sec}[c+d x]\right)\right] \left(a+a \text{Sec}[c+d x]\right)^{2/3} \text{Tan}[c+d x]\right) \Big/ \left(d \left(1+\text{Sec}[c+d x]\right)^{7/6}\right)$$

Result (type 6, 3726 leaves):

$$\left(\text{Sec}[c+d x]^{1/3} \left(\left(1+\text{Cos}[c+d x]\right) \text{Sec}[c+d x]\right)^{2/3} \left(a \left(1+\text{Sec}[c+d x]\right)\right)^{2/3} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right) \Big/ \left(d \left(1+\text{Sec}[c+d x]\right)^{2/3}\right) +$$
$$\left(15\times 2^{2/3} \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] \text{Sec}\left[\frac{1}{2} (c+d x)\right] \left(a \left(1+\text{Sec}[c+d x]\right)\right)^{2/3}\right.$$
$$\left(9 \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] - 2 \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2 + 4 \text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right)^2 \left.\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right) \Big/$$
$$\left(d \text{Sec}[c+d x]^{2/3} \left(9 \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] - 2 \left(\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] - 2 \text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right)\right.$$
$$\left(405\times 2^{2/3} \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]^2 \text{Cos}\left[\frac{1}{2} (c+d x)\right] + \right.$$
$$90\times 2^{2/3} \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]$$
$$\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4} (c+d x)\right]^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right] \text{Tan}\left[\frac{1}{4} (c+d x)\right] -$$
$$180\times 2^{2/3} \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]$$
$$\text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4} (c+d x)\right]^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right] \text{Tan}\left[\frac{1}{4} (c+d x)\right] -$$
$$90\times 2^{2/3} \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2, -\text{Tan}\left[\frac{1}{4} (c+d x)\right]^2\right] \text{Cos}\left[\frac{1}{2} (c+d x)\right] \text{Tan}\left[\frac{1}{4} (c+d x)\right]^2 +$$

$$180\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Cos}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2+$$

$$10\times 2^{2/3}\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]^2\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3-$$

$$40\times 2^{2/3}\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3+$$

$$40\times 2^{2/3}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]^2\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3-$$

$$72\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3+$$

$$72\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3-$$

$$180\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{4}(c+d x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^3+$$

$$270\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]^2\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]-60\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]\text{Sin}\left[\frac{1}{2}(c+d x)\right]\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$120\times 2^{2/3}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+d x)\right]^2\right]$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{4}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{4}(c+dx)\right]^2\right]$$

$$\left.\left.\text{Sin}\left[\frac{1}{2}(c+dx)\right]\text{Tan}\left[\frac{1}{4}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)-$$

$$\left(\left(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)^{4/3}\text{Sec}[c+dx]^{1/3}\left(a\left(1+\text{Sec}[c+dx]\right)\right)^{2/3}\right.$$

$$\left(\frac{\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]}{\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}}-\right.$$

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

$$\left(2^{1/3}d\left(-\frac{1}{2^{1/3}}\left(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)^{1/3}\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right.\right.$$

$$\left(\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\Big/\right.$$

$$\left(\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\right)-$$

$$\left.\frac{\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]}{\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}}\right)-$$

$$\frac{1}{2^{1/3}}3\left(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)^{1/3}\left(\left(\left(\left(\left(\frac{1}{3}-\frac{i}{3}\right)\text{AppellF1}\left[\frac{1}{3},-\frac{1}{3},\frac{2}{3},\frac{4}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)\Big/\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2+$$

$$\left(\left(\left(\frac{1}{3}+\frac{i}{3}\right)\text{AppellF1}\left[\frac{1}{3},\frac{2}{3},-\frac{1}{3},\frac{4}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\right.\right.\right.$$

$$\left.\left.-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)\Big/\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2\Bigg)\Big/$$

$$\left(\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\right)-$$

$$\left(\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\right.$$

$$\left.\left(\frac{\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2}\right)\right)\Big/$$

$$\left(3\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{4/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\right)-$$

$$\left(\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\right.$$

$$\left.\left(\frac{\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2}\right)\right)\Big/$$

$$\left(3\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{4/3}\right)-$$

$$\left(-\left(\left(\left(\frac{1}{3}+\frac{i}{3}\right)\text{AppellF1}\left[\frac{1}{3},-\frac{1}{3},\frac{2}{3},\frac{4}{3},\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2\Bigg)-\left(\left(\frac{1}{3}-\frac{i}{3}\right)\text{AppellF1}\left[\frac{1}{3},\frac{2}{3},\right.\right.$$

$$\left.\left.-\frac{1}{3},\frac{4}{3},\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\right)\Big/$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)^2\right)\Big/\left(\left(\frac{-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(\frac{i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\right)+$$

$$\left(\text{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\right.$$

$$\left(-\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(-i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}+\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\Bigg/$$
$$\left(3\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{4/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{1/3}\right)+$$
$$\left(\mathrm{AppellF1}\left[-\frac{2}{3},-\frac{1}{3},-\frac{1}{3},\frac{1}{3},\frac{1-i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]},\frac{1+i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right]\right.$$
$$\left(-\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}{2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2}+\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\Bigg/$$
$$\left.\left(3\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{1/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{4/3}\right)\right)\Bigg)\Bigg)$$

Problem 287: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 6, 80 leaves, 3 steps):

$$\left(2\times 2^{5/6}\,a\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{4}{3},-\frac{5}{6},\frac{3}{2},1-\mathrm{Sec}[c+d x],\frac{1}{2}(1-\mathrm{Sec}[c+d x])\right]\right.$$
$$\left.(a+a\,\mathrm{Sec}[c+d x])^{1/3}\,\mathrm{Tan}[c+d x]\right)\Big/\left(d\,(1+\mathrm{Sec}[c+d x])^{5/6}\right)$$

Result (type 6, 2325 leaves):

$$-\Bigg(\Bigg(3\,(a\,(1+\mathrm{Sec}[c+d x]))^{4/3}$$
$$\left(\frac{(1+\mathrm{Sec}[c+d x])^{1/3}}{\mathrm{Sec}[c+d x]^{1/3}}+\mathrm{Sec}[c+d x]^{2/3}\,(1+\mathrm{Sec}[c+d x])^{1/3}\right)\left(-8\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+\right.$$
$$\left(\mathrm{AppellF1}\left[-\frac{4}{3},-\frac{2}{3},-\frac{2}{3},-\frac{1}{3},-\frac{1+i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]},-\frac{1-i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right]\right.$$
$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg/\left(\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{2/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)^{2/3}\right)-$$

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

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

$$\left(4\times 2^{2/3} d\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}(1+\text{Sec}[c+d x])^{4/3}\right.$$

$$\left(\left(\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(-8\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\left(\text{AppellF1}\left[-\frac{4}{3},-\frac{2}{3},-\frac{2}{3},-\frac{1}{3},\right.\right.\right.\right.\right.$$

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

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

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

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

$$\left(4\times 2^{2/3}\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\right)-\frac{1}{4\times 2^{2/3}\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}}3\left(-4\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2+\right.$$

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

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

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

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

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

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

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/\left(\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{2/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{2/3}\right)-$$
$$\mathrm{AppellF1}\left[-\frac{4}{3},-\frac{2}{3},-\frac{2}{3},-\frac{1}{3},\frac{1-i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]},\frac{1+i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{1/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{1/3}$$
$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)-\Bigg(2\,\mathrm{AppellF1}\left[-\frac{4}{3},-\frac{2}{3},-\frac{2}{3},-\frac{1}{3},\right.$$
$$\left.-\frac{1+i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]},-\frac{1-i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\right)\Bigg)\Bigg/$$
$$\left(3\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{5/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{2/3}\right)-\Bigg(2\,\mathrm{AppellF1}\left[-\frac{4}{3},\right.$$
$$\left.-\frac{2}{3},-\frac{2}{3},-\frac{1}{3},-\frac{1+i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]},-\frac{1-i}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\frac{\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}\right)\Bigg)\Bigg/$$
$$\left(3\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{2/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{5/3}\right)-$$
$$\left(\frac{-i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{1/3}\left(\frac{i+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{1/3}\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2$$
$$\Bigg(\Bigg(\left(\frac{4}{3}+\frac{4\,i}{3}\right)\mathrm{AppellF1}\left[-\frac{1}{3},-\frac{2}{3},\frac{1}{3},\frac{2}{3},\frac{1-i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]},\frac{1+i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2+$$
$$\Bigg(\left(\frac{4}{3}-\frac{4\,i}{3}\right)\mathrm{AppellF1}\left[-\frac{1}{3},\frac{1}{3},-\frac{2}{3},\frac{2}{3},\frac{1-i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]},\right.$$
$$\left.\frac{1+i}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\Bigg)-$$

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

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

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

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

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

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\left(-\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(i+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+\right.$$

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

Problem 288: Unable to integrate problem.

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

Optimal (type 5, 304 leaves, 8 steps):

$$\frac{a^4\left(30+21\,n+4\,n^2\right)\text{Sec}[e+f\,x]^{1+n}\,\text{Sin}[e+f\,x]}{f\,(1+n)\,(2+n)\,(3+n)}+\frac{\text{Sec}[e+f\,x]^{1+n}\left(a^2+a^2\,\text{Sec}[e+f\,x]\right)^2\text{Sin}[e+f\,x]}{f\,(3+n)}+$$

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

$$\left(a^4\left(3+24\,n+8\,n^2\right)\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f\,x]^2\right]\right.$$

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

$$\left(4\,a^4\,(3+2\,n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Cos}[e+f\,x]^2\right]\text{Sec}[e+f\,x]^n\,\text{Sin}[e+f\,x]\right)\Big/$$

$$\left(f\,n\,(2+n)\,\sqrt{\text{Sin}[e+f\,x]^2}\right)$$

Result (type 8, 23 leaves):

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

Problem 289: Unable to integrate problem.

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

Optimal (type 5, 230 leaves, 7 steps):

$$\frac{a^3\,(5+2 n)\,\text{Sec}[e+f x]^{1+n}\,\text{Sin}[e+f x]}{f\,(1+n)\,(2+n)}+\frac{\text{Sec}[e+f x]^{1+n}\,\left(a^3+a^3\,\text{Sec}[e+f x]\right)\,\text{Sin}[e+f x]}{f\,(2+n)}-\left(a^3\,(1+4 n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f x]^2\right]\,\text{Sec}[e+f x]^{-1+n}\,\text{Sin}[e+f x]\right)\Big/\left(f\,\left(1-n^2\right)\,\sqrt{\text{Sin}[e+f x]^2}\right)+\left(a^3\,(7+4 n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Cos}[e+f x]^2\right]\,\text{Sec}[e+f x]^n\,\text{Sin}[e+f x]\right)\Big/\left(f\,n\,(2+n)\,\sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 8, 23 leaves):

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

Problem 290: Unable to integrate problem.

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

Optimal (type 5, 172 leaves, 6 steps):

$$\frac{a^2\,\text{Sec}[e+f x]^{1+n}\,\text{Sin}[e+f x]}{f\,(1+n)}-\left(a^2\,(1+2 n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f x]^2\right]\,\text{Sec}[e+f x]^{-1+n}\,\text{Sin}[e+f x]\right)\Big/\left(f\,\left(1-n^2\right)\,\sqrt{\text{Sin}[e+f x]^2}\right)+\left(2\,a^2\,\text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Cos}[e+f x]^2\right]\,\text{Sec}[e+f x]^n\,\text{Sin}[e+f x]\right)\Big/\left(f\,n\,\sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 8, 23 leaves):

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

Problem 291: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$-\left(\left(a\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f x]^2\right]\text{Sec}[e+f x]^{-1+n}\,\text{Sin}[e+f x]\right)\Big/\left(f\,(1-n)\,\sqrt{\text{Sin}[e+f x]^2}\right)\right)+\left(a\,\text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Cos}[e+f x]^2\right]\text{Sec}[e+f x]^n\,\text{Sin}[e+f x]\right)\Big/\left(f\,n\,\sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 6, 3990 leaves):

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

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\right)\Big/\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big/\left(\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1+n)\,\text{AppellF1}\left[\frac{3}{2},2+n,-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\right.$$

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

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

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\right)\Big/\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left.(1+n)\,\text{AppellF1}\left[\frac{3}{2},2+n,-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)-\frac{1}{2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)}\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]^n$$

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\right)\Big/\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$(1+n)\,\text{AppellF1}\left[\frac{3}{2},2+n,-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\frac{1}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}n\,\text{Sec}[e+fx]^{1+n}\,\text{Sin}[e+fx]\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\right)\Big/\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2}, 1+n, -n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + (1+n)\,\text{AppellF1}\left[\frac{3}{2}, 2+n, -n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) - \frac{1}{-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2} \text{Sec}[e+fx]^n\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2}, n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sin}[e+fx]\right) \Big/ \left(3\,\text{AppellF1}\left[\frac{1}{2}, n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + 2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}, n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) + \left(3\,\text{Cos}[e+fx] \left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2}, n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3} n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right) \Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2}, n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + 2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}, n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right) +$$

$$\left(\frac{1}{3} n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}(1+n)\,\text{AppellF1}\left[\frac{3}{2}, 2+n, -n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\right) \Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2}, 1+n, -n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2}, 1+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + (1+n)\,\text{AppellF1}\left[\frac{3}{2}, 2+n, -n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right) -$$

$$\Big(3\,\text{AppellF1}\Big[\tfrac{1}{2},n,1-n,\tfrac{3}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]\,\text{Cos}[e+f\,x]$$

$$\Big(2\Big((-1+n)\,\text{AppellF1}\Big[\tfrac{3}{2},n,2-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$n\,\text{AppellF1}\Big[\tfrac{3}{2},1+n,1-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\,\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]+3\Big(-\tfrac{1}{3}(1-n)\,\text{AppellF1}\Big[\tfrac{3}{2},n,$$

$$2-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]\,\text{Sec}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2$$

$$\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]+\tfrac{1}{3}n\,\text{AppellF1}\Big[\tfrac{3}{2},1+n,1-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,$$

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

$$2\,\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big((-1+n)\Big(-\tfrac{3}{5}(2-n)\,\text{AppellF1}\Big[\tfrac{5}{2},n,3-n,\tfrac{7}{2},$$

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

$$\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]+\tfrac{3}{5}n\,\text{AppellF1}\Big[\tfrac{5}{2},1+n,2-n,\tfrac{7}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,$$

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

$$n\Big(-\tfrac{3}{5}(1-n)\,\text{AppellF1}\Big[\tfrac{5}{2},1+n,2-n,\tfrac{7}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,$$

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

$$\tfrac{3}{5}(1+n)\,\text{AppellF1}\Big[\tfrac{5}{2},2+n,1-n,\tfrac{7}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,$$

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

$$\Big(3\,\text{AppellF1}\Big[\tfrac{1}{2},n,1-n,\tfrac{3}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$2\Big((-1+n)\,\text{AppellF1}\Big[\tfrac{3}{2},n,2-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$n\,\text{AppellF1}\Big[\tfrac{3}{2},1+n,1-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,$$

$$-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big)^2-$$

$$\Big(\text{AppellF1}\Big[\tfrac{1}{2},1+n,-n,\tfrac{3}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]$$

$$\Big(\tfrac{1}{3}n\,\text{AppellF1}\Big[\tfrac{3}{2},1+n,1-n,\tfrac{5}{2},\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2,-\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\Big]$$

$$\text{Sec}\Big[\tfrac{1}{2}(e+f\,x)\Big]^2\,\text{Tan}\Big[\tfrac{1}{2}(e+f\,x)\Big]+\tfrac{1}{3}(1+n)\,\text{AppellF1}\Big[\tfrac{3}{2},2+n,-n,\tfrac{5}{2},$$

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

$$\frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(1+n)\,\text{AppellF1}\left[\frac{3}{2},2+n,-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{2}{3}\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\left(n\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},1+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{3}{5}(1+n)\,\text{AppellF1}\left[\frac{5}{2},2+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$
$$(1+n)\left(\frac{3}{5}n\,\text{AppellF1}\left[\frac{5}{2},2+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{3}{5}(2+n)\,\text{AppellF1}\left[\frac{5}{2},3+n,-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/$$
$$\left(\text{AppellF1}\left[\frac{1}{2},1+n,-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\frac{2}{3}\left(n\,\text{AppellF1}\left[\frac{3}{2},1+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(1+n)\,\text{AppellF1}\left[\frac{3}{2},2+n,-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\right)\right)$$

Problem 292: Unable to integrate problem.

$$\int\frac{\text{Sec}[e+f x]^n}{a+a\,\text{Sec}[e+f x]}\,dx$$

Optimal (type 5, 174 leaves, 6 steps):

$$\frac{\text{Sec}[e+f x]^n \text{Sin}[e+f x]}{f\left(a+a \text{Sec}[e+f x]\right)}+$$
$$\left(\left(1-n\right) \text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2-n}{2},\frac{4-n}{2},\text{Cos}[e+f x]^2\right] \text{Sec}[e+f x]^{-2+n} \text{Sin}[e+f x]\right)\Big/$$
$$\left(a f \left(2-n\right) \sqrt{\text{Sin}[e+f x]^2}\right)-$$
$$\left(\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f x]^2\right] \text{Sec}[e+f x]^{-1+n} \text{Sin}[e+f x]\right)\Big/$$
$$\left(a f \sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 8, 23 leaves):

$$\int \frac{\text{Sec}[e+f x]^n}{a+a \text{Sec}[e+f x]} \, dx$$

Problem 293: Unable to integrate problem.

$$\int \frac{\text{Sec}[e+f x]^n}{\left(a+a \text{Sec}[e+f x]\right)^2} \, dx$$

Optimal (type 5, 217 leaves, 7 steps):

$$-\frac{2\left(2-n\right) \text{Sec}[e+f x]^{1+n} \text{Sin}[e+f x]}{3 a^2 f \left(1+\text{Sec}[e+f x]\right)}-\frac{\text{Sec}[e+f x]^{1+n} \text{Sin}[e+f x]}{3 f \left(a+a \text{Sec}[e+f x]\right)^2}-$$
$$\left(\left(3-2 n\right) \text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Cos}[e+f x]^2\right] \text{Sec}[e+f x]^{-1+n} \text{Sin}[e+f x]\right)\Big/$$
$$\left(3 a^2 f \sqrt{\text{Sin}[e+f x]^2}\right)+$$
$$\left(2\left(2-n\right) \text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Cos}[e+f x]^2\right] \text{Sec}[e+f x]^n \text{Sin}[e+f x]\right)\Big/$$
$$\left(3 a^2 f \sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 8, 23 leaves):

$$\int \frac{\text{Sec}[e+f x]^n}{\left(a+a \text{Sec}[e+f x]\right)^2} \, dx$$

Problem 294: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^n \left(1+\text{Sec}[e+f x]\right)^{5/2} \, dx$$

Optimal (type 5, 162 leaves, 4 steps):

$$\frac{2\,(7+4\,n)\,\text{Sec}[e+f\,x]^{1+n}\,\text{Sin}[e+f\,x]}{f\,(1+2\,n)\,(3+2\,n)\,\sqrt{1+\text{Sec}[e+f\,x]}}+\frac{2\,\text{Sec}[e+f\,x]^{1+n}\,\sqrt{1+\text{Sec}[e+f\,x]}\,\,\text{Sin}[e+f\,x]}{f\,(3+2\,n)}+$$
$$\left(2\,\left(3+24\,n+16\,n^2\right)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1-n,\,\frac{3}{2},\,1-\text{Sec}[e+f\,x]\right]\,\text{Tan}[e+f\,x]\right)\Big/$$
$$\left(f\,(1+2\,n)\,(3+2\,n)\,\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 5, 433 leaves) :

$$-\frac{1}{f\,\text{Sec}[e+f\,x]^{5/2}}\,\mathbb{i}\,2^{-\frac{5}{2}+n}\,e^{-\mathbb{i}\left(\frac{1}{2}+n\right)\,(e+f\,x)}\,\left(\frac{e^{\mathbb{i}\,(e+f\,x)}}{1+e^{2\,\mathbb{i}\,(e+f\,x)}}\right)^{\frac{1}{2}+n}\,\left(1+e^{2\,\mathbb{i}\,(e+f\,x)}\right)^{\frac{1}{2}+n}$$
$$\left(\frac{1}{2+n}10\,e^{\mathbb{i}\,(2+n)\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[1+\frac{n}{2},\,\frac{5}{2}+n,\,2+\frac{n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]+\right.$$
$$\frac{1}{4+n}5\,e^{\mathbb{i}\,(4+n)\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[2+\frac{n}{2},\,\frac{5}{2}+n,\,3+\frac{n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]+$$
$$\frac{e^{\mathbb{i}\,n\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[\frac{n}{2},\,\frac{5}{2}+n,\,1+\frac{n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]}{n}+$$
$$\frac{5\,e^{\mathbb{i}\,(1+n)\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[\frac{1+n}{2},\,\frac{5}{2}+n,\,\frac{3+n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]}{1+n}+$$
$$\frac{10\,e^{\mathbb{i}\,(3+n)\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[\frac{5}{2}+n,\,\frac{3+n}{2},\,\frac{5+n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]}{3+n}+$$
$$\left.\frac{e^{\mathbb{i}\,(5+n)\,(e+f\,x)}\,\text{Hypergeometric2F1}\left[\frac{5}{2}+n,\,\frac{5+n}{2},\,\frac{7+n}{2},\,-e^{2\,\mathbb{i}\,(e+f\,x)}\right]}{5+n}\right)$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\,(1+\text{Sec}[e+f\,x])^{5/2}$$

Problem 295: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f\,x]^n\,(1+\text{Sec}[e+f\,x])^{3/2}\,dx$$

Optimal (type 5, 98 leaves, 4 steps) :

$$\frac{2\,\text{Sec}[e+f\,x]^{1+n}\,\text{Sin}[e+f\,x]}{f\,(1+2\,n)\,\sqrt{1+\text{Sec}[e+f\,x]}}+$$
$$\left(2\,(1+4\,n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1-n,\,\frac{3}{2},\,1-\text{Sec}[e+f\,x]\right]\,\text{Tan}[e+f\,x]\right)\Big/$$
$$\left(f\,(1+2\,n)\,\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 5, 6367 leaves) :

$$\left(14\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^3\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}(1+\text{Sec}[e+fx])^{3/2}\left(\text{Cos}\left[\frac{3}{2}(e+fx)\right]\right.$$
$$\left(\frac{1}{8}\text{Sec}[e+fx]^{-\frac{3}{2}+n}+\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}+\frac{3}{4}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]-\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}\right.$$
$$\text{Sin}[e+fx]^2+\text{Cos}[e+fx]\left(\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}+\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]\right)+$$
$$\text{Sec}[e+fx]\left(\frac{1}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}+\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]-\right.$$
$$\left.\left.\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]^2-\frac{1}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]^3\right)\right)-$$
$$\frac{1}{8}\text{i}\,\text{Sec}[e+fx]^{-\frac{3}{2}+n}\text{Sin}\left[\frac{3}{2}(e+fx)\right]-\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}\left[\frac{3}{2}(e+fx)\right]+$$
$$\frac{3}{4}\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]\,\text{Sin}\left[\frac{3}{2}(e+fx)\right]+$$
$$\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]^2\text{Sin}\left[\frac{3}{2}(e+fx)\right]+\text{Cos}[e+fx]$$
$$\left(-\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}\left[\frac{3}{2}(e+fx)\right]+\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]\,\text{Sin}\left[\frac{3}{2}(e+fx)\right]\right)+$$
$$\text{Sec}[e+fx]\left(-\frac{1}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}\left[\frac{3}{2}(e+fx)\right]+\frac{3}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]\right.$$
$$\text{Sin}\left[\frac{3}{2}(e+fx)\right]+\frac{3}{8}\text{i}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]^2\text{Sin}\left[\frac{3}{2}(e+fx)\right]-$$
$$\left.\left.\frac{1}{8}\text{Sec}[e+fx]^{\frac{1}{2}+n}\text{Sin}[e+fx]^3\text{Sin}\left[\frac{3}{2}(e+fx)\right]\right)\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\left.\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)\right)\Big/$$
$$\left(f\,\text{Sec}[e+fx]^{3/2}\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(7\,\text{Cos}[e+fx]\,(-5-2n+2(1+n)\,\text{Cos}[e+fx])\right.$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\,(-15-9n+(9+8n)\,\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)])\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+$$

$$2\,(3+2n)\,(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},$$
$$-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^4\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)\Big)$$
$$\Bigg(-\Bigg(\Bigg(14\,\Big(\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^{1+n}\,\Big(\text{Cos}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Sec}[e+fx]\Big)^{-\frac{3}{2}+n}\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2$$
$$\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2+$$
$$5\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$
$$\Big(-3+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2+2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^4\Big)\Big)\Bigg)\Bigg/$$
$$\Bigg(\Big(-1+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^2\,\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^4\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2$$
$$\Big(7\,\text{Cos}[e+fx]\,(-5-2n+2\,(1+n)\,\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$
$$\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2+8\,(5+2n)$$
$$\text{Hypergeometric2F1}\Big[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$
$$\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)+7\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\Big(-1+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+fx]\,(-15-9n+(9+8n)\,\text{Cos}[e+fx]+n\,\text{Cos}[2\,(e+fx)])$$
$$\text{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^6+2\,(3+2n)\,(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},$$
$$-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^4\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)\Big)\Big)\Bigg)+$$
$$\Bigg(7\,\Big(\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^{1+n}\,\Big(\text{Cos}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Sec}[e+fx]\Big)^{-\frac{3}{2}+n}$$
$$\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2+5\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},$$
$$-2\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\Big(-3+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2+2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^4\Big)\Big)\Bigg)\Bigg/$$
$$\Bigg(\Big(-1+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)\,\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^4\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2$$
$$\Big(7\,\text{Cos}[e+fx]\,(-5-2n+2\,(1+n)\,\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$

$$n,\ \frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\mathrm{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\Big(\frac{5}{2}\,\mathrm{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\mathrm{Cos}[e+f\,x]+n\,\mathrm{Cos}[2\,(e+f\,x)])$$

$$\mathrm{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\Big)\Big)+$$

$$\Big(14\,n\,\left(\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\mathrm{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Big(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\,\mathrm{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\,\mathrm{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},$$

$$-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\left(-3+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\Big)\Big)\Big/$$

$$\Big(\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Big(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Big(7\,\mathrm{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+$$

$$n,\ \frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\mathrm{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\Big(\frac{5}{2}\,\mathrm{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\mathrm{Cos}[e+f\,x]+n\,\mathrm{Cos}[2\,(e+f\,x)])$$

$$\mathrm{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\Big)\Big)+$$

$$\Big(14\,\left(-\frac{3}{2}+n\right)\,\left(\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\mathrm{Sec}[e+f\,x]\right)^{-\frac{5}{2}+n}\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Big(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\,\mathrm{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right] \text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^4\right)\right)$$
$$\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right] \text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f x]\,(-5-2n+2(1+n)\,\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+f x]\,(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)])\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2(3+2n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)+$$
$$\left(14\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{-\frac{3}{2}+n} \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right] \text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+8\,\text{Gamma}\left[\frac{5}{2}+n\right] \text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^3+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right] \text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+4\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^3\right)+$$
$$\frac{32}{7}\left(\frac{5}{2}+n\right) \text{Gamma}\left[\frac{5}{2}+n\right] \text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},\right.$$
$$\left.-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right] \text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-\right.$$
$$\left.2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}[e+f x]\right)+2\left(\frac{3}{2}+n\right) \text{Gamma}\left[\frac{3}{2}+n\right]$$

$$\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\ \left(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\ \text{Sec}[e+f\,x]\right.$$
$$\left.\left.\left.\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\ \text{Tan}[e+f\,x]\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\ \left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\ (-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+\right.\right.$$
$$\left.n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\ \text{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\ \left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\left(\frac{5}{2}\,\text{Cos}[e+f\,x]\ (-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)])\right.$$
$$\text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\ (5+\text{Cos}[e+f\,x])\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\right.$$
$$\left.\left.\left.\left.\frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\right)-$$
$$\left(14\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\ \left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\ \text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\ \text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\right.$$
$$\left.\left.-2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\ \left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\right)$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\ (-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+\right.\right.$$
$$\left.n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\ \text{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+16\,\text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\ \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3$$
$$\left(7\,\text{Cos}[e+f\,x]\ (-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+\right.\right.$$
$$\left.n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$
$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+$$
$$8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Big(-14\,(1+n)\,\text{Cos}[e+f\,x]$$
$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]-7\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$
$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]+7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$
$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+$$
$$n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$4\,\left(\frac{5}{2}+n\right)\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+$$
$$n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Big(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]$$
$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}[e+f\,x]\Big)+$$
$$\frac{16}{3}\,\left(\frac{7}{2}+n\right)\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[4,\,\frac{9}{2}+n,\,\frac{11}{2},\,-2\,\text{Sec}[e+f\,x]$$
$$\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Big(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sec}[e+f\,x]$$
$$\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}[e+f\,x]\Big)\Big)+$$
$$7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Big(-\frac{5}{2}\,\Big(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+$$
$$n\,\text{Cos}[2\,(e+f\,x)]\Big)\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2$$
$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6\,\text{Sin}[e+f\,x]+$$

$$\frac{5}{2}\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^6\,\big(-(9+8\,n)\,\text{Sin}[e+f\,x]-2\,n\,\text{Sin}[2\,(e+f\,x)]\big)+$$
$$\frac{15}{2}\,\text{Cos}[e+f\,x]\,\big(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\big)$$
$$\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^6\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])$$
$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^6\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]-2\,(3+2\,n)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2$$
$$\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^4\,\text{Sin}[e+f\,x]\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2+$$
$$4\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2$$
$$\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^4\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^3+$$
$$\Big(\frac{3}{2}+n\Big)\,\text{Cos}[e+f\,x]\,\big(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\big)$$
$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^6\,\Big(-2\,\text{Cos}\Big[\frac{1}{2}\,(e+f\,x)\Big]\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]-2\,\text{Sec}\big[$$
$$e+f\,x\big]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}[e+f\,x]\Big)+\frac{8}{7}\,\Big(\frac{5}{2}+n\Big)\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])$$
$$\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^4\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\Big(-2\,\text{Cos}\Big[\frac{1}{2}\,(e+f\,x)\Big]\,\text{Sec}[e+f\,x]$$
$$\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}[e+f\,x]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big)\,\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^4\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2$$
$$\Big(7\,\text{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,$$
$$\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2+8\,(5+2\,n)$$
$$\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big]$$
$$\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big)+7\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big)$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\big(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\big)$$

$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)^2\right)\right)$$

Problem 296: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 45 leaves, 2 steps):

$$\frac{2\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1-\text{Sec}[e+f\,x]\right]\text{Tan}[e+f\,x]}{f\sqrt{1+\text{Sec}[e+f\,x]}}$$

Result (type 5, 211 leaves):

$$-\frac{1}{f\,n\,(1+n)}\,i\,2^{-\frac{1}{2}+n}\,e^{\frac{1}{2}i\,(e+f\,x)}\left(1+e^{2\,i\,(e+f\,x)}\right)^{-\frac{1}{2}+n}\left(e^{-i\,(e+f\,x)}\left(1+e^{2\,i\,(e+f\,x)}\right)\right)^{\frac{1}{2}-n}$$
$$\text{Cos}[e+f\,x]^{\frac{1}{2}+n}\left((1+n)\,\text{Hypergeometric2F1}\left[\frac{n}{2},\frac{1}{2}+n,\frac{2+n}{2},-e^{2\,i\,(e+f\,x)}\right]+\right.$$
$$\left.e^{i\,(e+f\,x)}\,n\,\text{Hypergeometric2F1}\left[\frac{1}{2}+n,\frac{1+n}{2},\frac{3+n}{2},-e^{2\,i\,(e+f\,x)}\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]\text{Sec}[e+f\,x]^n\sqrt{1+\text{Sec}[e+f\,x]}$$

Problem 297: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[e+f\,x]^n}{\sqrt{1+\text{Sec}[e+f\,x]}}\,dx$$

Optimal (type 6, 59 leaves, 3 steps):

$$\left(\text{AppellF1}\left[\frac{1}{2},1-n,1,\frac{3}{2},1-\text{Sec}[e+f\,x],\frac{1}{2}(1-\text{Sec}[e+f\,x])\right]\text{Tan}[e+f\,x]\right)\Big/$$
$$\left(f\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 6, 2938 leaves):

$$\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n\right.$$
$$\left.\text{Sec}[e+f\,x]^{-\frac{1}{2}+\frac{1}{2}(-1+2\,n)}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.\right.$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)$$
$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^n\sqrt{1+\text{Sec}[e+fx]}\Bigg)\Bigg/$$
$$\Bigg(\sqrt{2}\,\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)-\Bigg(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^n\sqrt{1+\text{Sec}[e+fx]}\,\text{Sin}[e+fx]\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+\Bigg(3\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^n\sqrt{1+\text{Sec}[e+fx]}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+\Bigg(3\sqrt{2}\,\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^n\sqrt{1+\text{Sec}[e+fx]}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$
$$\left(3\, \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n) \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-1+2 n) \text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-\left(3\sqrt{2}\, \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Cos}[e+f x] \left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^n \sqrt{1+\text{Sec}[e+f x]}\, \text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\left(\left(\left(2(-1+n) \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.\right.$$
$$\left.(-1+2 n) \text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$3\left(-\frac{1}{3}(1-n) \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \left(2(-1+n)\left(-\frac{3}{5}(2-n) \text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,3-n,\frac{7}{2},\right.\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$
$$\left(-\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+(-1+2 n)\left(-\frac{3}{5}(1-n) \text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\right)\Big/$$
$$\left(3\, \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n) \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\Big)^{2}+$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]\left(\text{Sec}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right)^{n}\left(\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\,\text{Sec}\left[e+f\,x\right]\right)^{n}\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\,\text{Tan}\left[e+f\,x\right]\Big)\Big/\Big(\sqrt{2}\,\sqrt{1+\text{Sec}\left[e+f\,x\right]}$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]+\Big(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]+\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]\Big)\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\Big)\Big)+$$

$$\Big(3\,\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]\,\text{Cos}\left[e+f\,x\right]\left(\text{Sec}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right)^{n}\left(\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\,\text{Sec}\left[e+f\,x\right]\right)^{-1+n}\sqrt{1+\text{Sec}\left[e+f\,x\right]}\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\Big(-\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\,\text{Sec}\left[e+f\,x\right]\,\text{Sin}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\,\text{Sec}\left[e+f\,x\right]\,\text{Tan}\left[e+f\,x\right]\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]+\Big(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]+\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\right]\Big)\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^{2}\Big)\Big)\Big)$$

Problem 298: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}\left[e+f\,x\right]^{n}}{\left(1+\text{Sec}\left[e+f\,x\right]\right)^{3/2}}\,dx$$

Optimal (type 6, 62 leaves, 3 steps):

$$\left(\text{AppellF1}\left[\frac{1}{2},\,1-n,\,2,\,\frac{3}{2},\,1-\text{Sec}\left[e+f\,x\right],\,\frac{1}{2}\,\left(1-\text{Sec}\left[e+f\,x\right]\right)\right]\,\text{Tan}\left[e+f\,x\right]\right)\Big/\left(2\,f\,\sqrt{1+\text{Sec}\left[e+f\,x\right]}\right)$$

Result (type 6, 2990 leaves):

$$\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\text{Sec}[e+fx]^{\frac{1}{2}+\frac{1}{2}(-3+2n)}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\Bigg/$$

$$\left(f\,(1+\text{Sec}[e+fx])^{3/2}\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$

$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(\left(12\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\Bigg/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\right.$$

$$\left.\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\Bigg/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+\Bigg(6\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+\Bigg(6\,\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,\right.$$

$$\left.2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Big(\Big(2\,(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$(-3+2n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]+3\,\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,$$

$$\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]+$$

$$\frac{1}{3}\Big(-\frac{3}{2}+n\Big)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

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

$$\Big(2\,(-1+n)\,\Big(-\frac{3}{5}(2-n)\,\text{AppellF1}\Big[\frac{5}{2},-\frac{3}{2}+n,3-n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]+\frac{3}{5}\Big(-\frac{3}{2}+n\Big)$$

$$\text{AppellF1}\Big[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big)+(-3+2n)\,\Big(-\frac{3}{5}(1-n)\,\text{AppellF1}\Big[\frac{5}{2},$$

$$-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]+\frac{3}{5}\Big(-\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{2}+n,1-n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$\Big(2\,(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$(-3+2n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Big(6\,\Big(\frac{3}{2}+n\Big)\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

$$\text{Cos}[e+f x]\,\Big(\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)^n\,\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Sec}[e+f x]\Big)^{\frac{1}{2}+n}\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]$$

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

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$(-3+2\,n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)$$

Problem 299: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(-\text{Sec}[e+f\,x])^n\,(1+\text{Sec}[e+f\,x])^{3/2}\,dx$$

Optimal (type 5, 117 leaves, 4 steps):

$$\frac{2\,(-\text{Sec}[e+f\,x])^n\,\text{Tan}[e+f\,x]}{f\,(1+2\,n)\,\sqrt{1+\text{Sec}[e+f\,x]}}-$$
$$\left((1+4\,n)\,\text{Hypergeometric2F1}\left[\frac{1}{2},n,1+n,\text{Sec}[e+f\,x]\right]\,(-\text{Sec}[e+f\,x])^n\,\text{Tan}[e+f\,x]\right)\Big/$$
$$\left(f\,n\,(1+2\,n)\,\sqrt{1-\text{Sec}[e+f\,x]}\,\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 5, 6381 leaves):

$$\left(14\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^3\,\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n\right.$$
$$(-\text{Sec}[e+f\,x])^n\,\text{Sec}[e+f\,x]^{-\frac{3}{2}-n}\,\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}$$
$$(1+\text{Sec}[e+f\,x])^{3/2}\,\left(\text{Cos}\left[\frac{3}{2}(e+f\,x)\right]\,\left(\frac{1}{8}\,\text{Sec}[e+f\,x]^{-\frac{3}{2}+n}+\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}+\right.\right.$$
$$\frac{3}{4}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]-\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]^2+$$
$$\text{Cos}[e+f\,x]\,\left(\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}+\frac{3}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]\right)+$$
$$\text{Sec}[e+f\,x]\,\left(\frac{1}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}+\frac{3}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]-\right.$$
$$\left.\left.\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]^2-\frac{1}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]^3\right)\right)-$$
$$\frac{1}{8}\,i\,\text{Sec}[e+f\,x]^{-\frac{3}{2}+n}\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]-\frac{3}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$\frac{3}{4}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$\frac{3}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]^2\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]+\text{Cos}[e+f\,x]$$
$$\left(-\frac{3}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]+\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]\right)+$$
$$\text{Sec}[e+f\,x]\,\left(-\frac{1}{8}\,i\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]+\frac{3}{8}\,\text{Sec}[e+f\,x]^{\frac{1}{2}+n}\,\text{Sin}[e+f\,x]\right.$$

$$\text{Sin}\left[\frac{3}{2}(e+fx)\right]+\frac{3}{8}\,i\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\,\text{Sin}[e+fx]^2\,\text{Sin}\left[\frac{3}{2}(e+fx)\right]-$$
$$\frac{1}{8}\,\text{Sec}[e+fx]^{\frac{1}{2}+n}\,\text{Sin}[e+fx]^3\,\text{Sin}\left[\frac{3}{2}(e+fx)\right]\Bigg)\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(f\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\Bigg(7\,\text{Cos}[e+fx]\,\left(-5-2n+2(1+n)\,\text{Cos}[e+fx]\right)$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8\,(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\Bigg(\frac{5}{2}\,\text{Cos}[e+fx]\,\left(-15-9n+(9+8n)\,\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+$$
$$2\,(3+2n)\,(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)$$
$$\Bigg(-\Bigg(\Bigg(14\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\Bigg(7\,\text{Cos}[e+fx]\,\left(-5-2n+2(1+n)\,\text{Cos}[e+fx]\right)\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$

$$\frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2+8\,(5+2\,n)$$

$$\text{Hypergeometric2F1}\left[3, \frac{7}{2}+n, \frac{9}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)$$

$$\Big(\frac{5}{2}\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2, \frac{5}{2}+n, \frac{7}{2},$$

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

$$\Big(7\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}$$

$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+n, \frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1, \frac{3}{2}+n, \frac{5}{2},$$

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

$$\Big(\Big(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)\,\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2$$

$$\Big(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2, \frac{5}{2}+$$

$$n, \frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3, \frac{7}{2}+n, \frac{9}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)$$

$$\Big(\frac{5}{2}\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2, \frac{5}{2}+n,$$

$$\frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)\Big)\Big)+$$

$$\Big(14\,n\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2$$

$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+n, \frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2 + 5\,\mathrm{Gamma}\left[\frac{3}{2}+n\right] \mathrm{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\right.$$

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

$$\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\left(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4 \mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$

$$\left(7\,\mathrm{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\left[2,\,\frac{5}{2}+\right.\right.$$

$$\left.n,\,\frac{7}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\mathrm{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\left(\frac{5}{2}\,\mathrm{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\mathrm{Cos}[e+f\,x]+n\,\mathrm{Cos}[2\,(e+f\,x)])\right.$$

$$\mathrm{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\right.$$

$$\left.\left.\left.\left.\frac{7}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\right)+$$

$$\left(14\left(-\frac{3}{2}+n\right)\left(\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\mathrm{Sec}[e+f\,x]\right)^{-\frac{5}{2}+n}\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right.$$

$$\left(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2 + 5\,\mathrm{Gamma}\left[\frac{3}{2}+n\right] \mathrm{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\right.$$

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

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

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

$$\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\left(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4 \mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$

$$\left(7\,\mathrm{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\mathrm{Cos}[e+f\,x])\,\mathrm{Hypergeometric2F1}\left[2,\,\frac{5}{2}+\right.\right.$$

$$\left.n,\,\frac{7}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\mathrm{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\text{Cos}[e+fx])\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]+8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\frac{7}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^3+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+4\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^3\right)+$$
$$\frac{32}{7}\left(\frac{5}{2}+n\right)\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},\right.$$
$$\left.-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-2\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]-\right.$$
$$\left.2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}[e+fx]\right)+2\left(\frac{3}{2}+n\right)\text{Gamma}\left[\frac{3}{2}+n\right]$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\left(-2\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\right.$$
$$\left.\left.\left.\text{Sin}\left[\frac{1}{2}(e+fx)\right]-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}[e+fx]\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\text{Cos}[e+fx]\left(-5-2n+2(1+n)\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\text{Sec}[e+fx]\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\text{Cos}[2(e+fx)]\right)\right.$$

$$\text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6 + 2(3+2n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+n,\right.$$
$$\left.\frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)\Big) -$$
$$\Bigg(14\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2, \frac{5}{2}+n, \frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 + 5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2},\right.$$
$$\left.-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 + 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^4\right)\Bigg)\Bigg)$$
$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\Bigg(7\,\text{Cos}[e+f x]\,(-5-2n+2(1+n)\,\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+\right.$$
$$\left.n, \frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 +$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3, \frac{7}{2}+n, \frac{9}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) + 16\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^3$$
$$\Bigg(7\,\text{Cos}[e+f x]\,(-5-2n+2(1+n)\,\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+\right.$$
$$\left.n, \frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 +$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3, \frac{7}{2}+n, \frac{9}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) + 7\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\Bigg(\frac{5}{2}\text{Cos}[e+f x]\,(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)])$$
$$\text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6 + 2(3+2n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2, \frac{5}{2}+\right.$$
$$\left.n, \frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) +$$
$$8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg(-14(1+n)\,\text{Cos}[e+f x]$$
$$\text{Hypergeometric2F1}\left[2, \frac{5}{2}+n, \frac{7}{2}, -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Sin}[e+f x] - 7(-5-2n+2(1+n)\,\text{Cos}[e+f x])$$

$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Sin}[e+f x]+7\,\text{Cos}[e+f x]\,(-5-2n+2(1+n)\,\text{Cos}[e+f x])$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+\right.$$
$$\left.n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$4\left(\frac{5}{2}+n\right)\text{Cos}[e+f x]\,(-5-2n+2(1+n)\,\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+\right.$$
$$\left.n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\right.$$
$$\left.\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\right)+$$
$$\frac{16}{3}\left(\frac{7}{2}+n\right)(5+2n)\,\text{Hypergeometric2F1}\left[4,\frac{9}{2}+n,\frac{11}{2},-2\,\text{Sec}[e+f x]\right.$$
$$\left.\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\right.$$
$$\left.\left.\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\right)\right)+$$
$$7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(-\frac{5}{2}\left(-15-9n+(9+8n)\,\text{Cos}[e+f x]+\right.\right.$$
$$\left.n\,\text{Cos}[2(e+f x)]\right)\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\right.$$
$$\left.\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Sin}[e+f x]+$$
$$\frac{5}{2}\text{Cos}[e+f x]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6(-(9+8n)\,\text{Sin}[e+f x]-2n\,\text{Sin}[2(e+f x)])+$$
$$\frac{15}{2}\text{Cos}[e+f x]\,(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)])$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Tan}\left[\frac{1}{2}(e+f x)\right]+2(3+2n)\,(5+\text{Cos}[e+f x])$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Tan}\left[\frac{1}{2}(e+f x)\right]-2(3+2n)\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\right.$$
$$\left.\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Sin}[e+f x]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+$$
$$4(3+2n)\,(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\right.$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^3+$$
$$\left(\frac{3}{2}+n\right)\text{Cos}[e+f x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2\,(e+f x)]\right)$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\Big(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[$$
$$e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\Big)+\frac{8}{7}\left(\frac{5}{2}+n\right)(3+2\,n)\,(5+\text{Cos}[e+f x])$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]$$
$$\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(\Big(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\Big(7\,\text{Cos}[e+f x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$
$$\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+8\,(5+2\,n)$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\Big(\frac{5}{2}\text{Cos}[e+f x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2\,(e+f x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},$$
$$-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)^2\Big)\Big)$$

Problem 300: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(-\text{Sec}[e+f x])^n\sqrt{1+\text{Sec}[e+f x]}\,dx$$

Optimal (type 5, 64 leaves, 2 steps):

$$-\left(\left(\text{Hypergeometric2F1}\left[\frac{1}{2},n,1+n,\text{Sec}[e+f x]\right](-\text{Sec}[e+f x])^n\,\text{Tan}[e+f x]\right)\Big/\left(f\,n\,\sqrt{1-\text{Sec}[e+f x]}\,\sqrt{1+\text{Sec}[e+f x]}\right)\right)$$

Result (type 5, 213 leaves):

$$-\frac{1}{f n (1+n)} i\, 2^{-\frac{1}{2}+n} e^{\frac{1}{2} i (e+f x)} \left(1+e^{2 i (e+f x)}\right)^{-\frac{1}{2}+n} \left(e^{-i (e+f x)} \left(1+e^{2 i (e+f x)}\right)\right)^{\frac{1}{2}-n} \text{Cos}[e+f x]^{\frac{1}{2}+n} \left((1+n)\, \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{1}{2}+n, \frac{2+n}{2}, -e^{2 i (e+f x)}\right] + e^{i (e+f x)}\, n\, \text{Hypergeometric2F1}\left[\frac{1}{2}+n, \frac{1+n}{2}, \frac{3+n}{2}, -e^{2 i (e+f x)}\right]\right) \text{Sec}\left[\frac{1}{2} (e+f x)\right] (-\text{Sec}[e+f x])^n \sqrt{1+\text{Sec}[e+f x]}$$

Problem 301: Result more than twice size of optimal antiderivative.

$$\int \frac{(-\text{Sec}[e+f x])^n}{\sqrt{1+\text{Sec}[e+f x]}}\, dx$$

Optimal (type 6, 73 leaves, 2 steps):

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

Result (type 6, 2951 leaves):

$$\left(3 \sqrt{2}\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] \left(\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2\right)^n (-\text{Sec}[e+f x])^n\, \text{Sec}[e+f x]^{-\frac{1}{2}-n+\frac{1}{2} (-1+2 n)} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]^2 \text{Sec}[e+f x]\right)^n \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right) \Big/$$
$$\left(f \left(3\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] + \left(2 (-1+n)\, \text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] + (-1+2 n)\, \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right)\right.$$
$$\left(\left(3\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] \text{Cos}[e+f x] \left(\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2\right)^{1+n} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]^2 \text{Sec}[e+f x]\right)^n \sqrt{1+\text{Sec}[e+f x]}\right) \Big/\right.$$
$$\left(\sqrt{2} \left(3\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] + \left(2 (-1+n)\, \text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right] + (-1+2 n)\, \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right)\right) - \left(3 \sqrt{2}\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\ \text{Sin}[e+fx]\ \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) + \Big(3\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\ \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) + \Big(3\sqrt{2}\,\text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\ \text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}\left(-\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big)\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) - \Big(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\ \text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Big(\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$

$$3\left(-\frac{1}{3}(1-n)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\right.$$

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

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(2\left(-1+n\right)\left(-\frac{3}{5}(2-n)\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,3-n,\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}$$

$$\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+\left(-1+2n\right)\left(-\frac{3}{5}(1-n)\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(2\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^n$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(2\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\left(3\sqrt{2}\ n\ \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+n}$$
$$\sqrt{1+\text{Sec}[e+f x]}\ \text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\ \text{Tan}[e+f x]\right)\right)\Big/$$
$$\left(3\ \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\ \text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)$$

Problem 302: Result more than twice size of optimal antiderivative.

$$\int\frac{(-\text{Sec}[e+f x])^n}{(1+\text{Sec}[e+f x])^{3/2}}\,dx$$

Optimal (type 6, 73 leaves, 2 steps):

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

Result (type 6, 3003 leaves):

$$\left(6\ \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n(-\text{Sec}[e+f x])^n\ \text{Sec}[e+f x]^{\frac{1}{2}-n+\frac{1}{2}(-3+2n)}$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(f\,(1+\text{Sec}[e+f x])^{3/2}\left(3\ \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left(2(-1+n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(12\ \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-\Bigg(6\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+\Bigg(6\,n\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(6\,\text{Cos}[e+f x]\,\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\,\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,\right.\right.$$
$$2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\,\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2$$
$$\left(\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+3\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\right.\right.$$
$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\left(2\,(-1+n)\,\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{3}{2}+n,3-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(-\frac{3}{2}+n\right)$$
$$\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Big)+(-3+2n)\Big(-\frac{3}{5}(1-n)\,\mathrm{AppellF1}\Big[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(-\frac{1}{2}+n\right)\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{2}+n,1-n,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+\Big(2(-1+n)\,\mathrm{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(-3+2n)\,\mathrm{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)^2+$$

$$\Big(6\left(\frac{3}{2}+n\right)\mathrm{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\mathrm{Cos}[e+f x]\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{\frac{1}{2}+n}\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Big(-\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]\mathrm{Sec}[e+f x]\,\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\,\mathrm{Tan}[e+f x]\Big)\Big)\Big/$$

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+\Big(2(-1+n)\,\mathrm{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(-3+2n)\,\mathrm{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)\Big)$$

Problem 303: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(d\,\mathrm{Sec}[e+f x])^n\,(1+\mathrm{Sec}[e+f x])^{3/2}\,dx$$

Optimal (type 5, 117 leaves, 4 steps):

$$\frac{2\,(d\,\mathrm{Sec}[e+f x])^n\,\mathrm{Tan}[e+f x]}{f\,(1+2 n)\,\sqrt{1+\mathrm{Sec}[e+f x]}}-\left((1+4 n)\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},n,1+n,\mathrm{Sec}[e+f x]\right](d\,\mathrm{Sec}[e+f x])^n\,\mathrm{Tan}[e+f x]\right)\Big/\left(f\,n\,(1+2 n)\,\sqrt{1-\mathrm{Sec}[e+f x]}\,\sqrt{1+\mathrm{Sec}[e+f x]}\right)$$

Result (type 5, 6381 leaves) :

$$\left(14\,\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^3\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\,\mathrm{Sec}[e+f x]^{-\frac{3}{2}-n}\,(d\,\mathrm{Sec}[e+f x])^n\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{-\frac{3}{2}+n}\right.$$
$$(1+\mathrm{Sec}[e+f x])^{3/2}\left(\mathrm{Cos}\left[\frac{3}{2}(e+f x)\right]\left(\frac{1}{8}\mathrm{Sec}[e+f x]^{-\frac{3}{2}+n}+\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\right.\right.$$
$$\frac{3}{4}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]-\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^2+$$
$$\mathrm{Cos}[e+f x]\left(\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]\right)+$$
$$\mathrm{Sec}[e+f x]\left(\frac{1}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]-\right.$$
$$\left.\left.\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^2-\frac{1}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^3\right)\right)-$$
$$\frac{1}{8}\,i\,\mathrm{Sec}[e+f x]^{-\frac{3}{2}+n}\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]-\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+$$
$$\frac{3}{4}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]\,\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+$$
$$\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^2\,\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+\mathrm{Cos}[e+f x]$$
$$\left(-\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]\,\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]\right)+$$
$$\mathrm{Sec}[e+f x]\left(-\frac{1}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]\right.$$
$$\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8}\,i\,\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^2\,\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]-$$
$$\left.\left.\frac{1}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^3\,\mathrm{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg/$$
$$\left(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\mathrm{Sec}[e+f x]\,\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2+$$
$$5\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\mathrm{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\mathrm{Sec}[e+f x]\,\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\left.\left(-3+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2+2\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^4\right)\right)\right)\Big/$$

$$\Big(f\left(-1+\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\right)\Big(8\,\mathrm{Gamma}\left[\tfrac{5}{2}+n\right]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2$$

$$\Big(7\,\mathrm{Cos}[e+fx]\,(-5-2n+2(1+n)\,\mathrm{Cos}[e+fx])$$

$$\mathrm{Hypergeometric2F1}\left[2,\tfrac{5}{2}+n,\tfrac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^2+$$

$$8(5+2n)\,\mathrm{Hypergeometric2F1}\left[3,\tfrac{7}{2}+n,\tfrac{9}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]$$

$$\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\Big)+7\,\mathrm{Gamma}\left[\tfrac{3}{2}+n\right]\left(-1+\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\right)$$

$$\Big(\tfrac{5}{2}\mathrm{Cos}[e+fx]\,(-15-9n+(9+8n)\,\mathrm{Cos}[e+fx]+n\,\mathrm{Cos}[2(e+fx)])$$

$$\mathrm{Hypergeometric2F1}\left[1,\tfrac{3}{2}+n,\tfrac{5}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^6+$$

$$2(3+2n)(5+\mathrm{Cos}[e+fx])\,\mathrm{Hypergeometric2F1}\Big[2,\tfrac{5}{2}+n,\tfrac{7}{2},$$

$$-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\Big]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\Big)\Big)$$

$$\Big(-\Big(\Big(14\left(\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\mathrm{Cos}\left[\tfrac{1}{2}(e+fx)\right]^2\mathrm{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2$$

$$\Big(8\,\mathrm{Gamma}\left[\tfrac{5}{2}+n\right]\mathrm{Hypergeometric2F1}\left[2,\tfrac{5}{2}+n,\tfrac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]$$

$$\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2+$$

$$5\,\mathrm{Gamma}\left[\tfrac{3}{2}+n\right]\mathrm{Hypergeometric2F1}\left[1,\tfrac{3}{2}+n,\tfrac{5}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]$$

$$\left(-3+\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2+2\,\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^4\right)\Big)\Big)\Big/$$

$$\Big(\left(-1+\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\right)^2\Big(8\,\mathrm{Gamma}\left[\tfrac{5}{2}+n\right]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2$$

$$\Big(7\,\mathrm{Cos}[e+fx]\,(-5-2n+2(1+n)\,\mathrm{Cos}[e+fx])\,\mathrm{Hypergeometric2F1}\Big[2,\tfrac{5}{2}+n,$$

$$\tfrac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\Big]\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^2+8(5+2n)$$

$$\mathrm{Hypergeometric2F1}\left[3,\tfrac{7}{2}+n,\tfrac{9}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]$$

$$\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\Big)+7\,\mathrm{Gamma}\left[\tfrac{3}{2}+n\right]\left(-1+\mathrm{Tan}\left[\tfrac{1}{2}(e+fx)\right]^2\right)$$

$$\Big(\tfrac{5}{2}\mathrm{Cos}[e+fx]\,(-15-9n+(9+8n)\,\mathrm{Cos}[e+fx]+n\,\mathrm{Cos}[2(e+fx)])$$

$$\mathrm{Hypergeometric2F1}\left[1,\tfrac{3}{2}+n,\tfrac{5}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\tfrac{1}{2}(e+fx)\right]^2\right]$$

$$\mathrm{Sec}\left[\tfrac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\mathrm{Cos}[e+fx])\,\mathrm{Hypergeometric2F1}\Big[2,\tfrac{5}{2}+n,\tfrac{7}{2},$$

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

$$\Bigg(7\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{1+n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}$$

$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},$$

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

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$

$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\Bigg(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,$$

$$\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(14\,n\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},$$

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

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$

$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\Big(\frac{5}{2}\text{Cos}[e+f x]\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2(3+2 n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$
$$\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)\Big)+$$
$$\Big(14\left(-\frac{3}{2}+n\right)\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-\frac{5}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},$$
$$-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\left(-3+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^4\right)\Big)$$
$$\Big(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\Big)\Big)\Big/$$
$$\Big(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\Big(7\,\text{Cos}[e+f x]\left(-5-2 n+2(1+n)\,\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$
$$n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+$$
$$8(5+2 n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\Big(\frac{5}{2}\text{Cos}[e+f x]\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2(3+2 n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$
$$\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)\Big)+$$
$$\Big(14\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^3+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+4\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^3\right)+$$
$$\frac{32}{7}\left(\frac{5}{2}+n\right)\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},\right.$$
$$\left.-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(-2\,\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]-\right.$$
$$\left.2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}[e+f x]\right)+2\left(\frac{3}{2}+n\right)\text{Gamma}\left[\frac{3}{2}+n\right]$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^4\right)\left(-2\,\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]\text{Sec}[e+f x]\right.$$
$$\left.\left.\left.\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}[e+f x]\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f x]\left(-5-2 n+2\left(1+n\right)\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2+$$
$$8\left(5+2 n\right)\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+f x]\left(-15-9 n+\left(9+8 n\right)\text{Cos}[e+f x]+n\,\text{Cos}\left[2\left(e+f x\right)\right]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^6+2\left(3+2 n\right)\left(5+\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\right)\right)-$$
$$\left(14\left(\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Sec}[e+f x]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$

$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\Bigg)$$

$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$

$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+16\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$

$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,\left(5+\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$

$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Bigg(-14\,(1+n)\,\text{Cos}[e+f\,x]$$

$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]-7\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$

$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]+7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$

$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+$$

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

$$4\,\left(\frac{5}{2}+n\right)\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+$$

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

$$\frac{16}{3}\left(\frac{7}{2}+n\right)(5+2n)\,\text{Hypergeometric2F1}\Big[4,\ \frac{9}{2}+n,\ \frac{11}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\Big)\Big)+$$

$$7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Big(-\frac{5}{2}\big(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\big)\,\text{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Sin}[e+f x]+$$

$$\frac{5}{2}\text{Cos}[e+f x]\,\text{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\big(-(9+8n)\,\text{Sin}[e+f x]-2n\,\text{Sin}[2(e+f x)]\big)+$$

$$\frac{15}{2}\text{Cos}[e+f x]\,\big(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\big)\ \text{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Tan}\left[\frac{1}{2}(e+f x)\right]+2(3+2n)\,(5+\text{Cos}[e+f x])$$

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

$$4(3+2n)\,(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]^3+$$

$$\left(\frac{3}{2}+n\right)\text{Cos}[e+f x]\,\big(-15-9n+(9+8n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\big)\ \text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\Big(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\Big)+\frac{8}{7}\left(\frac{5}{2}+n\right)(3+2n)\,(5+\text{Cos}[e+f x])$$

$$\text{Hypergeometric2F1}\Big[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \left(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\right.$$
$$\left.\left.\left.\left.\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}[e+f x]\right)\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f x]\,\left(-5-2 n+2(1+n)\,\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.\right.$$
$$\left.\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+8\,(5+2 n)$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+f x]\,\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2\,(3+2 n)\,\left(5+\text{Cos}[e+f x]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\left.\left.\left.-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)^2\right)\right)\right)$$

Problem 304: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (d\,\text{Sec}[e+f x])^n \sqrt{1+\text{Sec}[e+f x]}\,dx$$

Optimal (type 5, 64 leaves, 2 steps):

$$-\left(\left(\text{Hypergeometric2F1}\left[\frac{1}{2},n,1+n,\text{Sec}[e+f x]\right](d\,\text{Sec}[e+f x])^n\,\text{Tan}[e+f x]\right)\Big/\right.$$
$$\left.\left(f\,n\sqrt{1-\text{Sec}[e+f x]}\,\sqrt{1+\text{Sec}[e+f x]}\right)\right)$$

Result (type 5, 213 leaves):

$$-\frac{1}{f\,n\,(1+n)}\,i\,2^{-\frac{1}{2}+n}\,e^{\frac{1}{2}i(e+f x)}\left(1+e^{2 i(e+f x)}\right)^{-\frac{1}{2}+n}\left(e^{-i(e+f x)}\left(1+e^{2 i(e+f x)}\right)\right)^{\frac{1}{2}-n}$$
$$\text{Cos}[e+f x]^{\frac{1}{2}+n}\left((1+n)\,\text{Hypergeometric2F1}\left[\frac{n}{2},\frac{1}{2}+n,\frac{2+n}{2},-e^{2 i(e+f x)}\right]+\right.$$
$$\left.e^{i(e+f x)}\,n\,\text{Hypergeometric2F1}\left[\frac{1}{2}+n,\frac{1+n}{2},\frac{3+n}{2},-e^{2 i(e+f x)}\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right](d\,\text{Sec}[e+f x])^n\sqrt{1+\text{Sec}[e+f x]}$$

Problem 305: Result more than twice size of optimal antiderivative.

$$\int \frac{(d\,\text{Sec}[e+f\,x])^n}{\sqrt{1+\text{Sec}[e+f\,x]}}\,dx$$

Optimal (type 6, 73 leaves, 2 steps):

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

Result (type 6, 2951 leaves):

$$\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n \text{Sec}[e+f\,x]^{-\frac{1}{2}-n+\frac{1}{2}(-1+2n)}(d\,\text{Sec}[e+f\,x])^n\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right.$$
$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Cos}[e+f\,x]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\sqrt{1+\text{Sec}[e+f\,x]}\right)\Big/\right.$$
$$\left(\sqrt{2}\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)-\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\sqrt{1+\text{Sec}[e+f\,x]}\,\text{Sin}[e+f\,x]\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) + \Big(3\sqrt{2}\, n\, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) + \Big(3\sqrt{2}\,\text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\, \text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big)\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) - \Big(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Cos}[e+fx] \left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\, \text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Big(\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] +$$
$$3\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big) +$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \left(2(-1+n)\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,3-n,\frac{7}{2},\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$
$$\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+(-1+2n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^n$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]\text{Tan}[e+f x]\right)\Big/\left(\sqrt{2}\,\sqrt{1+\text{Sec}[e+f x]}\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$
$$\left(3\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+n}$$
$$\sqrt{1+\text{Sec}[e+f x]}\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)$$

Problem 306: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\text{Sec}[e+f x])^n}{(1+\text{Sec}[e+f x])^{3/2}}\,dx$$

Optimal (type 6, 73 leaves, 2 steps):

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

Result (type 6, 3003 leaves):

$$\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\text{Sec}[e+f x]^{\frac{1}{2}-n+\frac{1}{2}(-3+2 n)}\,(d\,\text{Sec}[e+f x])^n$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(f\,(1+\text{Sec}[e+f x])^{3/2}\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(12\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{1+n}$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)-\Big(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+\Big(6\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+\Big(6\,\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,$$

$$2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2$$
$$\Bigg(\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+3\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\right.$$
$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\Bigg(2(-1+n)\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{3}{2}+n,3-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}\left(-\frac{3}{2}+n\right)$$
$$\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+(-3+2n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Bigg)\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\Big(2\,(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+(-3+2 n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)^2+$$

$$\Big(6\left(\frac{3}{2}+n\right)\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Cos}[e+f x]\left(\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\right)^n\left(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Sec}[e+f x]\right)^{\frac{1}{2}+n}\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\left(-1+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\right)^2\Big(-\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]+\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Sec}[e+f x]\,\text{Tan}[e+f x]\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+\Big(2\,(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+(-3+2 n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)\Big)$$

Problem 307: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^n\,(a+a\,\text{Sec}[e+f x])^{5/2}\,dx$$

Optimal (type 5, 177 leaves, 4 steps):

$$\frac{2 a^3\,(7+4 n)\,\text{Sec}[e+f x]^{1+n}\,\text{Sin}[e+f x]}{f\,(1+2 n)\,(3+2 n)\,\sqrt{a+a\,\text{Sec}[e+f x]}}+\frac{2 a^2\,\text{Sec}[e+f x]^{1+n}\,\sqrt{a+a\,\text{Sec}[e+f x]}\,\text{Sin}[e+f x]}{f\,(3+2 n)}+$$

$$\left(2 a^3\,(3+24 n+16 n^2)\,\text{Hypergeometric2F1}\Big[\frac{1}{2},1-n,\frac{3}{2},1-\text{Sec}[e+f x]\Big]\,\text{Tan}[e+f x]\right)\Big/\left(f\,(1+2 n)\,(3+2 n)\,\sqrt{a+a\,\text{Sec}[e+f x]}\right)$$

Result (type 5, 435 leaves):

$$-\frac{1}{f\,\mathrm{Sec}[e+f x]^{5/2}}\, i\, 2^{-\frac{5}{2}+n}\, e^{-i\left(\frac{1}{2}+n\right)(e+f x)} \left(\frac{e^{i(e+f x)}}{1+e^{2 i (e+f x)}}\right)^{\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{\frac{1}{2}+n}$$

$$\left(\frac{1}{2+n} 10\, e^{i(2+n)(e+f x)}\, \mathrm{Hypergeometric2F1}\left[1+\frac{n}{2}, \frac{5}{2}+n, 2+\frac{n}{2}, -e^{2 i (e+f x)}\right]+\right.$$

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

$$\frac{e^{i n (e+f x)}\, \mathrm{Hypergeometric2F1}\left[\frac{n}{2}, \frac{5}{2}+n, 1+\frac{n}{2}, -e^{2 i (e+f x)}\right]}{n}+$$

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

$$\frac{10\, e^{i(3+n)(e+f x)}\, \mathrm{Hypergeometric2F1}\left[\frac{5}{2}+n, \frac{3+n}{2}, \frac{5+n}{2}, -e^{2 i (e+f x)}\right]}{3+n}+$$

$$\left.\frac{e^{i(5+n)(e+f x)}\, \mathrm{Hypergeometric2F1}\left[\frac{5}{2}+n, \frac{5+n}{2}, \frac{7+n}{2}, -e^{2 i (e+f x)}\right]}{5+n}\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^5 (a(1+\mathrm{Sec}[e+f x]))^{5/2}$$

Problem 308: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 108 leaves, 4 steps):

$$\frac{2 a^2\, \mathrm{Sec}[e+f x]^{1+n}\, \mathrm{Sin}[e+f x]}{f(1+2 n)\sqrt{a+a\,\mathrm{Sec}[e+f x]}}+$$

$$\left(2 a^2 (1+4 n)\, \mathrm{Hypergeometric2F1}\left[\frac{1}{2}, 1-n, \frac{3}{2}, 1-\mathrm{Sec}[e+f x]\right] \mathrm{Tan}[e+f x]\right) \Big/ \left(f(1+2 n)\sqrt{a+a\,\mathrm{Sec}[e+f x]}\right)$$

Result (type 5, 6369 leaves):

$$\left(14\, \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^3 \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\right.$$

$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^{-\frac{3}{2}+n} (a(1+\mathrm{Sec}[e+f x]))^{3/2}$$

$$\left(\mathrm{Cos}\left[\frac{3}{2}(e+f x)\right] \left(\frac{1}{8}\mathrm{Sec}[e+f x]^{-\frac{3}{2}+n}+\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{4} i\, \mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]-\right.\right.$$

$$\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]^2+\mathrm{Cos}[e+f x]\left(\frac{3}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i\, \mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\right.$$

$$\left.\mathrm{Sin}[e+f x]\right)+\mathrm{Sec}[e+f x]\left(\frac{1}{8}\mathrm{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i\, \mathrm{Sec}[e+f x]^{\frac{1}{2}+n}\mathrm{Sin}[e+f x]-\right.$$

$$\frac{3}{8}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]^2-\frac{1}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]^3\Big)\Big)-$$

$$\frac{1}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{-\frac{3}{2}+n}\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]-\frac{3}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+$$

$$\frac{3}{4}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+$$

$$\frac{3}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]^2\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+\text{Cos}[e+f x]$$

$$\Big(-\frac{3}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+\frac{3}{8}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]\Big)+$$

$$\text{Sec}[e+f x]\,\Big(-\frac{1}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+\frac{3}{8}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]$$

$$\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]+\frac{3}{8}\,\mathrm{i}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]^2\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]-$$

$$\frac{1}{8}\,\text{Sec}[e+f x]^{\frac{1}{2}+n}\,\text{Sin}[e+f x]^3\,\text{Sin}\Big[\frac{3}{2}\,(e+f x)\Big]\Big)\Big)\,\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]$$

$$\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]$$

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

$$5\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]$$

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

$$\Big(f\,\text{Sec}[e+f x]^{3/2}\,\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big)\,\Big(8\,\text{Gamma}\Big[\frac{5}{2}+n\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f x)\Big]^4$$

$$\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2\,\Big(7\,\text{Cos}[e+f x]\,\big(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f x]\big)$$

$$\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f x)\Big]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]$$

$$\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big)+7\,\text{Gamma}\Big[\frac{3}{2}+n\Big]\,\Big(-1+\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big)$$

$$\Big(\frac{5}{2}\,\text{Cos}[e+f x]\,\big(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2\,(e+f x)]\big)$$

$$\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f x)\Big]^6+$$

$$2\,(3+2\,n)\,(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},$$

$$-2\,\text{Sec}[e+f x]\,\text{Sin}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f x)\Big]^4\,\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big)\Big)$$

$$\Big(-\Big(\Big(14\,\Big(\text{Sec}\Big[\frac{1}{2}\,(e+f x)\Big]^2\Big)^{1+n}\,\Big(\text{Cos}\Big[\frac{1}{2}\,(e+f x)\Big]^2\,\text{Sec}[e+f x]\Big)^{-\frac{3}{2}+n}\,\text{Tan}\Big[\frac{1}{2}\,(e+f x)\Big]^2$$

$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\,\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\right.\right.$$
$$\left.\frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+8\,(5+2\,n)$$
$$\text{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\left(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,\left(5+\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\right.$$
$$\left.\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\right)\right)+$$
$$\left(7\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{1+n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\right.$$
$$\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+\right.\right.$$
$$\left.n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\left(\frac{5}{2}\cos[e+fx]\left(-15-9n+(9+8n)\cos[e+fx]+n\cos[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\sec\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\cos[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\sec\left[\frac{1}{2}(e+fx)\right]^4\tan\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\,n\left(\sec\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\cos\left[\frac{1}{2}(e+fx)\right]^2\sec[e+fx]\right)^{-\frac{3}{2}+n}\tan\left[\frac{1}{2}(e+fx)\right]^2\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\sec\left[\frac{1}{2}(e+fx)\right]^2\tan\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\left.-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\tan\left[\frac{1}{2}(e+fx)\right]^2+2\tan\left[\frac{1}{2}(e+fx)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\tan\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\sec\left[\frac{1}{2}(e+fx)\right]^4\tan\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\cos[e+fx]\left(-5-2n+2(1+n)\cos[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\sec\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\tan\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\tan\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\cos[e+fx]\left(-15-9n+(9+8n)\cos[e+fx]+n\cos[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\sec\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\cos[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\sec\left[\frac{1}{2}(e+fx)\right]^4\tan\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\left(-\frac{3}{2}+n\right)\left(\sec\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\cos\left[\frac{1}{2}(e+fx)\right]^2\sec[e+fx]\right)^{-\frac{5}{2}+n}\tan\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\sec\left[\frac{1}{2}(e+fx)\right]^2\tan\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.-2\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\tan\left[\frac{1}{2}(e+fx)\right]^2+2\tan\left[\frac{1}{2}(e+fx)\right]^4\right)\right)$$
$$\left(-\cos\left[\frac{1}{2}(e+fx)\right]\sec[e+fx]\sin\left[\frac{1}{2}(e+fx)\right]+\right.$$

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

$$\Big(\Big(\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\ \Big(8\ \text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2$$

$$\Big(7\ \text{Cos}[e+f x]\ \left(-5-2 n+2\left(1+n\right)\text{Cos}[e+f x]\right)\ \text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+$$

$$n,\ \frac{7}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2+$$

$$8\left(5+2 n\right)\ \text{Hypergeometric2F1}\left[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big)+7\ \text{Gamma}\left[\frac{3}{2}+n\right]\ \left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)$$

$$\Big(\frac{5}{2}\ \text{Cos}[e+f x]\ \left(-15-9 n+\left(9+8 n\right)\text{Cos}[e+f x]+n\ \text{Cos}\left[2\left(e+f x\right)\right]\right)$$

$$\text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^6+2\left(3+2 n\right)\ \left(5+\text{Cos}[e+f x]\right)\ \text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big)\Big)\Big)+$$

$$\Big(14\left(\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^n \left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Sec}[e+f x]\right)^{-\frac{3}{2}+n} \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]$$

$$\Big(8\ \text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^4 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+8\ \text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^3+$$

$$5\ \text{Gamma}\left[\frac{3}{2}+n\right]\ \text{Hypergeometric2F1}\left[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

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

$$\frac{32}{7}\left(\frac{5}{2}+n\right)\ \text{Gamma}\left[\frac{5}{2}+n\right]\ \text{Hypergeometric2F1}\Big[3,\ \frac{7}{2}+n,\ \frac{9}{2},$$

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

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

$$2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}[e+f x]\Big)+2\left(\frac{3}{2}+n\right)\ \text{Gamma}\left[\frac{3}{2}+n\right]$$

$$\text{Hypergeometric2F1}\left[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\ \text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

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

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

$$\Bigg(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\Bigg(7\,\mathrm{Cos}[e+fx]\,\left(-5-2n+2(1+n)\,\mathrm{Cos}[e+fx]\right)\mathrm{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$

$$n,\frac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$

$$8\,(5+2n)\,\mathrm{Hypergeometric2F1}\Big[3,\frac{7}{2}+n,\frac{9}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$

$$\Bigg(\frac{5}{2}\,\mathrm{Cos}[e+fx]\,\left(-15-9n+(9+8n)\,\mathrm{Cos}[e+fx]+n\,\mathrm{Cos}[2(e+fx)]\right)$$

$$\mathrm{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2\,(3+2n)\,\left(5+\mathrm{Cos}[e+fx]\right)\mathrm{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$

$$\frac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(14\left(\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\Bigg(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,\frac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\mathrm{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},$$

$$-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]\left(-3+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\Bigg)$$

$$\Bigg(8\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^6\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\Bigg(7\,\mathrm{Cos}[e+fx]\,\left(-5-2n+2(1+n)\,\mathrm{Cos}[e+fx]\right)\mathrm{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$

$$n,\frac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$

$$8\,(5+2n)\,\mathrm{Hypergeometric2F1}\Big[3,\frac{7}{2}+n,\frac{9}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+16\,\mathrm{Gamma}\left[\frac{5}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^4\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^3$$

$$\Bigg(7\,\mathrm{Cos}[e+fx]\,\left(-5-2n+2(1+n)\,\mathrm{Cos}[e+fx]\right)\mathrm{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$

$$n,\frac{7}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$

$$8\,(5+2n)\,\mathrm{Hypergeometric2F1}\Big[3,\frac{7}{2}+n,\frac{9}{2},-2\,\mathrm{Sec}[e+fx]\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]^2\Big]$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+7\,\mathrm{Gamma}\left[\frac{3}{2}+n\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(\frac{5}{2}\operatorname{Cos}[e+f x]\left(-15-9 n+(9+8 n)\operatorname{Cos}[e+f x]+n\operatorname{Cos}[2(e+f x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^6+2(3+2 n)(5+\operatorname{Cos}[e+f x])\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.$$
$$\left.\left.n,\frac{7}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$
$$8\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-14(1+n)\operatorname{Cos}[e+f x]\right.$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Sin}[e+f x]-7\left(-5-2 n+2(1+n)\operatorname{Cos}[e+f x]\right)$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Sin}[e+f x]+7\operatorname{Cos}[e+f x]\left(-5-2 n+2(1+n)\operatorname{Cos}[e+f x]\right)$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]+8(5+2 n)\text{Hypergeometric2F1}\left[3,\frac{7}{2}+\right.$$
$$\left.n,\frac{9}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$4\left(\frac{5}{2}+n\right)\operatorname{Cos}[e+f x]\left(-5-2 n+2(1+n)\operatorname{Cos}[e+f x]\right)\text{Hypergeometric2F1}\left[3,\frac{7}{2}+\right.$$
$$\left.n,\frac{9}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(-2\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right.$$
$$\left.\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Tan}[e+f x]\right)+$$
$$\frac{16}{3}\left(\frac{7}{2}+n\right)(5+2 n)\text{Hypergeometric2F1}\left[4,\frac{9}{2}+n,\frac{11}{2},-2\operatorname{Sec}[e+f x]\right.$$
$$\left.\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-2\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\operatorname{Sec}[e+f x]\right.$$
$$\left.\left.\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\operatorname{Tan}[e+f x]\right)\right)+$$
$$7\operatorname{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(-\frac{5}{2}\left(-15-9 n+(9+8 n)\operatorname{Cos}[e+f x]+\right.\right.$$
$$\left.n\operatorname{Cos}[2(e+f x)]\right)\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\right.$$
$$\left.\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^6\operatorname{Sin}[e+f x]+$$
$$\frac{5}{2}\operatorname{Cos}[e+f x]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\operatorname{Sec}[e+f x]\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^6\left(-(9+8 n)\operatorname{Sin}[e+f x]-2 n\operatorname{Sin}[2(e+f x)]\right)+$$

$$\frac{15}{2}\operatorname{Cos}[e+fx]\left(-15-9n+(9+8n)\operatorname{Cos}[e+fx]+n\operatorname{Cos}[2(e+fx)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]+2(3+2n)(5+\operatorname{Cos}[e+fx])$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]-2(3+2n)\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\right.$$
$$\left.\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Sin}[e+fx]\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$4(3+2n)(5+\operatorname{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\right.$$
$$\left.\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^3+$$
$$\left(\frac{3}{2}+n\right)\operatorname{Cos}[e+fx]\left(-15-9n+(9+8n)\operatorname{Cos}[e+fx]+n\operatorname{Cos}[2(e+fx)]\right)$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6\left(-2\operatorname{Cos}\left[\frac{1}{2}(e+fx)\right]\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]-2\operatorname{Sec}[\right.$$
$$\left.e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Tan}[e+fx]\right)+\frac{8}{7}\left(\frac{5}{2}+n\right)(3+2n)(5+\operatorname{Cos}[e+fx])$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-2\operatorname{Cos}\left[\frac{1}{2}(e+fx)\right]\operatorname{Sec}[e+fx]\right.$$
$$\left.\left.\left.\left.\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Tan}[e+fx]\right)\right)\right)\right)\Big/$$
$$\left(\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\operatorname{Cos}[e+fx]\left(-5-2n+2(1+n)\operatorname{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.\right.$$
$$\left.\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2+8(5+2n)$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\operatorname{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\operatorname{Cos}[e+fx]\left(-15-9n+(9+8n)\operatorname{Cos}[e+fx]+n\operatorname{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\operatorname{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$

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

Problem 309: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[e+f x]^n\sqrt{a+a\,\mathrm{Sec}[e+f x]}\,dx$$

Optimal (type 5, 48 leaves, 2 steps):

$$\frac{2\,a\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1-\mathrm{Sec}[e+f x]\right]\mathrm{Tan}[e+f x]}{f\sqrt{a+a\,\mathrm{Sec}[e+f x]}}$$

Result (type 5, 213 leaves):

$$-\frac{1}{f\,n\,(1+n)}\,i\,2^{-\frac{1}{2}+n}\,e^{\frac{1}{2}i(e+f x)}\left(1+e^{2i(e+f x)}\right)^{-\frac{1}{2}+n}\left(e^{-i(e+f x)}\left(1+e^{2i(e+f x)}\right)\right)^{\frac{1}{2}-n}$$
$$\mathrm{Cos}[e+f x]^{\frac{1}{2}+n}\left((1+n)\,\mathrm{Hypergeometric2F1}\left[\frac{n}{2},\frac{1}{2}+n,\frac{2+n}{2},-e^{2i(e+f x)}\right]+\right.$$
$$\left.e^{i(e+f x)}\,n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}+n,\frac{1+n}{2},\frac{3+n}{2},-e^{2i(e+f x)}\right]\right)$$
$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]\mathrm{Sec}[e+f x]^n\sqrt{a\,(1+\mathrm{Sec}[e+f x])}$$

Problem 310: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Sec}[e+f x]^n}{\sqrt{a+a\,\mathrm{Sec}[e+f x]}}\,dx$$

Optimal (type 6, 61 leaves, 4 steps):

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

Result (type 6, 2964 leaves):

$$\left(3\sqrt{2}\,\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\mathrm{Sec}[e+f x]^{-\frac{1}{2}+\frac{1}{2}(-1+2n)}\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^n$$
$$\left.\sqrt{1+\mathrm{Sec}[e+f x]}\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Big/\left(f\sqrt{a\,(1+\mathrm{Sec}[e+f x])}\right.$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\right.$$

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

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\,\text{Cos}\left[e+f\,x\right]$$

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

$$\Bigg(\sqrt{2}\,\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\Bigg(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\Bigg)\Bigg)-\Bigg(3\,\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\Bigg(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\Bigg)+\Bigg(3\,\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\Bigg(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Bigg)$$

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

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

$$\Bigg(-\frac{1}{3}\,\left(1-n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\frac{1}{3}\,\left(-\frac{1}{2}+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big)\Big) \Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big) - \Big(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Cos}[e+fx]\,\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^n \sqrt{1+\text{Sec}[e+fx]}\;\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big)\Big/$$
$$\Big(\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] +$$
$$3\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big) +$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2 \Big(2(-1+n)\,\Big(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}+n, 3-n, \frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{3}{5}$$
$$\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+n, 2-n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big) + (-1+2n)\,\Big(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},\right.$$
$$\left.\frac{1}{2}+n, 2-n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}+n, 1-n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

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

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

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

Problem 311: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[e+f x]^n}{(a+a\,\text{Sec}[e+f x])^{3/2}}\,dx$$

Optimal (type 6, 67 leaves, 4 steps):

$$\left(\text{AppellF1}\left[\frac{1}{2},1-n,2,\frac{3}{2},1-\text{Sec}[e+f x],\frac{1}{2}(1-\text{Sec}[e+f x])\right]\text{Tan}[e+f x]\right)\Big/$$

$$\left(2\,a\,f\,\sqrt{a+a\,\text{Sec}[e+f x]}\right)$$

Result (type 6, 2992 leaves):

$$\Big(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n \text{Sec}[e+fx]^{\frac{1}{2}+\frac{1}{2}(-3+2n)} \left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2 \text{Sec}[e+fx]\right)^{\frac{3}{2}+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right] \left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg) \Big/ \Bigg(f\left(a\left(1+\text{Sec}[e+fx]\right)\right)^{3/2}$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg(\Bigg(\Bigg(12\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}$$
$$\text{Sin}[e+fx]\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(6\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(6\,\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,\right.\right.$$
$$2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2$$
$$\left(\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+3\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$

$$\left(2(-1+n)\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{3}{2}+n,3-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+(-3+2n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\left(6\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{1}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

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

Problem 312: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(-\text{Sec}[e+f x])^n (a+a \text{Sec}[e+f x])^{3/2} \, dx$$

Optimal (type 5, 130 leaves, 5 steps):

$$\left(2 a^2 (1+4 n) \text{Hypergeometric2F1}\left[\frac{1}{2}, 1-n, \frac{3}{2}, 1-\text{Sec}[e+f x]\right] (-\text{Sec}[e+f x])^n \text{Sec}[e+f x]^{1-n} \text{Sin}[e+f x]\right) \Big/ \left(f (1+2 n) \sqrt{a+a \text{Sec}[e+f x]}\right)+\frac{2 a^2 (-\text{Sec}[e+f x])^n \text{Tan}[e+f x]}{f (1+2 n) \sqrt{a+a \text{Sec}[e+f x]}}$$

Result (type 5, 6383 leaves):

$$\left(14 \text{Sec}\left[\frac{1}{2}(e+f x)\right]^3 \left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n (-\text{Sec}[e+f x])^n \text{Sec}[e+f x]^{-\frac{3}{2}-n} \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{-\frac{3}{2}+n} (a (1+\text{Sec}[e+f x]))^{3/2} \left(\text{Cos}\left[\frac{3}{2}(e+f x)\right] \left(\frac{1}{8} \text{Sec}[e+f x]^{-\frac{3}{2}+n}+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{4} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]-\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2+\text{Cos}[e+f x] \left(\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]\right)+\text{Sec}[e+f x] \left(\frac{1}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]-\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2-\frac{1}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^3\right)\right)-\frac{1}{8} i \text{Sec}[e+f x]^{-\frac{3}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]-\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{4} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2 \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\text{Cos}[e+f x] \left(-\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)+\text{Sec}[e+f x] \left(-\frac{1}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2 \text{Sin}\left[\frac{3}{2}(e+f x)\right]-\frac{1}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^3 \text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\left.\left.\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\right)\right)\right)\Big/$$
$$\left(f\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\right.$$
$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\left(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+$$
$$2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\right.$$
$$\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)$$
$$\left(-\left(\left(14\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{1+n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\left.\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\,\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\right.\right.$$
$$\left.\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+8\,(5+2\,n)$$
$$\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},$$
$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\Big)\Big)\Big)+$$
$$\Big(7\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{1+n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}$$
$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},$$
$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\Big)\Big)\Big/$$
$$\Big(\Big(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\,\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$
$$\Big(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+$$
$$n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$
$$\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,$$
$$\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\Big)\Big)+$$
$$\Big(14\,n\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$
$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},$$
$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\Big)\Big)\Big/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+fx]\left(-5-2n+2(1+n)\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)\left(5+\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\left(-\frac{3}{2}+n\right)\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{5}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)$$
$$\left(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+fx]\left(-5-2n+2(1+n)\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)\left(5+\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$

$$\frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(14\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3+$$

$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

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

$$\frac{32}{7}\,\left(\frac{5}{2}+n\right)\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[3,\ \frac{7}{2}+n,\ \frac{9}{2},$$

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

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

$$2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}[e+f\,x]\Bigg)+2\,\left(\frac{3}{2}+n\right)\,\text{Gamma}\left[\frac{3}{2}+n\right]$$

$$\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

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

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

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+$$

$$n,\ \frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\Big[3,\ \frac{7}{2}+n,\ \frac{9}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\Bigg(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\Big[1,\ \frac{3}{2}+n,\ \frac{5}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\ \frac{5}{2}+n,$$

$$\frac{7}{2},\ -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)\Bigg)\Bigg)-$$

$$\left(14\left(\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\operatorname{Cos}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$

$$\left(8\,\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\operatorname{Gamma}\left[\frac{3}{2}+n\right]\operatorname{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$

$$\left.\left.-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)$$

$$\left(8\,\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$

$$\left(7\operatorname{Cos}[e+fx]\left(-5-2n+2(1+n)\operatorname{Cos}[e+fx]\right)\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$

$$\left.n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$

$$8(5+2n)\operatorname{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+16\,\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^3$$

$$\left(7\operatorname{Cos}[e+fx]\left(-5-2n+2(1+n)\operatorname{Cos}[e+fx]\right)\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$

$$\left.n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$

$$8(5+2n)\operatorname{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\operatorname{Gamma}\left[\frac{3}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(\frac{5}{2}\operatorname{Cos}[e+fx]\left(-15-9n+(9+8n)\operatorname{Cos}[e+fx]+n\operatorname{Cos}[2(e+fx)]\right)\right.$$

$$\operatorname{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)\left(5+\operatorname{Cos}[e+fx]\right)\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.$$

$$\left.\left.n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$

$$8\,\operatorname{Gamma}\left[\frac{5}{2}+n\right]\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^4\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-14(1+n)\operatorname{Cos}[e+fx]\right.$$

$$\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Sin}[e+fx]-7\left(-5-2n+2(1+n)\operatorname{Cos}[e+fx]\right)$$

$$\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Sin}[e+fx]+7\operatorname{Cos}[e+fx]\left(-5-2n+2(1+n)\operatorname{Cos}[e+fx]\right)$$

$$\operatorname{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\operatorname{Sec}[e+fx]\operatorname{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right] + 8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right] +$$

$$4\left(\frac{5}{2}+n\right)\text{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \left(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right] \text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right] - 2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \text{Tan}[e+f\,x]\right) +$$

$$\frac{16}{3}\left(\frac{7}{2}+n\right)(5+2\,n)\,\text{Hypergeometric2F1}\left[4,\frac{9}{2}+n,\frac{11}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \left(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right] \text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right] - 2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2 \text{Tan}[e+f\,x]\right)\Bigg) +$$

$$7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg(-\frac{5}{2}\,(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)])\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6 \text{Sin}[e+f\,x] +$$

$$\frac{5}{2}\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6 (-(9+8\,n)\,\text{Sin}[e+f\,x]-2\,n\,\text{Sin}[2\,(e+f\,x)]) +$$

$$\frac{15}{2}\,\text{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)])\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6 \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right] + 2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6 \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right] - 2\,(3+2\,n)\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4 \text{Sin}[e+f\,x]\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2 +$$

$$4\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right] \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4 \text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3 +$$

$$\left(\frac{3}{2}+n\right)\text{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6\left(-2\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}[e+fx]\right)+\frac{8}{7}\left(\frac{5}{2}+n\right)(3+2n)(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-2\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}[e+fx]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(7\,\text{Cos}[e+fx]\,(-5-2n+2(1+n)\,\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(\frac{5}{2}\text{Cos}[e+fx]\,(-15-9n+(9+8n)\,\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)])\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\right)$$

Problem 313: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(-\text{Sec}[e+fx])^n\sqrt{a+a\,\text{Sec}[e+fx]}\,dx$$

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

$$\left(2\,a\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1-\text{Sec}[e+fx]\right](-\text{Sec}[e+fx])^n\,\text{Sec}[e+fx]^{1-n}\,\text{Sin}[e+fx]\right)\Big/\left(f\sqrt{a+a\,\text{Sec}[e+fx]}\right)$$

Result (type 5, 215 leaves):

$$-\frac{1}{f\,n\,(1+n)}\,i\,2^{-\frac{1}{2}+n}\,e^{\frac{1}{2}i\,(e+f\,x)}\,\left(1+e^{2\,i\,(e+f\,x)}\right)^{-\frac{1}{2}+n}\,\left(e^{-i\,(e+f\,x)}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\right)^{\frac{1}{2}-n}$$
$$\text{Cos}[e+f\,x]^{\frac{1}{2}+n}\,\left((1+n)\,\text{Hypergeometric2F1}\left[\frac{n}{2},\frac{1}{2}+n,\frac{2+n}{2},-e^{2\,i\,(e+f\,x)}\right]+\right.$$
$$\left.e^{i\,(e+f\,x)}\,n\,\text{Hypergeometric2F1}\left[\frac{1}{2}+n,\frac{1+n}{2},\frac{3+n}{2},-e^{2\,i\,(e+f\,x)}\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]\,(-\text{Sec}[e+f\,x])^n\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}$$

Problem 314: Result more than twice size of optimal antiderivative.

$$\int\frac{(-\text{Sec}[e+f\,x])^n}{\sqrt{a+a\,\text{Sec}[e+f\,x]}}\,dx$$

Optimal (type 6, 75 leaves, 3 steps):

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

Result (type 6, 2977 leaves):

$$\left(3\,\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\right.$$
$$(-\text{Sec}[e+f\,x])^n\,\text{Sec}[e+f\,x]^{-\frac{1}{2}-n+\frac{1}{2}\,(-1+2\,n)}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^n$$
$$\left.\sqrt{1+\text{Sec}[e+f\,x]}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/\left(f\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.$$
$$(-1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Cos}[e+f\,x]\right.\right.$$
$$\left.\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{1+n}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^n\,\sqrt{1+\text{Sec}[e+f\,x]}\right)\Big/$$
$$\left(\sqrt{2}\,\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.$$
$$\left.(-1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg) - \Bigg(3\sqrt{2}\ \mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^n \sqrt{1+\mathrm{Sec}[e+f x]}\ \mathrm{Sin}[e+f x]\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg/$$

$$\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \Bigg(2(-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (-1+2n)\,\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) + \Bigg(3\sqrt{2}\ n\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Cos}[e+f x] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^n \sqrt{1+\mathrm{Sec}[e+f x]}\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \Bigg(2(-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (-1+2n)\,\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) + \Bigg(3\sqrt{2}\ \mathrm{Cos}[e+f x] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

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

$$\Bigg(-\frac{1}{3}(1-n)\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3}\left(-\frac{1}{2}+n\right) \mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \Bigg(2(-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+n, 2-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (-1+2n)\,\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+n, 1-n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) - \Bigg(3\sqrt{2}\ \mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+n, 1-n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Cos}[e+f x] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$

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

$$\left(\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$3\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(2\,(-1+n)\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,3-n,\frac{7}{2},\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$
$$\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+(-1+2n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$
$$\left.\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^n$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]\text{Tan}[e+f x]\right)\Big/\left(\sqrt{2}\sqrt{1+\text{Sec}[e+f x]}\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\Big(3\sqrt{2}\ n\ \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+n}$$
$$\sqrt{1+\text{Sec}[e+f x]}\ \text{Tan}\left[\frac{1}{2}(e+f x)\right]\Big(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\ \text{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\ \text{Tan}[e+f x]\Big)\Big)\Big/$$
$$\Big(3\ \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$\Big(2(-1+n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$(-1+2n)\ \text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)$$

Problem 315: Result more than twice size of optimal antiderivative.

$$\int\frac{(-\text{Sec}[e+f x])^n}{(a+a\,\text{Sec}[e+f x])^{3/2}}\,dx$$

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

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

Result (type 6, 3005 leaves):

$$\Big(6\ \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n$$
$$(-\text{Sec}[e+f x])^n\,\text{Sec}[e+f x]^{\frac{1}{2}-n+\frac{1}{2}(-3+2n)}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Big)\Big/\Big(f\,(a\,(1+\text{Sec}[e+f x]))^{3/2}$$
$$\Big(3\ \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$\Big(2(-1+n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$(-3+2n)\ \text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big(\Big(12\ \text{AppellF1}\Big[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\Bigg(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+\Bigg(6\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(6\,\text{Cos}[e+f x]\,\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\,\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,\right.\right.$$

$$2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

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

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

$$\left(\left(2\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$

$$\left.(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+3\,\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\right.\right.$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\left(2\,(-1+n)\,\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},-\frac{3}{2}+n,3-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(-\frac{3}{2}+n\right)$$

$$\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$
\begin{aligned}
&\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg) + (-3+2 n)\,\Bigg(-\frac{3}{5}(1-n)\,\text{AppellF1}\Big[\frac{5}{2},\\
&-\frac{1}{2}+n,\,2-n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\\
&\text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{3}{5}\left(-\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\\
&-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/\\
&\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},\,-\frac{3}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big] +\\
&\quad\Bigg(2(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},\,-\frac{3}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big] +\\
&\quad\quad(-3+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\\
&\quad\quad\quad-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2 +\\
&\Bigg(6\left(\frac{3}{2}+n\right)\text{AppellF1}\Big[\frac{1}{2},\,-\frac{3}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\\
&\quad\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{\frac{1}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\\
&\quad\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right] +\\
&\quad\quad\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\,\text{Tan}[e+f x]\Bigg)\Bigg)\Bigg/\\
&\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},\,-\frac{3}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big] +\\
&\quad\Bigg(2(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},\,-\frac{3}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big] +\\
&\quad\quad(-3+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\\
&\quad\quad\quad-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)
\end{aligned}
$$

Problem 316: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 130 leaves, 5 steps):

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

Result (type 5, 6383 leaves):

$$\left(14 \text{Sec}\left[\frac{1}{2}(e+f x)\right]^3 \left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n \text{Sec}[e+f x]^{-\frac{3}{2}-n} (d \text{Sec}[e+f x])^n \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{-\frac{3}{2}+n} (a (1+\text{Sec}[e+f x]))^{3/2} \left(\text{Cos}\left[\frac{3}{2}(e+f x)\right] \left(\frac{1}{8} \text{Sec}[e+f x]^{-\frac{3}{2}+n}+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{4} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]-\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2+\text{Cos}[e+f x] \left(\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]\right)+\text{Sec}[e+f x] \left(\frac{1}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n}+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]-\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2-\frac{1}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^3\right)\right)-\frac{1}{8} i \text{Sec}[e+f x]^{-\frac{3}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]-\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{4} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2 \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\text{Cos}[e+f x] \left(-\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)+\text{Sec}[e+f x] \left(-\frac{1}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x] \text{Sin}\left[\frac{3}{2}(e+f x)\right]+\frac{3}{8} i \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^2 \text{Sin}\left[\frac{3}{2}(e+f x)\right]-\frac{1}{8} \text{Sec}[e+f x]^{\frac{1}{2}+n} \text{Sin}[e+f x]^3 \text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right] \left(8 \text{Gamma}\left[\frac{5}{2}+n\right] \text{Hypergeometric2F1}\left[2, \frac{5}{2}+n, \frac{7}{2}, -2 \text{Sec}[e+f x] \text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+5 \text{Gamma}\left[\frac{3}{2}+n\right] \text{Hypergeometric2F1}\left[1, \frac{3}{2}+n, \frac{5}{2}, -2 \text{Sec}[e+f x] \text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(-3+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^4\right)\right)\right) \Big/$$

$$\left(f \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \left(8 \text{Gamma}\left[\frac{5}{2}+n\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^4 \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right.\right.$$

$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\right.$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^6+$$
$$2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)$$
$$\left(-\left(\left(14\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right.\right.\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$
$$\left.\left.\left(-3+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^2\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.\right.$$
$$\left.\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2+8\,(5+2\,n)$$
$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\left.\left.-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)\right)\right)+$$

$$\left(7\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\left.-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+fx]\left(-5-2n+2(1+n)\,\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\,\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)\left(5+\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\,n\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\left.-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+fx]\left(-5-2n+2(1+n)\,\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$

$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\left(-\frac{3}{2}+n\right)\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{5}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-3+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2+2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^4\right)\right)$$
$$\left(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$
$$\left(7\,\text{Cos}[e+fx]\left(-5-2n+2(1+n)\text{Cos}[e+fx]\right)\text{Hypergeometric2F1}\left[2,\frac{5}{2}+\right.\right.$$
$$\left.n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2+$$
$$8(5+2n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$
$$\left(\frac{5}{2}\text{Cos}[e+fx]\left(-15-9n+(9+8n)\text{Cos}[e+fx]+n\,\text{Cos}[2(e+fx)]\right)\right.$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^6+2(3+2n)(5+\text{Cos}[e+fx])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$
$$\left.\left.\left.\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)+$$
$$\left(14\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^4\text{Tan}\left[\frac{1}{2}(e+fx)\right]+8\,\text{Gamma}\left[\frac{5}{2}+n\right]\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\right.$$

$$\frac{7}{2}, -2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3+$$
$$5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+4\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3\right)+$$
$$\frac{32}{7}\,\left(\frac{5}{2}+n\right)\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\Big[3,\frac{7}{2}+n,\frac{9}{2},$$
$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Big(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-$$
$$2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}[e+f\,x]\Big)+2\,\left(\frac{3}{2}+n\right)\,\text{Gamma}\left[\frac{3}{2}+n\right]$$
$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\,\Big(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sec}[e+f\,x]$$
$$\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}[e+f\,x]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$
$$\Big(7\,\text{Cos}[e+f\,x]\,(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+$$
$$n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$
$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$
$$\Big(\frac{5}{2}\,\text{Cos}[e+f\,x]\,(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)])$$
$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,(5+\text{Cos}[e+f\,x])\,\text{Hypergeometric2F1}\Big[2,\frac{5}{2}+n,$$
$$\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)\Big)\Big)-$$
$$\Big(14\,\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^n\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{-\frac{3}{2}+n}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$
$$\Big(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+5\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Hypergeometric2F1}\Big[1,\frac{3}{2}+n,\frac{5}{2},$$
$$-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\left(-3+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^4\right)\Big)$$

$$\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+16\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^3$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\left[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,\left(5+\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Bigg(-14\,(1+n)\,\text{Cos}[e+f\,x]$$

$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]-7\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$

$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]+7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)$$

$$\text{Hypergeometric2F1}\left[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+8\,(5+2\,n)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$

$$4\,\left(\frac{5}{2}+n\right)\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\left[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Bigg(-2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]$$

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

$$\frac{16}{3}\left(\frac{7}{2}+n\right)(5+2 n)\,\text{Hypergeometric2F1}\left[4,\frac{9}{2}+n,\frac{11}{2},-2\,\text{Sec}[e+f x]\right.$$

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

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

$$7\,\text{Gamma}\left[\frac{3}{2}+n\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(-\frac{5}{2}\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+\right.\right.$$

$$\left.n\,\text{Cos}[2(e+f x)]\right)\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\right.$$

$$\left.\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Sin}[e+f x]+$$

$$\frac{5}{2}\text{Cos}[e+f x]\,\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\left(-(9+8 n)\,\text{Sin}[e+f x]-2 n\,\text{Sin}[2(e+f x)]\right)+$$

$$\frac{15}{2}\text{Cos}[e+f x]\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\right)$$

$$\text{Hypergeometric2F1}\left[1,\frac{3}{2}+n,\frac{5}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\text{Tan}\left[\frac{1}{2}(e+f x)\right]+2(3+2 n)(5+\text{Cos}[e+f x])$$

$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\left.\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Sin}[e+f x]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2+$$

$$4(3+2 n)(5+\text{Cos}[e+f x])\,\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\right.$$

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

$$\left(\frac{3}{2}+n\right)\text{Cos}[e+f x]\left(-15-9 n+(9+8 n)\,\text{Cos}[e+f x]+n\,\text{Cos}[2(e+f x)]\right)$$

$$\text{Hypergeometric2F1}\left[2,\frac{5}{2}+n,\frac{7}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6\left(-2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-2\,\text{Sec}[\right.$$

$$\left.e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}[e+f x]\right)+\frac{8}{7}\left(\frac{5}{2}+n\right)(3+2 n)(5+\text{Cos}[e+f x])$$

$$\text{Hypergeometric2F1}\left[3,\frac{7}{2}+n,\frac{9}{2},-2\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

$$\Bigg(\Bigg(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)\,\Bigg(8\,\text{Gamma}\left[\frac{5}{2}+n\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\Bigg(7\,\text{Cos}[e+f\,x]\,\left(-5-2\,n+2\,(1+n)\,\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+8\,(5+2\,n)$$

$$\text{Hypergeometric2F1}\Big[3,\,\frac{7}{2}+n,\,\frac{9}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+7\,\text{Gamma}\left[\frac{3}{2}+n\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)$$

$$\Bigg(\frac{5}{2}\,\text{Cos}[e+f\,x]\,\left(-15-9\,n+(9+8\,n)\,\text{Cos}[e+f\,x]+n\,\text{Cos}[2\,(e+f\,x)]\right)$$

$$\text{Hypergeometric2F1}\Big[1,\,\frac{3}{2}+n,\,\frac{5}{2},\,-2\,\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6+2\,(3+2\,n)\,\left(5+\text{Cos}[e+f\,x]\right)\,\text{Hypergeometric2F1}\Big[2,\,\frac{5}{2}+n,\,\frac{7}{2},$$

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

Problem 317: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\left(2\,a\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1-n,\,\frac{3}{2},\,1-\text{Sec}[e+f\,x]\right]\,\text{Sec}[e+f\,x]^{1-n}\,(d\,\text{Sec}[e+f\,x])^n\,\text{Sin}[e+f\,x]\right)\Big/\left(f\,\sqrt{a+a\,\text{Sec}[e+f\,x]}\right)$$

Result (type 5, 215 leaves):

$$-\frac{1}{f\,n\,(1+n)}\,i\,2^{-\frac{1}{2}+n}\,e^{\frac{1}{2}\,i\,(e+f\,x)}\,\left(1+e^{2\,i\,(e+f\,x)}\right)^{-\frac{1}{2}+n}\,\left(e^{-i\,(e+f\,x)}\,\left(1+e^{2\,i\,(e+f\,x)}\right)\right)^{\frac{1}{2}-n}$$

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

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]\,(d\,\text{Sec}[e+f\,x])^n\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}$$

Problem 318: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 75 leaves, 3 steps):

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

Result (type 6, 2977 leaves):

$$\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n\right.$$
$$\text{Sec}[e+f\,x]^{-\frac{1}{2}-n+\frac{1}{2}(-1+2n)}(d\,\text{Sec}[e+f\,x])^n\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n$$
$$\left.\sqrt{1+\text{Sec}[e+f\,x]}\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/\left(f\sqrt{a\,(1+\text{Sec}[e+f\,x])}\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)$$
$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Cos}[e+f\,x]\right.\right.$$
$$\left.\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\sqrt{1+\text{Sec}[e+f\,x]}\right)\Big/$$
$$\left(\sqrt{2}\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$\left.(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)-\left(3\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^n\sqrt{1+\text{Sec}[e+f\,x]}\,\text{Sin}[e+f\,x]\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\Big)+\Big(3\,\sqrt{2}\,n\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\right.$$

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

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\Big(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Big)$$

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

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

$$\Big(-\frac{1}{3}\,\left(1-n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\frac{1}{3}\,\left(-\frac{1}{2}+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\right.$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\Big(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\Big)-\Big(3\,\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\right.$$

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

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

$$\Big(\Big(2\,\left(-1+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]+$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]\Big)$$

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

$$3\,\Big(-\frac{1}{3}\,\left(1-n\right)\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\frac{1}{3}\,\left(-\frac{1}{2}+n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+n,\,1-n,\,\frac{5}{2},\right.$$

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

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big(2(-1+n)\Big(-\frac{3}{5}(2-n)\,\text{AppellF1}\Big[\frac{5}{2},-\frac{1}{2}+n,3-n,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$

$$\left(-\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Big)+(-1+2n)\Big(-\frac{3}{5}(1-n)\,\text{AppellF1}\Big[\frac{5}{2},$$

$$\frac{1}{2}+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$

$$(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]$$

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

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$

$$(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

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

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

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)$$

Problem 319: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 6, 3005 leaves):

$$\left(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\right.$$
$$\text{Sec}[e+f x]^{\frac{1}{2}-n+\frac{1}{2}(-3+2n)}(d\,\text{Sec}[e+f x])^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/\left(f\,(a\,(1+\text{Sec}[e+f x]))^{3/2}\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(\left(12\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{1+n}$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)-\Big(6\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+\Big(6\,n\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\Big(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+\Big(6\,\text{Cos}[e+fx]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{\frac{3}{2}+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,\right.$$

$$2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\Big)\ \left(-1+\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)^2\Big)\Big/$$
$$\Big(3\ \mathrm{AppellF1}\left[\frac{1}{2},\ -\frac{3}{2}+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+$$
$$\Big(2\ (-1+n)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{3}{2}+n,\ 2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+$$
$$(-3+2\,n)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\Big)$$
$$\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big)-\Big(6\ \mathrm{AppellF1}\left[\frac{1}{2},\ -\frac{3}{2}+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\right.$$
$$\left.-\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\ \mathrm{Cos}[e+f\,x]\ \left(\mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)^n$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Sec}[e+f\,x]\right)^{\frac{3}{2}+n}\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\ \left(-1+\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)^2$$
$$\Big(\Big(2\ (-1+n)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{3}{2}+n,\ 2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+$$
$$(-3+2\,n)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\Big)$$
$$\mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+3\ \Big(-\frac{1}{3}\ (1-n)\ \mathrm{AppellF1}\Big[\frac{3}{2},\ -\frac{3}{2}+n,\ 2-n,$$
$$\frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+$$
$$\frac{1}{3}\left(-\frac{3}{2}+n\right)\ \mathrm{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\Big)+\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2$$
$$\Big(2\ (-1+n)\ \Big(-\frac{3}{5}\ (2-n)\ \mathrm{AppellF1}\Big[\frac{5}{2},\ -\frac{3}{2}+n,\ 3-n,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+\frac{3}{5}\left(-\frac{3}{2}+n\right)$$
$$\mathrm{AppellF1}\left[\frac{5}{2},\ -\frac{1}{2}+n,\ 2-n,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]$$
$$\mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\Big)+(-3+2\,n)\ \Big(-\frac{3}{5}\ (1-n)\ \mathrm{AppellF1}\Big[\frac{5}{2},$$
$$-\frac{1}{2}+n,\ 2-n,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2$$
$$\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+\frac{3}{5}\left(-\frac{1}{2}+n\right)\ \mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{1}{2}+n,\ 1-n,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \mathrm{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\left(6\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}[e+f x]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{1}{2}+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2}+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(2(-1+n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{3}{2}+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)$$

Problem 320: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(-\text{Sec}[e+f x])^n\,(a-a\,\text{Sec}[e+f x])^{5/2}\,dx$$

Optimal (type 5, 178 leaves, 4 steps):

$$\left(2a^3\left(3+24n+16n^2\right)\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1+\text{Sec}[e+f x]\right]\text{Tan}[e+f x]\right)\Big/\left(f(1+2n)(3+2n)\sqrt{a-a\,\text{Sec}[e+f x]}\right)+\frac{2a^3(7+4n)(-\text{Sec}[e+f x])^n\,\text{Tan}[e+f x]}{f(1+2n)(3+2n)\sqrt{a-a\,\text{Sec}[e+f x]}}+\frac{2a^2(-\text{Sec}[e+f x])^n\sqrt{a-a\,\text{Sec}[e+f x]}\,\text{Tan}[e+f x]}{f(3+2n)}$$

Result (type 5, 455 leaves):

$$\frac{1}{f} 2^{-\frac{5}{2}+n} e^{\frac{1}{2} i (e+f (1-2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{-\frac{1}{2}+n}$$
$$\text{Csc}\left[\frac{1}{2} (e+f x)\right]^5 \left(\frac{e^{i f n x} \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{5}{2}+n, \frac{2+n}{2}, -e^{2 i (e+f x)}\right]}{n} - \frac{5 e^{i (e+f (1+n) x)} \text{Hypergeometric2F1}\left[\frac{1+n}{2}, \frac{5}{2}+n, \frac{3+n}{2}, -e^{2 i (e+f x)}\right]}{1+n} + \frac{10 e^{i (2 e+f (2+n) x)} \text{Hypergeometric2F1}\left[\frac{2+n}{2}, \frac{5}{2}+n, \frac{4+n}{2}, -e^{2 i (e+f x)}\right]}{2+n} - \frac{10 e^{i (3 e+f (3+n) x)} \text{Hypergeometric2F1}\left[\frac{5}{2}+n, \frac{3+n}{2}, \frac{5+n}{2}, -e^{2 i (e+f x)}\right]}{3+n} + \frac{5 e^{i (4 e+f (4+n) x)} \text{Hypergeometric2F1}\left[\frac{5}{2}+n, \frac{4+n}{2}, \frac{6+n}{2}, -e^{2 i (e+f x)}\right]}{4+n} - \frac{e^{i (5 e+f (5+n) x)} \text{Hypergeometric2F1}\left[\frac{5}{2}+n, \frac{5+n}{2}, \frac{7+n}{2}, -e^{2 i (e+f x)}\right]}{5+n}\right)$$
$$(-\text{Sec}[e+f x])^n \text{Sec}[e+f x]^{-\frac{5}{2}-n} (a-a \text{Sec}[e+f x])^{5/2}$$

Problem 321: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (-\text{Sec}[e+f x])^n (a-a \text{Sec}[e+f x])^{3/2} \, dx$$

Optimal (type 5, 108 leaves, 4 steps):

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

Result (type 5, 377 leaves):

$$\frac{1}{f n (1+n) (2+n) (3+n)} 2^{-\frac{3}{2}+n} e^{\frac{1}{2} i (e+f (1-2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{-\frac{1}{2}+n}$$
$$\text{Csc}\left[\frac{1}{2} (e+f x)\right]^3 \left(-e^{i f n x} \left(6+11 n+6 n^2+n^3\right) \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{3}{2}+n, \frac{2+n}{2}, -e^{2 i (e+f x)}\right] + 3 e^{i (e+f (1+n) x)} n \left(6+5 n+n^2\right) \text{Hypergeometric2F1}\left[\frac{1+n}{2}, \frac{3}{2}+n, \frac{3+n}{2}, -e^{2 i (e+f x)}\right] + e^{2 i e} n (1+n) \left(-3 e^{i f (2+n) x} (3+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n, \frac{2+n}{2}, \frac{4+n}{2}, -e^{2 i (e+f x)}\right] + e^{i (e+f (3+n) x)} (2+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n, \frac{3+n}{2}, \frac{5+n}{2}, -e^{2 i (e+f x)}\right]\right)\right)$$
$$(-\text{Sec}[e+f x])^n \text{Sec}[e+f x]^{-\frac{3}{2}-n} (a-a \text{Sec}[e+f x])^{3/2}$$

Problem 322: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (-\text{Sec}[e+f x])^n \sqrt{a-a\,\text{Sec}[e+f x]}\, dx$$

Optimal (type 5, 47 leaves, 2 steps):

$$\frac{2\,a\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1+\text{Sec}[e+f x]\right]\text{Tan}[e+f x]}{f\sqrt{a-a\,\text{Sec}[e+f x]}}$$

Result (type 5, 236 leaves):

$$\frac{1}{f n (1+n)} 2^{-\frac{1}{2}+n} e^{-\frac{1}{2} i (e+f (1+2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{\frac{1}{2}+n}$$
$$\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right] \left(e^{i f n x} (1+n)\,\text{Hypergeometric2F1}\left[\frac{n}{2},\frac{1}{2}+n,\frac{2+n}{2},-e^{2 i (e+f x)}\right]-\right.$$
$$\left. e^{i (e+f (1+n) x)}\, n\,\text{Hypergeometric2F1}\left[\frac{1}{2}+n,\frac{1+n}{2},\frac{3+n}{2},-e^{2 i (e+f x)}\right]\right)$$
$$(-\text{Sec}[e+f x])^n\,\text{Sec}[e+f x]^{-\frac{1}{2}-n}\sqrt{a-a\,\text{Sec}[e+f x]}$$

Problem 323: Unable to integrate problem.

$$\int \frac{(-\text{Sec}[e+f x])^n}{\sqrt{a-a\,\text{Sec}[e+f x]}}\, dx$$

Optimal (type 6, 58 leaves, 4 steps):

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

Result (type 8, 28 leaves):

$$\int \frac{(-\text{Sec}[e+f x])^n}{\sqrt{a-a\,\text{Sec}[e+f x]}}\, dx$$

Problem 324: Unable to integrate problem.

$$\int \frac{(-\text{Sec}[e+f x])^n}{(a-a\,\text{Sec}[e+f x])^{3/2}}\, dx$$

Optimal (type 6, 64 leaves, 4 steps):

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

Result (type 8, 28 leaves):

$$\int \frac{(-\text{Sec}[e+f x])^n}{(a-a\,\text{Sec}[e+f x])^{3/2}}\,dx$$

Problem 325: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^n\,(a-a\,\text{Sec}[e+f x])^{3/2}\,dx$$

Optimal (type 5, 130 leaves, 5 steps):

$$\frac{2 a^2 \text{Sec}[e+f x]^{1+n} \text{Sin}[e+f x]}{f (1+2 n) \sqrt{a-a\,\text{Sec}[e+f x]}}+\left(2 a^2 (1+4 n) \text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1+\text{Sec}[e+f x]\right] (-\text{Sec}[e+f x])^{-n} \text{Sec}[e+f x]^{1+n} \text{Sin}[e+f x]\right)\Big/\left(f (1+2 n) \sqrt{a-a\,\text{Sec}[e+f x]}\right)$$

Result (type 5, 366 leaves):

$$\frac{1}{f n (1+n) (2+n) (3+n) \text{Sec}[e+f x]^{3/2}} 2^{-\frac{3}{2}+n} e^{\frac{1}{2} i (e+f (1-2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{-\frac{1}{2}+n} \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3 \left(-e^{i f n x} \left(6+11 n+6 n^2+n^3\right) \text{Hypergeometric2F1}\left[\frac{n}{2},\frac{3}{2}+n,\frac{2+n}{2},-e^{2 i (e+f x)}\right]+3 e^{i (e+f (1+n) x)} n \left(6+5 n+n^2\right) \text{Hypergeometric2F1}\left[\frac{1+n}{2},\frac{3}{2}+n,\frac{3+n}{2},-e^{2 i (e+f x)}\right]+e^{2 i e} n (1+n) \left(-3 e^{i f (2+n) x} (3+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n,\frac{2+n}{2},\frac{4+n}{2},-e^{2 i (e+f x)}\right]+e^{i (e+f (3+n) x)} (2+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n,\frac{3+n}{2},\frac{5+n}{2},-e^{2 i (e+f x)}\right]\right)\right) (a-a\,\text{Sec}[e+f x])^{3/2}$$

Problem 326: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^n \sqrt{a-a\,\text{Sec}[e+f x]}\,dx$$

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

$$\left(2 a\, \text{Hypergeometric2F1}\left[\frac{1}{2},1-n,\frac{3}{2},1+\text{Sec}[e+f x]\right] (-\text{Sec}[e+f x])^{-n} \text{Sec}[e+f x]^{1+n} \text{Sin}[e+f x]\right)\Big/\left(f \sqrt{a-a\,\text{Sec}[e+f x]}\right)$$

Result (type 5, 222 leaves):

$$\left(2^{-\frac{1}{2}+n} e^{-\frac{1}{2} i (e+f (1+2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{\frac{1}{2}+n} \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right] \left(e^{i f n x} (1+n) \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{1}{2}+n, \frac{2+n}{2}, -e^{2 i (e+f x)}\right] - e^{i (e+f (1+n) x)} n \text{Hypergeometric2F1}\left[\frac{1}{2}+n, \frac{1+n}{2}, \frac{3+n}{2}, -e^{2 i (e+f x)}\right]\right) \sqrt{a-a \text{Sec}[e+f x]}\right) \Big/ \left(f n (1+n) \sqrt{\text{Sec}[e+f x]}\right)$$

Problem 327: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 130 leaves, 5 steps):

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

Result (type 5, 377 leaves):

$$\frac{1}{f n (1+n) (2+n) (3+n)} 2^{-\frac{3}{2}+n} e^{\frac{1}{2} i (e+f (1-2 n) x)} \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-\frac{1}{2}+n} \left(1+e^{2 i (e+f x)}\right)^{-\frac{1}{2}+n} \text{Csc}\left[\frac{1}{2} (e+f x)\right]^3 \left(-e^{i f n x} \left(6+11 n+6 n^2+n^3\right) \text{Hypergeometric2F1}\left[\frac{n}{2}, \frac{3}{2}+n, \frac{2+n}{2}, -e^{2 i (e+f x)}\right] + 3 e^{i (e+f (1+n) x)} n \left(6+5 n+n^2\right) \text{Hypergeometric2F1}\left[\frac{1+n}{2}, \frac{3}{2}+n, \frac{3+n}{2}, -e^{2 i (e+f x)}\right] + e^{2 i e} n (1+n) \left(-3 e^{i f (2+n) x} (3+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n, \frac{2+n}{2}, \frac{4+n}{2}, -e^{2 i (e+f x)}\right] + e^{i (e+f (3+n) x)} (2+n) \text{Hypergeometric2F1}\left[\frac{3}{2}+n, \frac{3+n}{2}, \frac{5+n}{2}, -e^{2 i (e+f x)}\right]\right)\right) \text{Sec}[e+f x]^{-\frac{3}{2}-n} (d \text{Sec}[e+f x])^n (a-a \text{Sec}[e+f x])^{3/2}$$

Problem 328: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

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

Result (type 5, 236 leaves):

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

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

$$\int \text{Sec}[e+f\,x]^n\,(1+\text{Sec}[e+f\,x])^m\,dx$$

Optimal (type 6, 72 leaves, 2 steps):

$$\left(2^{\frac{1}{2}+m}\,\text{AppellF1}\left[\frac{1}{2},1-n,\frac{1}{2}-m,\frac{3}{2},1-\text{Sec}[e+f\,x],\frac{1}{2}\,(1-\text{Sec}[e+f\,x])\right]\text{Tan}[e+f\,x]\right)\Big/\left(f\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 6, 2246 leaves):

$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^{-1+n}\text{Sec}[e+f\,x]^n\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{m+n}(1+\text{Sec}[e+f\,x])^m\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\left(\left(3\times 2^m\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{m+n}\right)\Big/\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+\right.\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$
$$\Bigg(3\times 2^{1+m}(-1+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$
$$\Bigg(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-$$
$$\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\Bigg(2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$3\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg(\left(-1+n\right)\Bigg(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},m+n,3-n,\frac{7}{2},\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$
$$(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)+(m+n)\Bigg(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,\right.$$
$$2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\right.$$
$$\frac{1}{2}(e+f x)\Big]+\frac{3}{5}(1+m+n)\,\text{AppellF1}\left[\frac{5}{2},2+m+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$2\Bigg(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2+$$
$$\Bigg(3\times 2^{1+m}(m+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+m+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$2\Bigg(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)\Bigg)$$

Problem 330: Result more than twice size of optimal antiderivative.

$$\int(1-\text{Sec}[e+f x])^m\,\text{Sec}[e+f x]^n\,dx$$

Optimal (type 6, 89 leaves, 2 steps):

$$\left(\sqrt{2}\ \text{AppellF1}\left[\frac{1}{2}+m,1-n,\frac{1}{2},\frac{3}{2}+m,1-\text{Sec}[e+f x],\frac{1}{2}(1-\text{Sec}[e+f x])\right](1-\text{Sec}[e+f x])^m \text{Tan}[e+f x]\right)\Big/\left(f(1+2 m)\sqrt{1+\text{Sec}[e+f x]}\right)$$

Result (type 6, 2751 leaves):

$$\left(2(3+2 m)\ \text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-\frac{1}{2}+m+n}(1-\text{Sec}[e+f x])^m \text{Sec}[e+f x]^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{m+n}\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2 m}\right)\Big/$$

$$\left(f(1+2 m)\left((3+2 m)\ \text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$

$$2\left((-1+n)\ \text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\ \text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(2(3+2 m)\left(-\frac{1}{2}+m+n\right)\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\right.\right.\right.$$

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

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

$$\left((1+2 m)\left((3+2 m)\ \text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\ \text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(2(3+2m)\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-\frac{1}{2}+m+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}$$

$$\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2m}\Bigg(-\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(1-n)\,\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\right.$$

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

$$\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\Bigg((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\right.$$

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

$$\Bigg(2(3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

$$\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-$$

$$\left(2\,(3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-\frac{1}{2}+m+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\left(\frac{\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}}\right)^{1+2m}$$

$$\left(2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$(3+2m)\left(-\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(1-n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left((-1+n)\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(2-n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,m+n,\,3-n,\,\frac{7}{2}+m,\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(m+n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,1+m+n,\,2-n,\,\frac{7}{2}+m,\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+(m+n)$$

$$\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(1-n)\,\text{AppellF1}\left[\frac{5}{2}+m,1+m+n,2-n,\frac{7}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(1+m+n)\,\text{AppellF1}\left[\frac{5}{2}+m,2+m+n,1-n,\frac{7}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(1+2m\right)\Bigg(\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\Bigg(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2\Bigg)+$$

$$\Bigg(2\left(3+2m\right)(m+n)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-\frac{1}{2}+m+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-1+m+n}\left(\frac{\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}}\right)^{1+2m}\left(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\right)\Bigg)\Bigg/\Bigg(\left(1+2m\right)$$

$$\Bigg(\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\Bigg(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)$$

Problem 331: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^n\,(a+a\,\text{Sec}[e+f x])^m\,dx$$

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

$$\frac{1}{f}2^{\frac{1}{2}+m}\,\text{AppellF1}\left[\frac{1}{2},\,1-n,\,\frac{1}{2}-m,\,\frac{3}{2},\,1-\text{Sec}[e+f x],\,\frac{1}{2}(1-\text{Sec}[e+f x])\right]$$
$$(1+\text{Sec}[e+f x])^{-\frac{1}{2}-m}\,(a+a\,\text{Sec}[e+f x])^m\,\text{Tan}[e+f x]$$

Result (type 6, 2248 leaves):

$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},\,m+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\,\text{Sec}[e+f x]^n\,\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Sec}[e+f x]\right)^{m+n}$$
$$\left.(a\,(1+\text{Sec}[e+f x]))^m\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},\,m+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},\,m+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2},\,1+m+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(3\times 2^m\,\text{AppellF1}\left[\frac{1}{2},\,m+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Sec}[e+f x]\right)^{m+n}\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,m+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},\,m+n,\,2-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},\,1+m+n,\,1-n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$
$$\left(3\times 2^{1+m}\,(-1+n)\,\text{AppellF1}\left[\frac{1}{2},\,m+n,\,1-n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\text{AppellF1}\Bigg[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\Bigg(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

$$\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\Bigg[\frac{3}{2},1+m+n,1-n,\frac{5}{2},$$

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

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\text{AppellF1}\Bigg[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\Bigg(2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

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

$$3\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\Bigg[\frac{3}{2},1+m+n,1-n,\frac{5}{2},$$

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

$$2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg((-1+n)\Bigg(-\frac{3}{5}(2-n)\,\text{AppellF1}\Bigg[\frac{5}{2},m+n,3-n,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}$$

$$(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)+(m+n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(1+m+n)\,\text{AppellF1}\left[\frac{5}{2},2+m+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2+$$

$$\Bigg(3\times 2^{1+m}(m+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-1+m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\right)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)\Bigg)$$

Problem 332: Unable to integrate problem.

$$\int \text{Sec}[e+fx]^n\,(a-a\,\text{Sec}[e+fx])^m\,dx$$

Optimal (type 6, 90 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,1-n,\frac{1}{2},\frac{3}{2}+m,1-\text{Sec}[e+fx],\frac{1}{2}(1-\text{Sec}[e+fx])\right](a-a\,\text{Sec}[e+fx])^m\,\text{Tan}[e+fx]\right)\Big/\left(f\,(1+2m)\,\sqrt{1+\text{Sec}[e+fx]}\right)$$

Result (type 8, 24 leaves):

$$\int \mathrm{Sec}[e+f x]^n \left(a-a\,\mathrm{Sec}[e+f x]\right)^m \,dx$$

Problem 333: Result more than twice size of optimal antiderivative.

$$\int \left(-\mathrm{Sec}[e+f x]\right)^n \left(1+\mathrm{Sec}[e+f x]\right)^m \,dx$$

Optimal (type 6, 85 leaves, 2 steps):

$$\left(\sqrt{2}\ \mathrm{AppellF1}\left[\frac{1}{2}+m,\ 1-n,\ \frac{1}{2},\ \frac{3}{2}+m,\ 1+\mathrm{Sec}[e+f x],\ \frac{1}{2}\left(1+\mathrm{Sec}[e+f x]\right)\right] \left(1+\mathrm{Sec}[e+f x]\right)^m \mathrm{Tan}[e+f x]\right) \Big/ \left(f\,(1+2 m)\sqrt{1-\mathrm{Sec}[e+f x]}\right)$$

Result (type 6, 2248 leaves):

$$\left(3\times 2^{1+m}\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n} \left(-\mathrm{Sec}[e+f x]\right)^n \left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^{m+n} \left(1+\mathrm{Sec}[e+f x]\right)^m \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right) \Big/$$
$$\left(f\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\ m+n,\ 2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (m+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\ 1+m+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \left(\left(3\times 2^m\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n \left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^{m+n}\right) \Big/\right.$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\ m+n,\ 2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (m+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\ 1+m+n,\ 1-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) +$$
$$\left(3\times 2^{1+m}\,(-1+n)\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n} \left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^{m+n} \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \Big/$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\ m+n,\ 1-n,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\ m+n,\ 2-n,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +\right.\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$
$$\left(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-$$
$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$
$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$3\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left((-1+n)\left(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},m+n,3-n,\frac{7}{2},\right.\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}$$
$$(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+(m+n)\left(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,\right.\right.$$
$$2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[$$

$$\frac{1}{2}(e+fx)\Big] + \frac{3}{5}(1+m+n)\,\text{AppellF1}\Big[\frac{5}{2}, 2+m+n, 1-n, \frac{7}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]\Big)\Big)\Big)\Big)\Big) \Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2}, m+n, 1-n, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big] + 2\,\Big(\big(-1+n\big)\,\text{AppellF1}\Big[\frac{3}{2}, m+n, 2-n, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big] + (m+n)\,\text{AppellF1}\Big[\frac{3}{2}, 1+m+n, 1-n, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^2 +$$

$$\Big(3\times 2^{1+m}\,(m+n)\,\text{AppellF1}\Big[\frac{1}{2}, m+n, 1-n, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\,\Big(\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^{-1+n}\,\Big(\text{Cos}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Sec}[e+fx]\Big)^{-1+m+n}\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]\,\Big(-\text{Cos}\Big[\frac{1}{2}(e+fx)\Big]\,\text{Sec}[e+fx]\,\text{Sin}\Big[\frac{1}{2}(e+fx)\Big] + \text{Cos}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Sec}[e+fx]\,\text{Tan}[e+fx]\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2}, m+n, 1-n, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big] + 2\,\Big(\big(-1+n\big)\,\text{AppellF1}\Big[\frac{3}{2}, m+n, 2-n, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big] + (m+n)\,\text{AppellF1}\Big[\frac{3}{2}, 1+m+n, 1-n, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)\Big)\Big)$$

Problem 334: Result more than twice size of optimal antiderivative.

$$\int (1-\text{Sec}[e+fx])^m\,(-\text{Sec}[e+fx])^n\,dx$$

Optimal (type 6, 70 leaves, 2 steps):

$$\Big(2^{\frac{1}{2}+m}\,\text{AppellF1}\Big[\frac{1}{2}, 1-n, \frac{1}{2}-m, \frac{3}{2}, 1+\text{Sec}[e+fx], \frac{1}{2}\big(1+\text{Sec}[e+fx]\big)\Big]\,\text{Tan}[e+fx]\Big)\Big/\Big(f\,\sqrt{1-\text{Sec}[e+fx]}\Big)$$

Result (type 6, 2753 leaves):

$$\Big(2\,(3+2m)\,\text{AppellF1}\Big[\frac{1}{2}+m, m+n, 1-n, \frac{3}{2}+m, \text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big]$$

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

$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2m}\Bigg)\Bigg/$$

$$\Bigg(f(1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg(\Bigg(2(3+2m)\left(-\frac{1}{2}+m+n\right)\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\right.$$

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

$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2m}\Bigg)\Bigg/$$

$$\left((1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,m+n,2-n,\frac{5}{2}+m,\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,1+m+n,1-\right.$$

$$\left.\left.\left.\left.n,\frac{5}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$

$$\Bigg(2(3+2m)\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-\frac{1}{2}+m+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}$$

$$\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2 m} \left(-\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(1-n)\,\text{AppellF1}\left[\frac{3}{2}+m, m+n, 2-n, \frac{5}{2}+m,\right.\right.$$

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

$$\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m, 1+m+n, 1-n, \frac{5}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\left((3+2 m)\,\text{AppellF1}\left[\frac{1}{2}+m, m+n, 1-n, \frac{3}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m, m+n, 2-n, \frac{5}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m, 1+m+n, 1-n, \frac{5}{2}+m,\right.$$

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

$$\left(2(3+2 m)\,\text{AppellF1}\left[\frac{1}{2}+m, m+n, 1-n, \frac{3}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

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

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

$$\left((3+2 m)\,\text{AppellF1}\left[\frac{1}{2}+m, m+n, 1-n, \frac{3}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m, m+n, 2-n, \frac{5}{2}+m, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m, 1+m+n, 1-n, \frac{5}{2}+m,\right.$$

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

$$\left(2\,(3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$

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

$$\left(2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$(3+2\,m)\left(-\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)\,(1-n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\right.\right.$$

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

$$\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)\,(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\left((-1+n)\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)\,(2-n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,m+n,\,3-n,\,\frac{7}{2}+m,\right.\right.\right.$$

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

$$\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)\,(m+n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,1+m+n,\,2-n,\,\frac{7}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)\,(1-n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,1+m+n,\,2-n,\,\frac{7}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{1}{\frac{5}{2}+m}$$

$$\left(\frac{3}{2}+m\right)\,(1+m+n)\,\text{AppellF1}\left[\frac{5}{2}+m,\,2+m+n,\,1-n,\,\frac{7}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\Bigg((1+2m)\Bigg((3+2m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+2\Bigg((-1+n)\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,$$
$$\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(m+n)\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,\,1+m+n,$$
$$1-n,\,\frac{5}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2\Bigg)+$$

$$\Bigg(2(3+2m)(m+n)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

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

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

$$\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\,\mathrm{Tan}[e+f x]\Bigg)\Bigg)\Bigg/\Bigg((1+2m)$$

$$\Bigg((3+2m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$
$$2\Bigg((-1+n)\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+$$
$$(m+n)\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,$$

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

Problem 335: Result more than twice size of optimal antiderivative.

$$\int (-\mathrm{Sec}[e+f x])^n (a+a\,\mathrm{Sec}[e+f x])^m \, dx$$

Optimal (type 6, 87 leaves, 3 steps):

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

Result (type 6, 2250 leaves):

$$\left(3\times 2^{1+m}\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}(-\mathrm{Sec}[e+f x])^n\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{m+n}(a(1+\mathrm{Sec}[e+f x]))^m\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Big/$$
$$\left(f\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(\left(3\times 2^m\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^n\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{m+n}\right)\Big/\right.$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$
$$\left(3\times 2^{1+m}(-1+n)\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{m+n}\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Big/$$
$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$
\begin{aligned}
&-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)+\\
&\Bigg(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\\
&\quad\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\\
&\quad\quad\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\Big[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\\
&\quad\quad\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Big/\\
&\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\\
&\quad 2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\\
&\quad\quad(m+n)\,\text{AppellF1}\Big[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\\
&\quad\quad-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-\\
&\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\\
&\quad\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+f x)\right]\\
&\quad\Bigg(2\Bigg((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\\
&\quad\quad(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\\
&\quad\quad\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\\
&\quad\quad 3\Bigg(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\\
&\quad\quad\quad\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\Big[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\\
&\quad\quad\quad\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)+\\
&\quad\quad 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg((-1+n)\Bigg(-\frac{3}{5}(2-n)\,\text{AppellF1}\Big[\frac{5}{2},m+n,3-n,\frac{7}{2},\\
&\quad\quad\quad\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\\
&\quad\quad\quad(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\\
&\quad\quad\quad\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)+(m+n)\Bigg(-\frac{3}{5}(1-n)\,\text{AppellF1}\Big[\frac{5}{2},1+m+n,\\
&\quad\quad\quad 2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[\\
&\quad\quad\quad\frac{1}{2}(e+f x)\Big]+\frac{3}{5}(1+m+n)\,\text{AppellF1}\Big[\frac{5}{2},2+m+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,
\end{aligned}
$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$2\Big((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)^2+$$
$$\Big(3\times 2^{1+m}\,(m+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-1+m+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Big(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+$$
$$\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\Big)\Big)\Big/$$
$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$2\Big((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)\Big)$$

Problem 336: Unable to integrate problem.

$$\int(-\text{Sec}[e+fx])^n\,(a-a\,\text{Sec}[e+fx])^m\,dx$$

Optimal (type 6, 87 leaves, 3 steps):

$$\frac{1}{f}2^{\frac{1}{2}+m}\,\text{AppellF1}\left[\frac{1}{2},1-n,\frac{1}{2}-m,\frac{3}{2},1+\text{Sec}[e+fx],\frac{1}{2}(1+\text{Sec}[e+fx])\right]$$
$$(1-\text{Sec}[e+fx])^{-\frac{1}{2}-m}\,(a-a\,\text{Sec}[e+fx])^m\,\text{Tan}[e+fx]$$

Result (type 8, 26 leaves):

$$\int(-\text{Sec}[e+fx])^n\,(a-a\,\text{Sec}[e+fx])^m\,dx$$

Problem 337: Result more than twice size of optimal antiderivative.

$$\int(d\,\text{Sec}[e+fx])^n\,(1+\text{Sec}[e+fx])^m\,dx$$

Optimal (type 6, 79 leaves, 2 steps):

$$-\left(\left(\text{AppellF1}\left[n,\frac{1}{2},\frac{1}{2}-m,1+n,\text{Sec}[e+fx],-\text{Sec}[e+fx]\right](d\,\text{Sec}[e+fx])^n\,\text{Tan}[e+fx]\right)\Big/\left(f\,n\sqrt{1-\text{Sec}[e+fx]}\,\sqrt{1+\text{Sec}[e+fx]}\right)\right)$$

Result (type 6, 2248 leaves):

$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}(d\,\text{Sec}[e+fx])^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}(1+\text{Sec}[e+fx])^m\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(\left(3\times 2^{m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\right)\Big/\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$
$$\left(3\times 2^{1+m}(-1+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$
$$\left(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$

$$2\left(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

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

$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.$$

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

$$\left(2\left(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.\right.$$

$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right)$$

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

$$3\left(-\frac{1}{3}\left(1-n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$

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

$$2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(\left(-1+n\right)\left(-\frac{3}{5}\left(2-n\right)\text{AppellF1}\left[\frac{5}{2},m+n,3-n,\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{3}{5}$$

$$(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)+(m+n)\left(-\frac{3}{5}\left(1-n\right)\text{AppellF1}\left[\frac{5}{2},1+m+n,\right.\right.$$

$$2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(e+f x\right)\Big]+\frac{3}{5}\left(1+m+n\right)\text{AppellF1}\left[\frac{5}{2},2+m+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$

$$2\left(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$

$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$
$$\left(3\times 2^{1+m}(m+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+m+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)$$

Problem 338: Result more than twice size of optimal antiderivative.

$$\int(1-\text{Sec}[e+f x])^m\,(d\,\text{Sec}[e+f x])^n\,dx$$

Optimal (type 6, 79 leaves, 2 steps):

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

Result (type 6, 2753 leaves):

$$\left(2\,(3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,m+n,1-n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-\frac{1}{2}+m+n}(1-\text{Sec}[e+f x])^m\,(d\,\text{Sec}[e+f x])^n$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{m+n}\left(\frac{\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}}\right)^{1+2m}\right)\Big/$$

$$\left(f\,(1+2\,m)\,\left(\left(3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.\right.$$

$$2\,\left(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+\right.$$

$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\left(\left(2\,(3+2\,m)\,\left(-\frac{1}{2}+m+n\right)\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\right.\right.\right.$$

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

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

$$\left(\left(1+2\,m\right)\left(\left(3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+2\,\left(\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-\right.$$

$$\left.\left.\left.n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+$$

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

$$\left(\frac{\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}}\right)^{1+2\,m}\left(-\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(1-n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\right.\right.$$

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

$$\frac{1}{\frac{3}{2}+m}\left(\frac{1}{2}+m\right)(m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\Big((3+2m)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Big((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\right.$$

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

$$\Bigg(2\,(3+2m)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-\frac{1}{2}+m+n}\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Sec}[e+f x]\right)^{m+n}$$

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

$$\Big((3+2m)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Big((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\right.$$

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

$$\Bigg(2\,(3+2m)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\Bigg(2\,\Big((-1+n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$(m+n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$(3+2m)\,\Bigg(-\frac{1}{\frac{3}{2}+m}\Big(\frac{1}{2}+m\Big)\,(1-n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,$$

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

$$\frac{1}{\frac{3}{2}+m}\Big(\frac{1}{2}+m\Big)\,(m+n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,1+m+n,\,1-n,\,\frac{5}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\,\Bigg((-1+n)\,\Bigg(-\frac{1}{\frac{5}{2}+m}\Big(\frac{3}{2}+m\Big)\,(2-n)\,\text{AppellF1}\Big[\frac{5}{2}+m,\,m+n,\,3-n,\,\frac{7}{2}+m,$$

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

$$\frac{1}{\frac{5}{2}+m}\Big(\frac{3}{2}+m\Big)\,(m+n)\,\text{AppellF1}\Big[\frac{5}{2}+m,\,1+m+n,\,2-n,\,\frac{7}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Bigg)+(m+n)$$

$$\Bigg(-\frac{1}{\frac{5}{2}+m}\Big(\frac{3}{2}+m\Big)\,(1-n)\,\text{AppellF1}\Big[\frac{5}{2}+m,\,1+m+n,\,2-n,\,\frac{7}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]+\frac{1}{\frac{5}{2}+m}$$

$$\Big(\frac{3}{2}+m\Big)\,(1+m+n)\,\text{AppellF1}\Big[\frac{5}{2}+m,\,2+m+n,\,1-n,\,\frac{7}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Bigg((1+2m)\,\Big((3+2m)\,\text{AppellF1}\Big[\frac{1}{2}+m,\,m+n,\,1-n,\,\frac{3}{2}+m,\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+2\,\Big((-1+n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,m+n,\,2-n,\,\frac{5}{2}+m,$$

$$\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+(m+n)\,\text{AppellF1}\Big[\frac{3}{2}+m,\,1+m+n,$$

$$1-n,\ \frac{5}{2}+m,\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)^2\Big)+$$

$$\Big(2\,(3+2 m)\,(m+n)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\ m+n,\ 1-n,\ \frac{3}{2}+m,\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

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

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

$$\Big((3+2 m)\,\mathrm{AppellF1}\left[\frac{1}{2}+m,\ m+n,\ 1-n,\ \frac{3}{2}+m,\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$2\Big((-1+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\ m+n,\ 2-n,\ \frac{5}{2}+m,\ \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+$$

$$(m+n)\,\mathrm{AppellF1}\left[\frac{3}{2}+m,\ 1+m+n,\ 1-n,\ \frac{5}{2}+m,\right.$$

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

Problem 339: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 95 leaves, 3 steps):

$$-\Big(\Big(\mathrm{AppellF1}\left[n,\ \frac{1}{2},\ \frac{1}{2}-m,\ 1+n,\ \mathrm{Sec}[e+f x],\ -\mathrm{Sec}[e+f x]\right](d\,\mathrm{Sec}[e+f x])^n$$

$$(1+\mathrm{Sec}[e+f x])^{-\frac{1}{2}-m}\,(a+a\,\mathrm{Sec}[e+f x])^m\,\mathrm{Tan}[e+f x]\Big)\Big/\Big(f\,n\,\sqrt{1-\mathrm{Sec}[e+f x]}\Big)\Big)$$

Result (type 6, 2250 leaves):

$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}(d\,\text{Sec}[e+fx])^n\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}$$
$$\left.(a(1+\text{Sec}[e+fx]))^m\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(\left(3\times 2^{m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$
$$\left(3\times 2^{1+m}(-1+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left.\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)+$$
$$\left(3\times 2^{1+m}\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right.$$
$$\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-$$

$$\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{m+n}\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\Bigg(2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$

$$3\left(-\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg((-1+n)\Bigg(-\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},m+n,3-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(m+n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)+(m+n)\Bigg(-\frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2},1+m+n,2-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(1+m+n)\,\text{AppellF1}\left[\frac{5}{2},2+m+n,1-n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2+$$

$$\Bigg(3\times 2^{1+m}(m+n)\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{-1+n}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+m+n}$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m+n,1-n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$2\left((-1+n)\,\text{AppellF1}\left[\frac{3}{2},m+n,2-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(m+n)\,\text{AppellF1}\left[\frac{3}{2},1+m+n,1-n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)$$

Problem 340: Unable to integrate problem.

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

Optimal (type 6, 96 leaves, 3 steps):

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

Result (type 8, 26 leaves):

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

Problem 345: Result more than twice size of optimal antiderivative.

$$\int(a+a\,\text{Sec}[e+f x])^m\,dx$$

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

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},1,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sec}[e+f x]),1+\text{Sec}[e+f x]\right]\right.$$
$$\left.(a+a\,\text{Sec}[e+f x])^m\,\text{Tan}[e+f x]\right)\Big/\left(f\,(1+2m)\,\sqrt{1-\text{Sec}[e+f x]}\right)$$

Result (type 6, 1653 leaves):

$$\left(3\times 2^m\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m\,(a\,(1+\text{Sec}[e+f x]))^m\,\text{Sin}[e+f x]\right)\Big/$$
$$\left(f\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-\right.\right.$$

$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$\left.m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)$$
$$\Bigg(\Bigg(3\times 2^m\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Cos}[e+fx]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-$$
$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$\left.m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+\Bigg(3\times 2^m\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\text{Sin}[e+fx]$$
$$\Bigg(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-$$
$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$
$$\left.\left.1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-$$
$$\Bigg(3\times 2^m\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\text{Sin}[e+fx]$$
$$\Bigg(-2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$\left.m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$3\Bigg(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)-2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\Bigg(-\frac{6}{5}\text{AppellF1}\left[\frac{5}{2},m,3,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\,m\,\text{AppellF1}\left[\frac{5}{2},1+m,2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]-m\left(-\frac{3}{5}\text{AppellF1}\left[\frac{5}{2},1+m,2,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(1+m)\,\text{AppellF1}\left[\frac{5}{2},2+m,1,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\left(3\times 2^m\,m\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{-1+m}\text{Sin}[e+f x]\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\,\text{Tan}[e+f x]\right)\right)\Bigg/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Bigg)$$

Problem 346: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[e+f x]\,(a+a\,\text{Sec}[e+f x])^m\,dx$$

Optimal (type 6, 84 leaves, 3 steps):

$$-\left(\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},2,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sec}[e+f x]),1+\text{Sec}[e+f x]\right](a+a\,\text{Sec}[e+f x])^m\,\text{Tan}[e+f x]\right)\Big/\left(f\,(1+2m)\sqrt{1-\text{Sec}[e+f x]}\right)\right)$$

Result (type 6, 3781 leaves):

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

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/\right.\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$

$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},1+\right.\right.$$

$$\left.\left.\left.m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\frac{2}{3}\left(-2\,\text{AppellF1}\left[\frac{3}{2},m,3,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$\left.\left.\left.\left.1+m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)\Big/$$

$$\left(f\left(2^m\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]^4\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\right.\right.$$

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/\right.\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$

$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$\left.\left.\left.1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$

$$\frac{2}{3}\left(-2\,\text{AppellF1}\left[\frac{3}{2},m,3,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$\left.\left.\left.\left.1+m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)-$$

$$3\times 2^m\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\text{Sin}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/\right.\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$

$$2\left(\text{AppellF1}\left[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$\left.\left.\left.1+m,1,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2}, m, 2, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \frac{2}{3}\left(-2\,\text{AppellF1}\left[\frac{3}{2}, m, 3, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) +$$

$$2^{1+m}\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^m\text{Sin}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/\left(3\,\text{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] - 2\left(\text{AppellF1}\left[\frac{3}{2}, m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] - m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) -$$

$$\left(3\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(-\frac{1}{3}\text{AppellF1}\left[\frac{3}{2}, m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] - 2\left(\text{AppellF1}\left[\frac{3}{2}, m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] - m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right) +$$

$$\left(2\left(-\frac{2}{3}\text{AppellF1}\left[\frac{3}{2}, m, 3, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2}, m, 2, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \frac{2}{3}\left(-2\,\text{AppellF1}\left[\frac{3}{2}, m, 3, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right) +$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right.$$

$$\left(-2\left(\text{AppellF1}\left[\frac{3}{2}, m, 2, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] - m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}\right.$$

$$\left(e+f x\right)\Big]+3\left(-\frac{1}{3}\,\text{AppellF1}\Big[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\right.$$

$$\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]+\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},1+m,1,\frac{5}{2},$$

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

$$2\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\left(-\frac{6}{5}\,\text{AppellF1}\Big[\frac{5}{2},m,3,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,\right.$$

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

$$\frac{3}{5}\,m\,\text{AppellF1}\Big[\frac{5}{2},1+m,2,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]-m\left(-\frac{3}{5}\,\text{AppellF1}\Big[\frac{5}{2},1+m,2,\right.$$

$$\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]+\frac{3}{5}\left(1+m\right)\text{AppellF1}\Big[\frac{5}{2},2+m,1,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,$$

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

$$\left(3\,\text{AppellF1}\Big[\frac{1}{2},m,1,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]-\right.$$

$$2\left(\text{AppellF1}\Big[\frac{3}{2},m,2,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]-m\,\text{AppellF1}\Big[\frac{3}{2},\right.$$

$$\left.\left.1+m,1,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\right)\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\right)^2-$$

$$\left(2\,\text{AppellF1}\Big[\frac{1}{2},m,2,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\right.$$

$$\left(-\frac{2}{3}\,\text{AppellF1}\Big[\frac{3}{2},m,3,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\right.$$

$$\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]+\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},1+m,2,\frac{5}{2},$$

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

$$\frac{2}{3}\left(-2\,\text{AppellF1}\Big[\frac{3}{2},m,3,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]+m\,\text{AppellF1}\Big[\right.$$

$$\left.\frac{3}{2},1+m,2,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]\right)\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]+\frac{2}{3}\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\left(-2\left(-\frac{9}{5}\,\text{AppellF1}\Big[\frac{5}{2},m,4,\frac{7}{2},\text{Tan}\Big[\right.\right.$$

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

$$\frac{3}{5}\,m\,\text{AppellF1}\Big[\frac{5}{2},1+m,3,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\Big]$$

$$\left.\text{Sec}\Big[\frac{1}{2}\left(e+f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\left(e+f x\right)\Big]\right)+m\left(-\frac{6}{5}\,\text{AppellF1}\Big[\frac{5}{2},1+m,\right.$$

$$3, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{3}{5}(1+m)\,\mathrm{AppellF1}\left[\frac{5}{2}, 2+m, 2, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg)\Bigg) \Big/$$

$$\Bigg(\mathrm{AppellF1}\left[\frac{1}{2}, m, 2, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \frac{2}{3}\Bigg(-2\,\mathrm{AppellF1}\left[\frac{3}{2}, m, 3, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + m\,\mathrm{AppellF1}\left[\frac{3}{2}, 1+m, 2, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2\Bigg) +$$

$$2^{1+m}\, m\, \mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^3 \left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Sec}[e+f x]\right)^{-1+m} \mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]$$

$$\Bigg(-\Bigg(\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) \Big/ \Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2}, m, 1, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] - 2\Bigg(\mathrm{AppellF1}\left[\frac{3}{2}, m, 2, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] - m\,\mathrm{AppellF1}\left[\frac{3}{2}, 1+m, 1, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg) +$$

$$\Bigg(2\,\mathrm{AppellF1}\left[\frac{1}{2}, m, 2, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \Big/ \Bigg(\mathrm{AppellF1}\left[\frac{1}{2}, m, 2, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \frac{2}{3}\Bigg(-2\,\mathrm{AppellF1}\left[\frac{3}{2}, m, 3, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + m\,\mathrm{AppellF1}\left[\frac{3}{2}, 1+m, 2, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg) \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)$$

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

Problem 347: Result more than twice size of optimal antiderivative.

$$\int (d\,\mathrm{Sec}[e+f x])^{3/2} (a+a\,\mathrm{Sec}[e+f x])^m \, dx$$

Optimal (type 6, 98 leaves, 3 steps):

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

Result (type 6, 2529 leaves):

$$-\Bigg(\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\sqrt{\text{Sec}[e+f x]}\,(d\,\text{Sec}[e+f x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m (a\,(1+\text{Sec}[e+f x]))^m\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Big/\Bigg(f\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(3+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)$$

$$\Bigg(\Bigg(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\sqrt{\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\Bigg(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(3+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(3\times 2^{m}\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\sqrt{\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m\Bigg)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\Bigg(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(3+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(3\times 2^{m}\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}[e+f x]^{3/2}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m$$

$$\text{Sin}[e+f x]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(\text{AppellF1}\left[\frac{3}{2},\right.\right.\right.$$
$$\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(3+2m)\,\text{AppellF1}\Big[\frac{3}{2},$$
$$\left.\left.\left.\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)-$$
$$\left(3\times 2^{1+m}\sqrt{\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right.$$
$$\left(\frac{1}{6}\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(\frac{3}{2}+m\right)\text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Bigg/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+\left(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(3+2m)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$
$$\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\sqrt{\text{Sec}[e+f x]}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^m\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$
$$\left(\left(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$(3+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\right)\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$3\left(\frac{1}{6}\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(\frac{3}{2}+m\right)\text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-\frac{3}{10}\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+m,\frac{3}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}\left(\frac{3}{2}+m\right)$$
$$\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}+m,\frac{1}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+(3+2 m)\left(\frac{3}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}+m,\frac{1}{2},\frac{7}{2},\right.\right.$$

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

$$\frac{3}{5}\left(\frac{5}{2}+m\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{2}+m,-\frac{1}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(3+2 m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\right.$$

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

$$\left(3\times 2^{1+m}\, m\, \text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

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

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

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}+m,-\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(\text{AppellF1}\right[\right.$$

$$\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left]+(3+2 m)\,\text{AppellF1}\right[\frac{3}{2},$$

$$\left.\left.\left.\left.\frac{5}{2}+m,-\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)$$

Problem 348: Result more than twice size of optimal antiderivative.

$$\int\sqrt{d\,\text{Sec}[e+f x]}\,(a+a\,\text{Sec}[e+f x])^m\,dx$$

Optimal (type 6, 96 leaves, 3 steps):

$$-\left(\left(2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\text{Sec}[e+f x],-\text{Sec}[e+f x]\right]\sqrt{d\,\text{Sec}[e+f x]}\right.\right.$$

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

Result (type 6, 2225 leaves):

$$\left(2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\sqrt{d\,\text{Sec}[e+f x]}\right.$$

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

$$\Bigg(f\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}\,\Bigg(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-$$

$$\frac{1}{3}\Bigg(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-(1+2m)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)$$

$$\Bigg(\Bigg(2^m\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]\right)^{\frac{1}{2}+m}\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-\frac{1}{3}$$

$$\Bigg(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-(1+2m)\,\text{AppellF1}\Big[$$

$$\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-$$

$$\Bigg(2^m\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

$$\Bigg(\sqrt{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}\,\Bigg(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-$$

$$\frac{1}{3}\Bigg(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-$$

$$(1+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)$$

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

$$\Bigg(-\frac{1}{6}\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(\frac{1}{2}+m\right)\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},$$

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

$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}\;\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]-\right.\right.$$
$$\frac{1}{3}\left(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]-\right.$$
$$\left.(1+2\,m)\;\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)-\left(2^{1+m}\;\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\;\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sec}[e+f\,x]\right)^{\frac{1}{2}+m}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$
$$\left(-\frac{1}{6}\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{1}{3}\left(\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-$$
$$\frac{1}{3}\left(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]-\right.$$
$$\left.(1+2\,m)\;\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{3}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\left(-\frac{9}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\right.\right.$$
$$\left.\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$\frac{3}{5}\left(\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+m,\frac{3}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-(1+2\,m)\left(-\frac{3}{10}\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}+m,\frac{3}{2},\frac{7}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$\frac{3}{5}\left(\frac{3}{2}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}+m,\frac{1}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$
$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\right)\right)\right)\Bigg/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}\right.$$
$$\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]-\frac{1}{3}\left(\text{AppellF1}\left[\right.\right.\right.$$
$$\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]-(1+2\,m)\;\text{AppellF1}\Big[\frac{3}{2},$$
$$\left.\left.\left.\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\right)+$$

$$\left(2^{1+m}\left(\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{1}{2}+m}\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(-\text{Cos}\left[\frac{1}{2}(e+fx)\right]\text{Sec}[e+fx]\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+\right.$$
$$\left.\left.\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\,\text{Tan}[e+fx]\right)\right)\Big/$$
$$\left(\sqrt{\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2}\left(\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.\right.$$
$$\frac{1}{3}\left(\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$(1+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}+m,\frac{1}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\right)$$

Problem 349: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sec}[e+fx])^m}{\sqrt{d\,\text{Sec}[e+fx]}}\,dx$$

Optimal (type 6, 96 leaves, 3 steps):

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

Result (type 6, 2424 leaves):

$$-\left(\left(\left(3\times 2^{1+m}\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\sqrt{\text{Sec}[e+fx]}\right.\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\text{Sec}[e+fx]\right)^{-\frac{1}{2}+m}(1+\text{Sec}[e+fx])^{-m}(a(1+\text{Sec}[e+fx]))^m$$
$$\left(\text{Cos}[2(e+fx)]\left(\frac{(1+\text{Sec}[e+fx])^m}{2\sqrt{\text{Sec}[e+fx]}}-\frac{1}{2}\,i\,\sqrt{\text{Sec}[e+fx]}\,(1+\text{Sec}[e+fx])^m\,\text{Sin}[e+fx]\right)+\right.$$
$$\frac{\frac{1}{2}(1+\text{Sec}[e+fx])^m+\frac{1}{2}\,i\,(1+\text{Sec}[e+fx])^m\,\text{Sin}[2(e+fx)]}{\sqrt{\text{Sec}[e+fx]}}+\sqrt{\text{Sec}[e+fx]}$$

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

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

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\right.$$
$$\left(1-2m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)$$

$$\left(-\left(\left(3\times2^m\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.\right.\right.$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Sec}[e+f x]\right)^{-\frac{1}{2}+m}\right)\Bigg/\left(\sqrt{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}\left(-3\,\text{AppellF1}\left[\frac{1}{2},\right.\right.\right.$$
$$-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\left(3\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\right.\right.$$
$$\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\left(1-2m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\right.$$
$$\left.\left.\left.\left.\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\right)\right)+$$

$$\left(9\times2^m\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Sec}[e+f x]\right)^{-\frac{1}{2}+m}\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\Bigg/\left(\left(\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^{3/2}\right.$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{3}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\left(3\,\text{AppellF1}\left[\right.\right.\right.$$
$$\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]+\left(1-2m\right)\text{AppellF1}\left[\right.$$
$$\left.\left.\left.\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\right)-$$

$$\left(3\times2^{1+m}\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Sec}[e+f x]\right)^{-\frac{1}{2}+m}\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right.$$
$$\left(-\frac{1}{2}\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{1}{3}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{3}{2},\frac{5}{2},\right.$$

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

$$\left(\left(\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{3/2}\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{3}{2}, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \left(3\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + (1-2m)\,\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{3}{2}, \frac{5}{2},\right.$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) +$$

$$\left(3\times 2^{1+m}\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{3}{2}, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Sec}[e+fx]\right)^{-\frac{1}{2}+m}\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(\left(3\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] +\right.\right.$$

$$(1-2m)\,\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{3}{2}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$3\left(-\frac{1}{2}\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}\left(-\frac{1}{2}+m\right)\mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{3}{2}, \frac{5}{2},\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right) +$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(3\left(-\frac{3}{2}\mathrm{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}+m, \frac{7}{2}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{3}{5}\left(-\frac{1}{2}+m\right)$$

$$\mathrm{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m, \frac{5}{2}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right) + (1-2m)\left(-\frac{9}{10}\mathrm{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m,\right.\right.$$

$$\left.\frac{5}{2}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{3}{5}\left(\frac{1}{2}+m\right)\mathrm{AppellF1}\left[\frac{5}{2}, \frac{3}{2}+m, \frac{3}{2}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

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

$$\left(\left(\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{3/2}\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{3}{2}, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \left(3\,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big] + (1-2 m)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{3}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)^2\Big) -$$

$$\Big(3\times 2^{1+m}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{3}{2}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

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

$$\Big(-3\,\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{3}{2}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +$$

$$\Big(3\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +$$

$$(1-2 m)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{3}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

Problem 350: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(a+a\,\text{Sec}[e+f x])^m}{(d\,\text{Sec}[e+f x])^{3/2}}\,dx$$

Optimal (type 6, 98 leaves, 3 steps):

$$\left(2\,\text{AppellF1}\left[-\frac{3}{2}, \frac{1}{2}, \frac{1}{2}-m, -\frac{1}{2}, \text{Sec}[e+f x], -\text{Sec}[e+f x]\right](1+\text{Sec}[e+f x])^{-\frac{1}{2}-m}\right.$$

$$\left.(a+a\,\text{Sec}[e+f x])^m\,\text{Tan}[e+f x]\right)\Big/\left(3 f\sqrt{1-\text{Sec}[e+f x]}\,(d\,\text{Sec}[e+f x])^{3/2}\right)$$

Result (type 6, 5127 leaves):

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

$$\Big(\frac{1}{4}\text{Cos}[2(e+f x)]^3\sqrt{\text{Sec}[e+f x]}\,(1+\text{Sec}[e+f x])^m + \text{Cos}[2(e+f x)]^2\sqrt{\text{Sec}[e+f x]}$$

$$\left(\frac{1}{2}(1+\text{Sec}[e+f x])^m + \frac{1}{4}\,i\,(1+\text{Sec}[e+f x])^m\,\text{Sin}[2(e+f x)]\right) + \text{Cos}[2(e+f x)]$$

$$\sqrt{\text{Sec}[e+f x]}\left(\frac{1}{4}(1+\text{Sec}[e+f x])^m + \frac{1}{4}(1+\text{Sec}[e+f x])^m\,\text{Sin}[2(e+f x)]^2\right) +$$

$$\sqrt{\text{Sec}[e+f x]}\ \left(-\frac{1}{4}\,\text{i}\,(1+\text{Sec}[e+f x])^m\,\text{Sin}[2\,(e+f x)]+\frac{1}{2}\,(1+\text{Sec}[e+f x])^m\,\text{Sin}[2\,(e+f x)]^2+\frac{1}{4}\,\text{i}\,(1+\text{Sec}[e+f x])^m\,\text{Sin}[2\,(e+f x)]^3\right)\Bigg)$$

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

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\Bigg/\Bigg(\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-\frac{1}{3}\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1-2 m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg/\Bigg(-5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\Bigg(5\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1-2 m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)\Bigg/\Bigg(3 f\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{5/2}(d\,\text{Sec}[e+f x])^{3/2}$$

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

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

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\Bigg/\Bigg(\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-\frac{1}{3}\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1-2 m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(-5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\Bigg(5\,\text{AppellF1}\Big[\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(1-2 m)\,\text{AppellF1}\Big[$$

$$\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)\Big)+$$

$$\frac{1}{3\left(\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{3/2}}2^m\left(\operatorname{Cos}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Sec}[e+fx]\right)^{\frac{3}{2}+m}\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2$$

$$\Bigg(\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]-$$

$$\frac{1}{3}\Big(5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+(1-2m)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)$$

$$\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+\Big(5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

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

$$\Big(-5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+\Big(5\,\text{AppellF1}\Big[$$

$$\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+(1-2m)\,\text{AppellF1}\Big[$$

$$\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)\Big)-$$

$$\frac{1}{3\left(\operatorname{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right)^{5/2}}5\times2^m\left(\operatorname{Cos}\left[\frac{1}{2}(e+fx)\right]^2\operatorname{Sec}[e+fx]\right)^{\frac{3}{2}+m}\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\left(-1+\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2$$

$$\Bigg(\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]-$$

$$\frac{1}{3}\Big(5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+(1-2m)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)$$

$$\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+\Big(5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

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

$$\Big(-5\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+\Big(5\,\text{AppellF1}\Big[$$

$$\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]+(1-2m)\,\text{AppellF1}\Big[$$

$$\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Big)\operatorname{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)\Big)+$$

$$\frac{1}{3\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right)^{5/2}} 2^{1+m}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]\right)^{\frac{3}{2}+m} \text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

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

$$\left(\left(3\left(-\frac{5}{6}\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\right.$$

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

$$\left(\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]-\right.$$

$$\frac{1}{3}\left(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1-2m)\right.$$

$$\left.\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

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

$$\left(-5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(5\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1-2m)\right.$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+\left(5\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(-\frac{3}{2}\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\right.\right.\right.$$

$$\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{3}{5}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\left(-5\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\left(5\,\text{AppellF1}\left[\right.\right.\right.$$

$$\frac{5}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+(1-2m)\,\text{AppellF1}\Big[$$

$$\left.\left.\frac{5}{2},\frac{1}{2}+m,\frac{5}{2},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)-$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}+m,\frac{5}{2},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

$$\left(-\frac{5}{6}\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}+m,\frac{7}{2},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}+m,\frac{5}{2},\frac{5}{2},\right.$$

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

$$\frac{1}{3}\left(5\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{7}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +\right.$$

$$\left.(1-2m)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

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

$$\left(5\left(-\frac{21}{10}\text{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}+m, \frac{9}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{3}{5}\left(-\frac{1}{2}+m\right)$$

$$\text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m, \frac{7}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) + (1-2m)\left(-\frac{3}{2}\text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m,\right.\right.$$

$$\frac{7}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\right.$$

$$\frac{1}{2}(e+f x)\right] + \frac{3}{5}\left(\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}+m, \frac{5}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

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

$$\left(\text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] -\right.$$

$$\frac{1}{3}\left(5\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{7}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +\right.$$

$$(1-2m)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

$$\left(5\,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}+m, \frac{5}{2}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \left(\left(5\,\text{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}+m, \frac{7}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (1-2m)\,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m, \frac{5}{2}, \frac{7}{2},\right.$$

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

$$5\left(-\frac{3}{2}\text{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}+m, \frac{7}{2}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{3}{5}\left(-\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}+m, \frac{5}{2}, \frac{7}{2},\right.$$

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

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \left(5\left(-\frac{5}{2}\text{AppellF1}\left[\frac{7}{2}, -\frac{1}{2}+m, \frac{9}{2}, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{5}{7}\left(-\frac{1}{2}+m\right)$$

$$\text{AppellF1}\left[\frac{7}{2},\,\frac{1}{2}+m,\,\frac{7}{2},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Big)+(1-2\,m)\left(-\frac{25}{14}\,\text{AppellF1}\left[\frac{7}{2},\,\frac{1}{2}+m,\right.\right.$$

$$\frac{7}{2},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\,(e+f\,x)\Big]+\frac{5}{7}\left(\frac{1}{2}+m\right)\text{AppellF1}\left[\frac{7}{2},\,\frac{3}{2}+m,\,\frac{5}{2},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\Big(-5\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+m,\,\frac{5}{2},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+$$

$$\Big(5\,\text{AppellF1}\left[\frac{5}{2},\,-\frac{1}{2}+m,\,\frac{7}{2},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+$$

$$(1-2\,m)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{2}+m,\,\frac{5}{2},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\frac{1}{3\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^{5/2}}\,2^{1+m}\left(\frac{3}{2}+m\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\text{Sec}[e+f\,x]\right)^{\frac{1}{2}+m}$$

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

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

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+m,\,\frac{5}{2},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)\Big/\right.$$

$$\Big(\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2}+m,\,\frac{5}{2},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]-$$

$$\frac{1}{3}\Big(5\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+m,\,\frac{7}{2},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+(1-2\,m)$$

$$\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}+m,\,\frac{5}{2},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)+\Big(5\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+m,\,\frac{5}{2},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

$$\Big(-5\,\text{AppellF1}\left[\frac{3}{2},\,-\frac{1}{2}+m,\,\frac{5}{2},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+$$

$$\Big(5\,\text{AppellF1}\left[\frac{5}{2},\,-\frac{1}{2}+m,\,\frac{7}{2},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]+$$

$$(1-2\,m)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{2}+m,\,\frac{5}{2},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

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

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

Problem 351: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^{7/2} (a+a\,\text{Sec}[c+d x])\, dx$$

Optimal (type 4, 111 leaves, 7 steps):

$$\frac{6\,a\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{5\,d}+\frac{10\,a\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{21\,d}+\frac{10\,a\,\sqrt{\text{Cos}[c+d x]}\,\text{Sin}[c+d x]}{21\,d}+\frac{2\,a\,\text{Cos}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{5\,d}+\frac{2\,a\,\text{Cos}[c+d x]^{5/2}\,\text{Sin}[c+d x]}{7\,d}$$

Result (type 5, 490 leaves):

$$a\left(\sqrt{\text{Cos}[c+d\,x]}\,\left(1+\text{Cos}[c+d\,x]\right)\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\left(-\frac{3\,\text{Cot}[c]}{5\,d}+\frac{23\,\text{Cos}[d\,x]\,\text{Sin}[c]}{84\,d}+\frac{\text{Cos}[2\,d\,x]\,\text{Sin}[2\,c]}{10\,d}+\frac{\text{Cos}[3\,d\,x]\,\text{Sin}[3\,c]}{28\,d}+\frac{23\,\text{Cos}[c]\,\text{Sin}[d\,x]}{84\,d}+\frac{\text{Cos}[2\,c]\,\text{Sin}[2\,d\,x]}{10\,d}+\frac{\text{Cos}[3\,c]\,\text{Sin}[3\,d\,x]}{28\,d}\right)-\right.$$

$$\left(5\,\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(21\,d\,\sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{10\,d}3\,\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/$$

$$\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 352: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 87 leaves, 6 steps):

$$\frac{6\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{5\,d}+\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a\,\sqrt{\text{Cos}[c+d\,x]}\,\,\text{Sin}[c+d\,x]}{3\,d}+\frac{2\,a\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{5\,d}$$

Result (type 5, 458 leaves):

$$a\left(\sqrt{\text{Cos}[c+d\,x]}\,\,(1+\text{Cos}[c+d\,x])\,\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\left(-\frac{3\,\text{Cot}[c]}{5\,d}+\frac{\text{Cos}[d\,x]\,\,\text{Sin}[c]}{3\,d}+\frac{\text{Cos}[2\,d\,x]\,\,\text{Sin}[2\,c]}{10\,d}+\frac{\text{Cos}[c]\,\,\text{Sin}[d\,x]}{3\,d}+\frac{\text{Cos}[2\,c]\,\,\text{Sin}[2\,d\,x]}{10\,d}\right)-\right.$$

$$\left((1+\text{Cos}[c+d\,x])\,\,\text{Csc}[c]\,\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\,\text{Sin}[c]\,\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(3\,d\,\sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{10\,d}3\,\,(1+\text{Cos}[c+d\,x])\,\,\text{Csc}[c]\,\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},\,-\frac{1}{4}\right\},\,\left\{\frac{3}{4}\right\},\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\,\text{Tan}[c]\right)\Big/$$

$$\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\,\sqrt{1+\text{Tan}[c]^2}}\,\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 353: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 61 leaves, 5 steps):

$$\frac{2 a \,\text{EllipticE}\left[\frac{1}{2} (c+d x), 2\right]}{d}+\frac{2 a \,\text{EllipticF}\left[\frac{1}{2} (c+d x), 2\right]}{3 d}+\frac{2 a \sqrt{\text{Cos}[c+d x]} \,\text{Sin}[c+d x]}{3 d}$$

Result (type 5, 424 leaves):

$$a \left(\sqrt{\text{Cos}[c+d x]} \left(1+\text{Cos}[c+d x]\right) \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \left(-\frac{\text{Cot}[c]}{d}+\frac{\text{Cos}[d x] \,\text{Sin}[c]}{3 d}+\frac{\text{Cos}[c] \,\text{Sin}[d x]}{3 d}\right)-\right.$$

$$\left(\left(1+\text{Cos}[c+d x]\right) \text{Csc}[c] \,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4}, \frac{1}{2}\right\}, \left\{\frac{5}{4}\right\}, \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2} \,\text{Sin}[c] \,\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}\right) \Big/$$

$$\left(3 d \sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{2 d}\left(1+\text{Cos}[c+d x]\right) \text{Csc}[c] \,\text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2}, -\frac{1}{4}\right\}, \left\{\frac{3}{4}\right\}, \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \,\text{Tan}[c]\right) \Big/$$

$$\left(\sqrt{1-\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]} \sqrt{1+\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c] \,\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}} \sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\left.\frac{\frac{\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2 \,\text{Cos}[c]^2 \,\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c] \,\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 354: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{\text{Cos}[c+d x]}\ (a+a\,\text{Sec}[c+d x])\, dx$$

Optimal (type 4, 35 leaves, 4 steps):

$$\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d x),\,2\right]}{d}+\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\,(c+d x),\,2\right]}{d}$$

Result (type 5, 155 leaves):

$$\frac{1}{2 d} a \sqrt{\text{Cos}[c+d x]}\ (1+\text{Cos}[c+d x])\ \text{Sec}\left[\frac{1}{2}\,(c+d x)\right]^2 \Bigg(-2 \sqrt{\text{Cos}[d x-\text{ArcTan}[\text{Cot}[c]]]^2}\ \sqrt{\text{Csc}[c]^2}\ \text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]]\ \text{Sin}[c]+\text{Tan}[d x+\text{ArcTan}[\text{Tan}[c]]]-\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]^2\right] \text{Tan}[d x+\text{ArcTan}[\text{Tan}[c]]]\right)\Bigg/\left(\sqrt{\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]]^2}\right)\Bigg)$$

Problem 355: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 57 leaves, 5 steps):

$$-\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d x),\,2\right]}{d}+\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\,(c+d x),\,2\right]}{d}+\frac{2\,a\,\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}}$$

Result (type 5, 413 leaves):

$$a\left(\sqrt{\text{Cos}[c+d\,x]}\,\left(1+\text{Cos}[c+d\,x]\right)\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\right.$$

$$\left(\frac{\text{Csc}[c]\,\text{Sec}[c]}{d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[d\,x]}{d}\right)-\frac{1}{d\,\sqrt{1+\text{Cot}[c]^2}}$$

$$\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}+$$

$$\frac{1}{2\,d}\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}$$

$$\left.\left.\sqrt{1+\text{Tan}[c]^2}\right)-\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 356: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 83 leaves, 6 steps):

$$-\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),2\right]}{d}+$$

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

Result (type 5, 444 leaves) :

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

$$\left(\left(1+\text{Cos}[c+d\,x]\right)\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(3\,d\,\sqrt{1+\text{Cot}[c]^2}\right)+\frac{1}{2\,d}\left(1+\text{Cos}[c+d\,x]\right)\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/$$

$$\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 357: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 111 leaves, 7 steps) :

$$-\frac{6\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{5\,d}+\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a\,\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{5/2}}+\frac{2\,a\,\text{Sin}[c+d\,x]}{3\,d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{6\,a\,\text{Sin}[c+d\,x]}{5\,d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 5, 477 leaves):

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

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\left(\frac{3\,\text{Csc}[c]\,\text{Sec}[c]}{5\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[d\,x]}{5\,d}+\right.$$

$$\left.\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(3\,\text{Sin}[c]+5\,\text{Sin}[d\,x])}{15\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\,(5\,\text{Sin}[c]+9\,\text{Sin}[d\,x])}{15\,d}\right)-$$

$$\left(\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(3\,d\,\sqrt{1+\text{Cot}[c]^2}\right)+\frac{1}{10\,d}3\,\left(1+\text{Cos}[c+d\,x]\right)\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},\,-\frac{1}{4}\right\},\,\left\{\frac{3}{4}\right\},\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/$$

$$\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 358: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{a + a \operatorname{Sec}[c + d x]}{\operatorname{Cos}[c + d x]^{7/2}} \, dx$$

Optimal (type 4, 135 leaves, 8 steps):

$$-\frac{6 a \operatorname{EllipticE}\left[\frac{1}{2} (c + d x), 2\right]}{5 d} + \frac{10 a \operatorname{EllipticF}\left[\frac{1}{2} (c + d x), 2\right]}{21 d} + \frac{2 a \operatorname{Sin}[c + d x]}{7 d \operatorname{Cos}[c + d x]^{7/2}} + \frac{2 a \operatorname{Sin}[c + d x]}{5 d \operatorname{Cos}[c + d x]^{5/2}} + \frac{10 a \operatorname{Sin}[c + d x]}{21 d \operatorname{Cos}[c + d x]^{3/2}} + \frac{6 a \operatorname{Sin}[c + d x]}{5 d \sqrt{\operatorname{Cos}[c + d x]}}$$

Result (type 5, 505 leaves):

$$a \left(\sqrt{\text{Cos}[c+d x]} \; (1+\text{Cos}[c+d x]) \; \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \left(\frac{3 \,\text{Csc}[c] \; \text{Sec}[c]}{5 d} + \frac{\text{Sec}[c] \; \text{Sec}[c+d x]^4 \, \text{Sin}[d x]}{7 d} + \frac{\text{Sec}[c] \; \text{Sec}[c+d x]^3 \; (5 \,\text{Sin}[c] + 7 \,\text{Sin}[d x])}{35 d} + \frac{\text{Sec}[c] \; \text{Sec}[c+d x]^2 \; (21 \,\text{Sin}[c] + 25 \,\text{Sin}[d x])}{105 d} + \frac{\text{Sec}[c] \; \text{Sec}[c+d x] \; (25 \,\text{Sin}[c] + 63 \,\text{Sin}[d x])}{105 d}\right) - \left(5 \; (1+\text{Cos}[c+d x]) \; \text{Csc}[c] \; \text{HypergeometricPFQ}\left[\left\{\frac{1}{4}, \frac{1}{2}\right\}, \left\{\frac{5}{4}\right\}, \text{Sin}[d x - \text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \text{Sec}[d x - \text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x - \text{ArcTan}[\text{Cot}[c]]]} \sqrt{-\sqrt{1+\text{Cot}[c]^2} \; \text{Sin}[c] \; \text{Sin}[d x - \text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x - \text{ArcTan}[\text{Cot}[c]]]}\right) \Big/ \left(21 d \sqrt{1+\text{Cot}[c]^2}\right) + \frac{1}{10 d} 3 \; (1+\text{Cos}[c+d x]) \; \text{Csc}[c] \; \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2}, -\frac{1}{4}\right\}, \left\{\frac{3}{4}\right\}, \text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]]^2\right] \text{Sin}[d x + \text{ArcTan}[\text{Tan}[c]]] \; \text{Tan}[c]\right) \Big/ \left(\sqrt{1-\text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]]} \sqrt{1+\text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]]} \sqrt{\text{Cos}[c] \; \text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}} \sqrt{1+\text{Tan}[c]^2}\right) - \frac{\frac{\text{Sin}[d x + \text{ArcTan}[\text{Tan}[c]]] \; \text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}} + \frac{2 \,\text{Cos}[c]^2 \, \text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2 + \text{Sin}[c]^2}}{\sqrt{\text{Cos}[c] \; \text{Cos}[d x + \text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}}\right)\right)$$

Problem 359: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^{9/2} \left(a+a \,\text{Sec}[c+d x]\right)^2 \, dx$$

Optimal (type 4, 147 leaves, 10 steps):

$$\frac{32 a^2 \,\text{EllipticE}\left[\frac{1}{2} (c+d x), 2\right]}{15 d}+\frac{20 a^2 \,\text{EllipticF}\left[\frac{1}{2} (c+d x), 2\right]}{21 d}+\frac{20 a^2 \sqrt{\text{Cos}[c+d x]} \,\text{Sin}[c+d x]}{21 d}+\frac{32 a^2 \,\text{Cos}[c+d x]^{3/2} \,\text{Sin}[c+d x]}{45 d}+\frac{4 a^2 \,\text{Cos}[c+d x]^{5/2} \,\text{Sin}[c+d x]}{7 d}+\frac{2 a^2 \,\text{Cos}[c+d x]^{7/2} \,\text{Sin}[c+d x]}{9 d}$$

Result (type 5, 548 leaves):

$$\text{Cos}[c+d\,x]^{5/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2$$
$$\left(-\frac{8\,\text{Cot}[c]}{15\,d}+\frac{23\,\text{Cos}[d\,x]\,\text{Sin}[c]}{84\,d}+\frac{37\,\text{Cos}[2\,d\,x]\,\text{Sin}[2\,c]}{360\,d}+\right.$$
$$\frac{\text{Cos}[3\,d\,x]\,\text{Sin}[3\,c]}{28\,d}+\frac{\text{Cos}[4\,d\,x]\,\text{Sin}[4\,c]}{144\,d}+\frac{23\,\text{Cos}[c]\,\text{Sin}[d\,x]}{84\,d}+$$
$$\left.\frac{37\,\text{Cos}[2\,c]\,\text{Sin}[2\,d\,x]}{360\,d}+\frac{\text{Cos}[3\,c]\,\text{Sin}[3\,d\,x]}{28\,d}+\frac{\text{Cos}[4\,c]\,\text{Sin}[4\,d\,x]}{144\,d}\right)-$$
$$\left(5\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$
$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$
$$\left(21\,d\,\sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{15\,d}4\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 360: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^{7/2}\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2\,dx$$

Optimal (type 4, 121 leaves, 9 steps):

$$\frac{12\,a^2\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{5\,d}+\frac{8\,a^2\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{7\,d}+\frac{8\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\,\text{Sin}[c+d\,x]}{7\,d}+\frac{4\,a^2\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{5\,d}+\frac{2\,a^2\,\text{Cos}[c+d\,x]^{5/2}\,\text{Sin}[c+d\,x]}{7\,d}$$

Result (type 5, 516 leaves):

$$\text{Cos}[c+d\,x]^{5/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\left(-\frac{3\,\text{Cot}[c]}{5\,d}+\frac{17\,\text{Cos}[d\,x]\,\text{Sin}[c]}{56\,d}+\frac{\text{Cos}[2\,d\,x]\,\text{Sin}[2\,c]}{10\,d}+\frac{\text{Cos}[3\,d\,x]\,\text{Sin}[3\,c]}{56\,d}+\frac{17\,\text{Cos}[c]\,\text{Sin}[d\,x]}{56\,d}+\frac{\text{Cos}[2\,c]\,\text{Sin}[2\,d\,x]}{10\,d}+\frac{\text{Cos}[3\,c]\,\text{Sin}[3\,d\,x]}{56\,d}\right)-\frac{1}{7\,d\,\sqrt{1+\text{Cot}[c]^2}}$$

$$2\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,-$$

$$\frac{1}{10\,d}3\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$

$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 361: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^{5/2}\,(a+a\,\text{Sec}[c+d\,x])^2\,dx$$

Optimal (type 4, 95 leaves, 8 steps):

$$\frac{16\,a^2\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{5\,d}+\frac{4\,a^2\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{4\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d}+\frac{2\,a^2\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{5\,d}$$

Result (type 5, 484 leaves):

$$\text{Cos}[c+d\,x]^{5/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\left(-\frac{4\,\text{Cot}[c]}{5\,d}+\frac{\text{Cos}[d\,x]\,\text{Sin}[c]}{3\,d}+\frac{\text{Cos}[2\,d\,x]\,\text{Sin}[2\,c]}{20\,d}+\frac{\text{Cos}[c]\,\text{Sin}[d\,x]}{3\,d}+\frac{\text{Cos}[2\,c]\,\text{Sin}[2\,d\,x]}{20\,d}\right)-$$
$$\frac{1}{3\,d\,\sqrt{1+\text{Cot}[c]^2}}\text{Cos}[c+d\,x]^2\,\text{Csc}[c]$$
$$\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4$$
$$(a+a\,\text{Sec}[c+d\,x])^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}-$$
$$\frac{1}{5\,d}2\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},\,-\frac{1}{4}\right\},\,\left\{\frac{3}{4}\right\},\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 362: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 67 leaves, 7 steps):

$$\frac{4\,a^2\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{d}+\frac{8\,a^2\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a^2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d}$$

Result (type 5, 450 leaves):

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

Problem 364: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sec}[c+d\,x])^2}{\sqrt{\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 91 leaves, 8 steps):

$$-\frac{4\,a^2\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{d}+\frac{8\,a^2\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a^2\,\text{Sin}[c+d\,x]}{3\,d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{4\,a^2\,\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 5, 470 leaves):

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

$$\frac{1}{3\,d\,\sqrt{1+\text{Cot}[c]^2}}2\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4$$

$$(a+a\,\text{Sec}[c+d\,x])^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}+$$

$$\frac{1}{2\,d}\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$

$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 365: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 121 leaves, 9 steps):

$$-\frac{16\,a^2\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{5\,d}+\frac{4\,a^2\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a^2\,\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{5/2}}+\frac{4\,a^2\,\text{Sin}[c+d\,x]}{3\,d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{16\,a^2\,\text{Sin}[c+d\,x]}{5\,d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 5, 503 leaves):

$$\text{Cos}[c+d\,x]^{5/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\left(\frac{4\,\text{Csc}[c]\,\text{Sec}[c]}{5\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[d\,x]}{10\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(3\,\text{Sin}[c]+10\,\text{Sin}[d\,x])}{30\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\,(5\,\text{Sin}[c]+12\,\text{Sin}[d\,x])}{15\,d}\right)-$$

$$\frac{1}{3\,d\,\sqrt{1+\text{Cot}[c]^2}}\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}+$$

$$\frac{1}{5\,d}2\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\,(a+a\,\text{Sec}[c+d\,x])^2\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 366: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a + a \operatorname{Sec}[c + d x])^2}{\operatorname{Cos}[c + d x]^{5/2}} \, dx$$

Optimal (type 4, 147 leaves, 10 steps):

$$-\frac{12 a^2 \operatorname{EllipticE}\left[\frac{1}{2} (c + d x), 2\right]}{5 d} + \frac{8 a^2 \operatorname{EllipticF}\left[\frac{1}{2} (c + d x), 2\right]}{7 d} + \frac{2 a^2 \operatorname{Sin}[c + d x]}{7 d \operatorname{Cos}[c + d x]^{7/2}} + \frac{4 a^2 \operatorname{Sin}[c + d x]}{5 d \operatorname{Cos}[c + d x]^{5/2}} + \frac{8 a^2 \operatorname{Sin}[c + d x]}{7 d \operatorname{Cos}[c + d x]^{3/2}} + \frac{12 a^2 \operatorname{Sin}[c + d x]}{5 d \sqrt{\operatorname{Cos}[c + d x]}}$$

Result (type 5, 531 leaves):

$$\text{Cos}[c+d\,x]^{5/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(a+a\,\text{Sec}[c+d\,x]\right)^2$$
$$\left(\frac{3\,\text{Csc}[c]\,\text{Sec}[c]}{5\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^4\,\text{Sin}[d\,x]}{14\,d}+\right.$$
$$\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\left(7\,\text{Sin}[c]+10\,\text{Sin}[d\,x]\right)}{35\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\left(5\,\text{Sin}[c]+14\,\text{Sin}[d\,x]\right)}{70\,d}+$$
$$\left.\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\left(10\,\text{Sin}[c]+21\,\text{Sin}[d\,x]\right)}{35\,d}\right)-\frac{1}{7\,d\,\sqrt{1+\text{Cot}[c]^2}}$$
$$2\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$
$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(a+a\,\text{Sec}[c+d\,x]\right)^2\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}+$$
$$\frac{1}{10\,d}3\,\text{Cos}[c+d\,x]^2\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(a+a\,\text{Sec}[c+d\,x]\right)^2$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 367: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^{9/2}\left(a+a\,\text{Sec}[c+d\,x]\right)^3\,dx$$

Optimal (type 4, 147 leaves, 17 steps):

$$\frac{68 a^3 \text{EllipticE}\left[\frac{1}{2}(c+d x), 2\right]}{15 d}+\frac{44 a^3 \text{EllipticF}\left[\frac{1}{2}(c+d x), 2\right]}{21 d}+\frac{44 a^3 \sqrt{\text{Cos}[c+d x]} \text{Sin}[c+d x]}{21 d}+\frac{68 a^3 \text{Cos}[c+d x]^{3/2} \text{Sin}[c+d x]}{45 d}+\frac{6 a^3 \text{Cos}[c+d x]^{5/2} \text{Sin}[c+d x]}{7 d}+\frac{2 a^3 \text{Cos}[c+d x]^{7/2} \text{Sin}[c+d x]}{9 d}$$

Result (type 5, 548 leaves):

$$\text{Cos}[c+d x]^{7/2} \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \left(-\frac{17 \text{Cot}[c]}{30 d}+\frac{97 \text{Cos}[d x] \text{Sin}[c]}{336 d}+\frac{73 \text{Cos}[2 d x] \text{Sin}[2 c]}{720 d}+\frac{3 \text{Cos}[3 d x] \text{Sin}[3 c]}{112 d}+\frac{\text{Cos}[4 d x] \text{Sin}[4 c]}{288 d}+\frac{97 \text{Cos}[c] \text{Sin}[d x]}{336 d}+\frac{73 \text{Cos}[2 c] \text{Sin}[2 d x]}{720 d}+\frac{3 \text{Cos}[3 c] \text{Sin}[3 d x]}{112 d}+\frac{\text{Cos}[4 c] \text{Sin}[4 d x]}{288 d}\right)-$$

$$\left(11 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{HypergeometricPFQ}\left[\left\{\frac{1}{4}, \frac{1}{2}\right\}, \left\{\frac{5}{4}\right\}, \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{-\sqrt{1+\text{Cot}[c]^2} \text{Sin}[c] \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}\right) \Big/ \left(42 d \sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{60 d} 17 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3$$

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

Problem 368: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^{7/2} \left(a+a \text{Sec}[c+d x]\right)^3 \, dx$$

Optimal (type 4, 121 leaves, 15 steps):

$$\frac{28 a^3 \text{EllipticE}\left[\frac{1}{2} (c+d x), 2\right]}{5 d}+\frac{52 a^3 \text{EllipticF}\left[\frac{1}{2} (c+d x), 2\right]}{21 d}+\frac{52 a^3 \sqrt{\text{Cos}[c+d x]} \text{Sin}[c+d x]}{21 d}+\frac{6 a^3 \text{Cos}[c+d x]^{3/2} \text{Sin}[c+d x]}{5 d}+\frac{2 a^3 \text{Cos}[c+d x]^{5/2} \text{Sin}[c+d x]}{7 d}$$

Result (type 5, 516 leaves):

$$\text{Cos}[c+d x]^{7/2} \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \left(a+a \text{Sec}[c+d x]\right)^3 \left(-\frac{7 \text{Cot}[c]}{10 d}+\frac{107 \text{Cos}[d x] \text{Sin}[c]}{336 d}+\frac{3 \text{Cos}[2 d x] \text{Sin}[2 c]}{40 d}+\frac{\text{Cos}[3 d x] \text{Sin}[3 c]}{112 d}+\frac{107 \text{Cos}[c] \text{Sin}[d x]}{336 d}+\frac{3 \text{Cos}[2 c] \text{Sin}[2 d x]}{40 d}+\frac{\text{Cos}[3 c] \text{Sin}[3 d x]}{112 d}\right)-$$
$$\left(13 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{HypergeometricPFQ}\left[\left\{\frac{1}{4}, \frac{1}{2}\right\}, \left\{\frac{5}{4}\right\}, \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \left(a+a \text{Sec}[c+d x]\right)^3 \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{-\sqrt{1+\text{Cot}[c]^2} \text{Sin}[c] \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}\right) \Big/$$
$$\left(42 d \sqrt{1+\text{Cot}[c]^2}\right)-\frac{1}{20 d} 7 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \left(a+a \text{Sec}[c+d x]\right)^3$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2}, -\frac{1}{4}\right\}, \left\{\frac{3}{4}\right\}, \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]^2\right] \text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \text{Tan}[c]\right) \Big/ \left(\sqrt{1-\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]} \sqrt{1+\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]} \sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}} \sqrt{1+\text{Tan}[c]^2}\right)-\frac{\frac{\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2 \text{Cos}[c]^2 \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 369: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]^{5/2} \left(a+a \text{Sec}[c+d x]\right)^3 \, dx$$

Optimal (type 4, 91 leaves, 13 steps):

$$\frac{36 a^3 \text{EllipticE}\left[\frac{1}{2} \left(c+d x\right),2\right]}{5 d}+\frac{4 a^3 \text{EllipticF}\left[\frac{1}{2} \left(c+d x\right),2\right]}{d}+\frac{2 a^3 \sqrt{\text{Cos}[c+d x]} \text{Sin}[c+d x]}{d}+\frac{2 a^3 \text{Cos}[c+d x]^{3/2} \text{Sin}[c+d x]}{5 d}$$

Result (type 5, 484 leaves):

$$\text{Cos}[c+d x]^{7/2} \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \left(a+a \text{Sec}[c+d x]\right)^3 \left(-\frac{9 \text{Cot}[c]}{10 d}+\frac{\text{Cos}[d x] \text{Sin}[c]}{4 d}+\frac{\text{Cos}[2 d x] \text{Sin}[2 c]}{40 d}+\frac{\text{Cos}[c] \text{Sin}[d x]}{4 d}+\frac{\text{Cos}[2 c] \text{Sin}[2 d x]}{40 d}\right)-$$
$$\frac{1}{2 d \sqrt{1+\text{Cot}[c]^2}} \text{Cos}[c+d x]^3 \text{Csc}[c] \text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6$$
$$\left(a+a \text{Sec}[c+d x]\right)^3 \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2} \text{Sin}[c] \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}-$$
$$\frac{1}{20 d} 9 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 \left(a+a \text{Sec}[c+d x]\right)^3$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]^2\right] \text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]} \sqrt{1+\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}} \sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2 \text{Cos}[c]^2 \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 370: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 91 leaves, 13 steps):

$$\frac{4\,a^3\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{d}+\frac{20\,a^3\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{3\,d}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}}+\frac{2\,a^3\,\sqrt{\text{Cos}[c+d\,x]}\,\,\text{Sin}[c+d\,x]}{3\,d}$$

Result (type 5, 481 leaves):

$$\text{Cos}[c+d\,x]^{7/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3$$
$$\left(-\frac{(1+3\,\text{Cos}[2\,c])\,\text{Csc}[c]\,\text{Sec}[c]}{8\,d}+\frac{\text{Cos}[d\,x]\,\text{Sin}[c]}{12\,d}+\frac{\text{Cos}[c]\,\text{Sin}[d\,x]}{12\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[d\,x]}{4\,d}\right)-\frac{1}{6\,d\,\sqrt{1+\text{Cot}[c]^2}}$$
$$5\,\text{Cos}[c+d\,x]^3\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$
$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}-$$
$$\frac{1}{4\,d}\text{Cos}[c+d\,x]^3\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 371: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\text{Cos}[c+d\,x]}\,(a+a\,\text{Sec}[c+d\,x])^3\,dx$$

Optimal (type 4, 91 leaves, 13 steps):

$$-\frac{4\,a^3\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{d}+\frac{20\,a^3\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{3\,d}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{3\,d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{6\,a^3\,\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 5, 479 leaves):

$$\mathrm{Cos}[c+d\,x]^{7/2}\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3\,\left(-\frac{\left(-5+\mathrm{Cos}[2\,c]\right)\,\mathrm{Csc}[c]\,\mathrm{Sec}[c]}{8\,d}+\frac{\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Sin}[d\,x]}{12\,d}+\frac{\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]\,\left(\mathrm{Sin}[c]+9\,\mathrm{Sin}[d\,x]\right)}{12\,d}\right)-\frac{1}{6\,d\,\sqrt{1+\mathrm{Cot}[c]^2}}$$
$$5\,\mathrm{Cos}[c+d\,x]^3\,\mathrm{Csc}[c]\,\mathrm{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]^2\right]$$
$$\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3\,\mathrm{Sec}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]\,\sqrt{1-\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\mathrm{Cot}[c]^2}\,\mathrm{Sin}[c]\,\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}\,\sqrt{1+\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}+$$
$$\frac{1}{4\,d}\mathrm{Cos}[c+d\,x]^3\,\mathrm{Csc}[c]\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3$$
$$\left(\left(\mathrm{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]^2\right]\,\mathrm{Sin}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]\right.\right.$$
$$\left.\mathrm{Tan}[c]\right)\Big/\left(\sqrt{1-\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]}\,\sqrt{1+\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]}\right.$$
$$\left.\sqrt{\mathrm{Cos}[c]\,\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]\,\sqrt{1+\mathrm{Tan}[c]^2}}\,\sqrt{1+\mathrm{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\mathrm{Sin}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]\,\mathrm{Tan}[c]}{\sqrt{1+\mathrm{Tan}[c]^2}}+\frac{2\,\mathrm{Cos}[c]^2\,\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]\,\sqrt{1+\mathrm{Tan}[c]^2}}{\mathrm{Cos}[c]^2+\mathrm{Sin}[c]^2}}{\sqrt{\mathrm{Cos}[c]\,\mathrm{Cos}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]\,\sqrt{1+\mathrm{Tan}[c]^2}}}\right)$$

Problem 372: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3}{\sqrt{\mathrm{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 117 leaves, 15 steps):

$$-\frac{36\,a^3\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{5\,d}+\frac{4\,a^3\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{d}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{5/2}}+\frac{2\,a^3\,\text{Sin}[c+d\,x]}{d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{36\,a^3\,\text{Sin}[c+d\,x]}{5\,d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 5, 501 leaves):

$$\text{Cos}[c+d\,x]^{7/2}\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3\left(\frac{9\,\text{Csc}[c]\,\text{Sec}[c]}{10\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[d\,x]}{20\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,(\text{Sin}[c]+5\,\text{Sin}[d\,x])}{20\,d}+\frac{\text{Sec}[c]\,\text{Sec}[c+d\,x]\,(5\,\text{Sin}[c]+18\,\text{Sin}[d\,x])}{20\,d}\right)-\frac{1}{2\,d\,\sqrt{1+\text{Cot}[c]^2}}$$

$$\text{Cos}[c+d\,x]^3\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$
$$\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}+$$
$$\frac{1}{20\,d}9\,\text{Cos}[c+d\,x]^3\,\text{Csc}[c]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\,(a+a\,\text{Sec}[c+d\,x])^3$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\,\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$
$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\left.\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\,\sqrt{1+\text{Tan}[c]^2}\right)-$$
$$\left.\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 373: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 147 leaves, 17 steps):

$$-\frac{28 a^3 \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{5 d}+\frac{52 a^3 \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{21 d}+\frac{2 a^3 \text{Sin}[c+d x]}{7 d \text{Cos}[c+d x]^{7/2}}+\frac{6 a^3 \text{Sin}[c+d x]}{5 d \text{Cos}[c+d x]^{5/2}}+\frac{52 a^3 \text{Sin}[c+d x]}{21 d \text{Cos}[c+d x]^{3/2}}+\frac{28 a^3 \text{Sin}[c+d x]}{5 d \sqrt{\text{Cos}[c+d x]}}$$

Result (type 5, 531 leaves):

$$\text{Cos}[c+d x]^{7/2} \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \left(\frac{7 \text{Csc}[c] \text{Sec}[c]}{10 d}+\frac{\text{Sec}[c] \text{Sec}[c+d x]^4 \text{Sin}[d x]}{28 d}+\frac{\text{Sec}[c] \text{Sec}[c+d x]^3 (5 \text{Sin}[c]+21 \text{Sin}[d x])}{140 d}+\frac{\text{Sec}[c] \text{Sec}[c+d x]^2 (63 \text{Sin}[c]+130 \text{Sin}[d x])}{420 d}+\frac{\text{Sec}[c] \text{Sec}[c+d x] (65 \text{Sin}[c]+147 \text{Sin}[d x])}{210 d}\right)-$$

$$\left(13 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]^2\right] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3 \text{Sec}[d x-\text{ArcTan}[\text{Cot}[c]]] \sqrt{1-\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{-\sqrt{1+\text{Cot}[c]^2} \text{Sin}[c] \text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]} \sqrt{1+\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(42 d \sqrt{1+\text{Cot}[c]^2}\right)+\frac{1}{20 d}7 \text{Cos}[c+d x]^3 \text{Csc}[c] \text{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]^6 (a+a \text{Sec}[c+d x])^3$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]^2\right] \text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]]\right.\right.$$

$$\left.\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]} \sqrt{1+\text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$

$$\left.\sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}} \sqrt{1+\text{Tan}[c]^2}\right)-$$

$$\left.\frac{\frac{\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]] \text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2 \text{Cos}[c]^2 \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c] \text{Cos}[d x+\text{ArcTan}[\text{Tan}[c]]] \sqrt{1+\text{Tan}[c]^2}}}\right)$$

Problem 374: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cos}[c+d\,x]^{5/2}}{a+a\operatorname{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 128 leaves, 9 steps):

$$\frac{21\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]}{5\,a\,d}-\frac{5\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]}{3\,a\,d}-\frac{5\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{Sin}[c+d\,x]}{3\,a\,d}+\frac{7\operatorname{Cos}[c+d\,x]^{3/2}\operatorname{Sin}[c+d\,x]}{5\,a\,d}-\frac{\operatorname{Cos}[c+d\,x]^{3/2}\operatorname{Sin}[c+d\,x]}{d\,(a+a\operatorname{Sec}[c+d\,x])}$$

Result (type 5, 314 leaves):

$$\left(\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\left(\left(2\,i\sqrt{2}\,e^{-i\,(c+d\,x)}\left(63\left(1+e^{2\,i\,(c+d\,x)}\right)+63\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+25\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\operatorname{Sec}[c+d\,x]\right)\Big/\left(d\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)+\left(-96\operatorname{Cot}[c]-30\operatorname{Csc}[c]-20\operatorname{Cos}[d\,x]\operatorname{Sin}[c]+6\operatorname{Cos}[2\,d\,x]\operatorname{Sin}[2\,c]-30\operatorname{Sec}\left[\frac{c}{2}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d\,x)\right]\operatorname{Sin}\left[\frac{d\,x}{2}\right]-20\operatorname{Cos}[c]\operatorname{Sin}[d\,x]+6\operatorname{Cos}[2\,c]\operatorname{Sin}[2\,d\,x]\right)\Big/\left(d\sqrt{\operatorname{Cos}[c+d\,x]}\right)\right)\right)\Big/\left(15\,a\,(1+\operatorname{Sec}[c+d\,x])\right)$$

Problem 375: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cos}[c+d\,x]^{3/2}}{a+a\operatorname{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 100 leaves, 8 steps):

$$-\frac{3\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]}{a\,d}+\frac{5\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]}{3\,a\,d}+\frac{5\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{Sin}[c+d\,x]}{3\,a\,d}-\frac{\sqrt{\operatorname{Cos}[c+d\,x]}\,\operatorname{Sin}[c+d\,x]}{d\,(a+a\operatorname{Sec}[c+d\,x])}$$

Result (type 5, 292 leaves):

$$\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(-\left(\left(2\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\left(9\left(1+e^{2\,i\,(c+d\,x)}\right)+9\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+5\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\text{Sec}[c+d\,x]\right)\Big/\left(d\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)\right)+\left(12\,\text{Cot}[c]+6\,\text{Csc}[c]+4\,\text{Cos}[d\,x]\,\text{Sin}[c]+6\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]\text{Sin}\left[\frac{d\,x}{2}\right]+4\,\text{Cos}[c]\,\text{Sin}[d\,x]\right)\Big/\left(d\,\sqrt{\text{Cos}[c+d\,x]}\right)\right)\right)\Big/\left(3\,a\left(1+\text{Sec}[c+d\,x]\right)\right)$$

Problem 376: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 72 leaves, 7 steps):

$$\frac{3\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),2\right]}{a\,d}-\frac{\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),2\right]}{a\,d}-\frac{\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\left(a+a\,\text{Sec}[c+d\,x]\right)}$$

Result (type 5, 270 leaves):

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

Problem 377: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Cos}[c+d\,x]}\,\left(a+a\,\text{Sec}[c+d\,x]\right)}\,dx$$

Optimal (type 4, 70 leaves, 7 steps):

$$-\frac{\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{a d}+\frac{\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 5, 262 leaves):

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

Problem 378: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 70 leaves, 7 steps):

$$\frac{\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{a d}-\frac{\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])}$$

Result (type 5, 263 leaves):

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

Problem 379: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Cos}[c+d x]^{5/2} \left(a+a \,\text{Sec}[c+d x]\right)} \, dx$$

Optimal (type 4, 96 leaves, 8 steps):

$$-\frac{3\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a d}-\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{a d}+\frac{3\,\text{Sin}[c+d x]}{a d \sqrt{\text{Cos}[c+d x]}}-\frac{\text{Sin}[c+d x]}{d\,\text{Cos}[c+d x]^{3/2}\left(a+a\,\text{Sec}[c+d x]\right)}$$

Result (type 5, 303 leaves):

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

Problem 380: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Cos}[c+d x]^{7/2} \left(a+a \,\text{Sec}[c+d x]\right)} \, dx$$

Optimal (type 4, 124 leaves, 9 steps):

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

Result (type 5, 338 leaves):

$$\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \left(-\left(\left(\left(10\,\mathrm{Cos}\left[\frac{1}{2}(c-d x)\right]+8\,\mathrm{Cos}\left[\frac{1}{2}(3 c+d x)\right]+4\,\mathrm{Cos}\left[\frac{1}{2}(c+3 d x)\right]+5\,\mathrm{Cos}\left[\frac{1}{2}(5 c+3 d x)\right]+9\,\mathrm{Cos}\left[\frac{1}{2}(3 c+5 d x)\right]\right)\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(4 d\,\mathrm{Cos}[c+d x]^{5/2}\right)\right)+\left(2 i \sqrt{2}\, e^{-i (c+d x)}\left(9\left(1+e^{2 i (c+d x)}\right)+9\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]-5\, e^{i (c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right]\right)\mathrm{Sec}[c+d x]\right)\Big/\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i (c+d x)}\left(1+e^{2 i (c+d x)}\right)}\right)\right)\right)\Big/\left(3 a\left(1+\mathrm{Sec}[c+d x]\right)\right)$$

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

$$\int \frac{\mathrm{Cos}[c+d x]^{5/2}}{\left(a+a\,\mathrm{Sec}[c+d x]\right)^2}\, dx$$

Optimal (type 4, 160 leaves, 10 steps):

$$\frac{56\,\mathrm{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{5 a^2 d}-\frac{5\,\mathrm{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{a^2 d}-\frac{5\sqrt{\mathrm{Cos}[c+d x]}\,\mathrm{Sin}[c+d x]}{a^2 d}+\frac{56\,\mathrm{Cos}[c+d x]^{3/2}\,\mathrm{Sin}[c+d x]}{15 a^2 d}-\frac{3\,\mathrm{Cos}[c+d x]^{3/2}\,\mathrm{Sin}[c+d x]}{a^2 d\left(1+\mathrm{Sec}[c+d x]\right)}-\frac{\mathrm{Cos}[c+d x]^{3/2}\,\mathrm{Sin}[c+d x]}{3 d\left(a+a\,\mathrm{Sec}[c+d x]\right)^2}$$

Result (type 5, 366 leaves):

$$\frac{1}{5 a^2\left(1+\mathrm{Sec}[c+d x]\right)^2}\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]^4\left(\left(4 i\sqrt{2}\, e^{-i (c+d x)}\left(56\left(1+e^{2 i (c+d x)}\right)+56\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]+25\, e^{i (c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right]\right)\mathrm{Sec}[c+d x]^2\right)\Big/\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i (c+d x)}\left(1+e^{2 i (c+d x)}\right)}\right)+\left(2\left(-216\,\mathrm{Cot}[c]-120\,\mathrm{Csc}[c]-40\,\mathrm{Cos}[d x]\,\mathrm{Sin}[c]+6\,\mathrm{Cos}[2 d x]\,\mathrm{Sin}[2 c]-120\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]\mathrm{Sin}\left[\frac{d x}{2}\right]+5\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^3\mathrm{Sin}\left[\frac{d x}{2}\right]-40\,\mathrm{Cos}[c]\,\mathrm{Sin}[d x]+6\,\mathrm{Cos}[2 c]\,\mathrm{Sin}[2 d x]+5\,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{c}{2}\right]\right)\right)\Big/\left(3 d\,\mathrm{Cos}[c+d x]^{3/2}\right)\right)$$

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

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

Optimal (type 4, 138 leaves, 9 steps):

$$-\frac{7\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a^2 d}+\frac{10\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{3 a^2 d}+\frac{10\sqrt{\text{Cos}[c+d x]}\,\text{Sin}[c+d x]}{3 a^2 d}-\frac{7\sqrt{\text{Cos}[c+d x]}\,\text{Sin}[c+d x]}{3 a^2 d\,(1+\text{Sec}[c+d x])}-\frac{\sqrt{\text{Cos}[c+d x]}\,\text{Sin}[c+d x]}{3 d\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 341 leaves):

$$\frac{1}{3 a^2 (1+\text{Sec}[c+d x])^2}\text{Cos}\left[\frac{1}{2}(c+d x)\right]^4\left(-\left(\left(4 i\sqrt{2}\,e^{-i(c+d x)}\left(21\left(1+e^{2 i(c+d x)}\right)+21\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i(c+d x)}\right]+10\,e^{i(c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i(c+d x)}\right]\right)\text{Sec}[c+d x]^2\right)\Big/\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i(c+d x)}\left(1+e^{2 i(c+d x)}\right)}\right)\right)+\frac{1}{d\,\text{Cos}[c+d x]^{3/2}}\left(48\,\text{Cot}[c]+36\,\text{Csc}[c]+8\,\text{Cos}[d x]\,\text{Sin}[c]+36\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]\text{Sin}\left[\frac{d x}{2}\right]-2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^3\text{Sin}\left[\frac{d x}{2}\right]+8\,\text{Cos}[c]\,\text{Sin}[d x]-2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{c}{2}\right]\right)\right)$$

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

$$\int \frac{\sqrt{\text{Cos}[c+d x]}}{(a+a\,\text{Sec}[c+d x])^2}\,dx$$

Optimal (type 4, 112 leaves, 8 steps):

$$\frac{4\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a^2 d}-\frac{5\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{3 a^2 d}-\frac{5\,\text{Sin}[c+d x]}{3 a^2 d\sqrt{\text{Cos}[c+d x]}\,(1+\text{Sec}[c+d x])}-\frac{\text{Sin}[c+d x]}{3 d\sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 374 leaves):

$$\left(4\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(12\,\left(1+e^{2\,i\,(c+d\,x)}\right)+12\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+5\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\;\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\mathrm{Sec}[c+d\,x]^2\right)\Big/\left(3\,d\,\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\;(a+a\,\mathrm{Sec}[c+d\,x])^2\right)+$$

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

Problem 384: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\mathrm{Cos}[c+d\,x]}\;(a+a\,\mathrm{Sec}[c+d\,x])^2}\,dx$$

Optimal (type 4, 109 leaves, 8 steps):

$$-\frac{\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{a^2\,d}+\frac{2\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{3\,a^2\,d}+\frac{\mathrm{Sin}[c+d\,x]}{a^2\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\;(1+\mathrm{Sec}[c+d\,x])}-\frac{\mathrm{Sin}[c+d\,x]}{3\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\,(a+a\,\mathrm{Sec}[c+d\,x])^2}$$

Result (type 5, 656 leaves):

$$-\frac{1}{2\,(a+a\,\mathrm{Sec}[c+d\,x])^2}\,\mathrm{i}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+d\,x]^2$$
$$\Bigg(\Bigg(2\,e^{2\,\mathrm{i}\,d\,x}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{3}{4},\frac{7}{4},-e^{2\,\mathrm{i}\,d\,x}\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2\right]$$
$$\sqrt{e^{-\mathrm{i}\,d\,x}\left(2\,(1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Cos}[c]+2\,\mathrm{i}\,(-1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Sin}[c]\right)}$$
$$\sqrt{1+e^{2\,\mathrm{i}\,d\,x}\,\mathrm{Cos}[2\,c]+\mathrm{i}\,e^{2\,\mathrm{i}\,d\,x}\,\mathrm{Sin}[2\,c]}\Bigg)\Big/$$
$$\left(3\,\mathrm{i}\,d\,(1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Cos}[c]-3\,d\,(-1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Sin}[c]\right)-$$
$$\Bigg(2\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,\mathrm{i}\,d\,x}\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2\right]$$
$$\sqrt{e^{-\mathrm{i}\,d\,x}\left(2\,(1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Cos}[c]+2\,\mathrm{i}\,(-1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Sin}[c]\right)}$$
$$\sqrt{1+e^{2\,\mathrm{i}\,d\,x}\,\mathrm{Cos}[2\,c]+\mathrm{i}\,e^{2\,\mathrm{i}\,d\,x}\,\mathrm{Sin}[2\,c]}\Bigg)\Big/$$
$$\left(-\mathrm{i}\,d\,(1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Cos}[c]+d\,(-1+e^{2\,\mathrm{i}\,d\,x})\,\mathrm{Sin}[c]\right)\Bigg)-$$
$$\Bigg(4\,\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\mathrm{Csc}\left[\frac{c}{2}\right]\mathrm{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]^2\right]$$
$$\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}[c+d\,x]^2$$
$$\mathrm{Sec}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]\,\sqrt{1-\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\mathrm{Cot}[c]^2}\,\mathrm{Sin}[c]\,\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}$$
$$\sqrt{1+\mathrm{Sin}[d\,x-\mathrm{ArcTan}[\mathrm{Cot}[c]]]}\Bigg)\Big/$$
$$\left(3\,d\,\sqrt{1+\mathrm{Cot}[c]^2}\,(a+a\,\mathrm{Sec}[c+d\,x])^2\right)+$$
$$\Bigg(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\Bigg(\frac{4\,\mathrm{Csc}[c]}{d}+\frac{4\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{d}-\frac{2\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^3\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{3\,d}-$$
$$\frac{2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\mathrm{Tan}\left[\frac{c}{2}\right]}{3\,d}\Bigg)\Bigg)\Big/\left(\mathrm{Cos}[c+d\,x]^{3/2}\,(a+a\,\mathrm{Sec}[c+d\,x])^2\right)$$

Problem 386: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Cos}[c+d\,x]^{5/2}\,(a+a\,\mathrm{Sec}[c+d\,x])^2}\,dx$$

Optimal (type 4, 109 leaves, 8 steps):

$$\frac{\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a^2 d}+\frac{2\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{3 a^2 d}-\frac{\text{Sin}[c+d x]}{a^2 d \sqrt{\text{Cos}[c+d x]}\,(1+\text{Sec}[c+d x])}-\frac{\text{Sin}[c+d x]}{3 d\,\text{Cos}[c+d x]^{3/2}\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 370 leaves):

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

Problem 387: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Cos}[c+d x]^{7/2}\,(a+a\,\text{Sec}[c+d x])^2}\,dx$$

Optimal (type 4, 136 leaves, 9 steps):

$$-\frac{4\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{a^2 d}-\frac{5\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{3 a^2 d}+\frac{4\,\text{Sin}[c+d x]}{a^2 d\sqrt{\text{Cos}[c+d x]}}-\frac{5\,\text{Sin}[c+d x]}{3 a^2 d\,\text{Cos}[c+d x]^{3/2}\,(1+\text{Sec}[c+d x])}-\frac{\text{Sin}[c+d x]}{3 d\,\text{Cos}[c+d x]^{5/2}\,(a+a\,\text{Sec}[c+d x])^2}$$

Result (type 5, 393 leaves):

$$-\left(\left(4\,\mathrm{i}\,\sqrt{2}\;e^{-\mathrm{i}\,(c+d\,x)}\,\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(12\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)+12\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\;\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,\mathrm{i}\,(c+d\,x)}\right]-5\,e^{\mathrm{i}\,(c+d\,x)}\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\;\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)\mathrm{Sec}[c+d\,x]^2\right)\Big/\left(3\,d\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{e^{-\mathrm{i}\,(c+d\,x)}\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)}\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2\right)\right)+$$

$$\left(\mathrm{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\left(\frac{8\,\mathrm{Cot}\left[\frac{c}{2}\right]\,\mathrm{Sec}[c]}{d}+\frac{8\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{d}+\frac{2\,\mathrm{Sec}\left[\frac{c}{2}\right]\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^3\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]}{3\,d}+\frac{8\,\mathrm{Sec}[c]\,\mathrm{Sec}[c+d\,x]\,\mathrm{Sin}[d\,x]}{d}+\frac{2\,\mathrm{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\,\mathrm{Tan}\left[\frac{c}{2}\right]}{3\,d}\right)\right)\Big/\left(\mathrm{Cos}[c+d\,x]^{3/2}\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2\right)$$

Problem 388: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Cos}[c+d\,x]^{9/2}\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2}\,dx$$

Optimal (type 4, 162 leaves, 10 steps):

$$\frac{7\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{a^2\,d}+\frac{10\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{3\,a^2\,d}+\frac{10\,\mathrm{Sin}[c+d\,x]}{3\,a^2\,d\,\mathrm{Cos}[c+d\,x]^{3/2}}-\frac{7\,\mathrm{Sin}[c+d\,x]}{a^2\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}}-\frac{7\,\mathrm{Sin}[c+d\,x]}{3\,a^2\,d\,\mathrm{Cos}[c+d\,x]^{5/2}\left(1+\mathrm{Sec}[c+d\,x]\right)}-\frac{\mathrm{Sin}[c+d\,x]}{3\,d\,\mathrm{Cos}[c+d\,x]^{7/2}\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2}$$

Result (type 5, 372 leaves):

$$\frac{1}{3\,a^2\,(1+\text{Sec}[c+d\,x])^2}\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^4$$
$$\left(-\left(\left(\left(82\,\text{Cos}\left[\frac{1}{2}\,(c-d\,x)\right]+65\,\text{Cos}\left[\frac{1}{2}\,(3\,c+d\,x)\right]+68\,\text{Cos}\left[\frac{1}{2}\,(c+3\,d\,x)\right]+37\,\text{Cos}\left[\frac{1}{2}\,(5\,c+3\,d\,x)\right]+\right.\right.\right.\right.$$
$$\left.53\,\text{Cos}\left[\frac{1}{2}\,(3\,c+5\,d\,x)\right]+10\,\text{Cos}\left[\frac{1}{2}\,(7\,c+5\,d\,x)\right]+21\,\text{Cos}\left[\frac{1}{2}\,(5\,c+7\,d\,x)\right]\right)$$
$$\left.\left.\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^3\right)\Big/\left(8\,d\,\text{Cos}[c+d\,x]^{7/2}\right)\right)+$$
$$\left(4\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\left(21\,\left(1+e^{2\,i\,(c+d\,x)}\right)+21\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\right.\right.$$
$$\text{Hypergeometric2F1}\left[-\frac{1}{4},\,\frac{1}{2},\,\frac{3}{4},\,-e^{2\,i\,(c+d\,x)}\right]-$$
$$\left.10\,e^{i\,(c+d\,x)}\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\,\frac{1}{2},\,\frac{5}{4},\,-e^{2\,i\,(c+d\,x)}\right]\right)$$
$$\left.\text{Sec}[c+d\,x]^2\right)\Big/\left(d\,\left(-1+e^{2\,i\,c}\right)\,\sqrt{e^{-i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)\Big)$$

Problem 389: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Cos}[c+d\,x]^{5/2}}{(a+a\,\text{Sec}[c+d\,x])^3}\,dx$$

Optimal (type 4, 207 leaves, 11 steps):

$$\frac{231\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{10\,a^3\,d}-\frac{21\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]}{2\,a^3\,d}-$$
$$\frac{21\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,a^3\,d}+\frac{77\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{10\,a^3\,d}-$$
$$\frac{\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{5\,d\,(a+a\,\text{Sec}[c+d\,x])^3}-\frac{4\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{5\,a\,d\,(a+a\,\text{Sec}[c+d\,x])^2}-\frac{63\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{10\,d\,(a^3+a^3\,\text{Sec}[c+d\,x])}$$

Result (type 5, 391 leaves):

$$\frac{1}{5\,a^3\,d\,\left(1+\text{Sec}[c+d\,x]\right)^3}\,2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^6\left(\left(42\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\left(11\,\left(1+e^{2\,i\,(c+d\,x)}\right)+11\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\right.\right.\right.$$
$$\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+5\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)$$
$$\left.\left.\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\text{Sec}[c+d\,x]^3\right)\Big/$$
$$\left(\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)+\frac{1}{\text{Cos}[c+d\,x]^{5/2}}$$
$$\left(-264\,\text{Cot}[c]-198\,\text{Csc}[c]+\frac{1}{16}\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\left(-1210\,\text{Sin}\left[\frac{d\,x}{2}\right]+770\,\text{Sin}\left[c+\frac{d\,x}{2}\right]-\right.\right.$$
$$840\,\text{Sin}\left[c+\frac{3\,d\,x}{2}\right]+150\,\text{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]-238\,\text{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]-40\,\text{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]-$$
$$\left.\left.\left.5\,\text{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]-5\,\text{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]+\text{Sin}\left[4\,c+\frac{9\,d\,x}{2}\right]+\text{Sin}\left[5\,c+\frac{9\,d\,x}{2}\right]\right)\right)\right)$$

Problem 390: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 181 leaves, 10 steps):

$$-\frac{119\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{10\,a^3\,d}+\frac{11\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{2\,a^3\,d}+\frac{11\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,a^3\,d}-$$
$$\frac{\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{5\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^3}-\frac{2\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,a\,d\,\left(a+a\,\text{Sec}[c+d\,x]\right)^2}-\frac{119\,\sqrt{\text{Cos}[c+d\,x]}\,\text{Sin}[c+d\,x]}{30\,d\,\left(a^3+a^3\,\text{Sec}[c+d\,x]\right)}$$

Result (type 5, 375 leaves):

$$\frac{1}{5\,a^3\,\left(1+\mathrm{Sec}[c+d\,x]\right)^3}\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^6\left(-\left(\left(4\,\mathrm{i}\,\sqrt{2}\,e^{-\mathrm{i}\,(c+d\,x)}\left(119\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)+119\,\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,\mathrm{i}\,(c+d\,x)}\right]+55\,e^{\mathrm{i}\,(c+d\,x)}\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{1+e^{2\,\mathrm{i}\,(c+d\,x)}}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)\mathrm{Sec}[c+d\,x]^3\right)\Big/\left(d\,\left(-1+e^{2\,\mathrm{i}\,c}\right)\sqrt{e^{-\mathrm{i}\,(c+d\,x)}\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)}\right)\right)+\left(720\,\mathrm{Cot}[c]+708\,\mathrm{Csc}[c]+\frac{1}{4}\,\mathrm{Sec}\left[\frac{c}{2}\right]\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\left(1061\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]-709\,\mathrm{Sin}\left[c+\frac{d\,x}{2}\right]+715\,\mathrm{Sin}\left[c+\frac{3\,d\,x}{2}\right]-170\,\mathrm{Sin}\left[2\,c+\frac{3\,d\,x}{2}\right]+202\,\mathrm{Sin}\left[2\,c+\frac{5\,d\,x}{2}\right]+25\,\mathrm{Sin}\left[3\,c+\frac{5\,d\,x}{2}\right]+5\,\mathrm{Sin}\left[3\,c+\frac{7\,d\,x}{2}\right]+5\,\mathrm{Sin}\left[4\,c+\frac{7\,d\,x}{2}\right]\right)\right)\Big/\left(3\,d\,\mathrm{Cos}[c+d\,x]^{5/2}\right)\right)$$

Problem 391: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Cos}[c+d\,x]}}{\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3}\,dx$$

Optimal (type 4, 155 leaves, 9 steps):

$$\frac{49\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{10\,a^3\,d}-\frac{13\,\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{6\,a^3\,d}-\frac{\mathrm{Sin}[c+d\,x]}{5\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^3}-\frac{8\,\mathrm{Sin}[c+d\,x]}{15\,a\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\left(a+a\,\mathrm{Sec}[c+d\,x]\right)^2}-\frac{13\,\mathrm{Sin}[c+d\,x]}{6\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\left(a^3+a^3\,\mathrm{Sec}[c+d\,x]\right)}$$

Result (type 5, 357 leaves):

$$\frac{1}{15\,a^3\,(1+\text{Sec}[c+d\,x])^3}\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^6\left(-\left(\left(\left(806\,\text{Cos}\left[\frac{1}{2}(c-d\,x)\right]+664\,\text{Cos}\left[\frac{1}{2}(3\,c+d\,x)\right]+470\,\text{Cos}\left[\frac{1}{2}(c+3\,d\,x)\right]+265\,\text{Cos}\left[\frac{1}{2}(5\,c+3\,d\,x)\right]+117\,\text{Cos}\left[\frac{1}{2}(3\,c+5\,d\,x)\right]+30\,\text{Cos}\left[\frac{1}{2}(7\,c+5\,d\,x)\right]\right)\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5\right)\Big/\left(8\,d\,\text{Cos}[c+d\,x]^{5/2}\right)\right)+\left(4\,i\sqrt{2}\,e^{-i\,(c+d\,x)}\left(147\left(1+e^{2\,i\,(c+d\,x)}\right)+147\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]+65\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\right)\text{Sec}[c+d\,x]^3\right)\Big/\left(d\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)\right)$$

Problem 392: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 155 leaves, 9 steps):

$$-\frac{9\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]}{10\,a^3\,d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]}{2\,a^3\,d}-\frac{\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{3/2}\,(a+a\,\text{Sec}[c+d\,x])^3}+\frac{2\,\text{Sin}[c+d\,x]}{5\,a\,d\,\sqrt{\text{Cos}[c+d\,x]}\,(a+a\,\text{Sec}[c+d\,x])^2}+\frac{\text{Sin}[c+d\,x]}{2\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\left(a^3+a^3\,\text{Sec}[c+d\,x]\right)}$$

Result (type 5, 721 leaves):

$$-\frac{1}{10\,(a+a\,\text{Sec}[c+d\,x])^3}\,9\,\mathrm{i}\,\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+d\,x]^3$$

$$\left(\left(2\,e^{2\,\mathrm{i}\,d\,x}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{3}{4},\frac{7}{4},-e^{2\,\mathrm{i}\,d\,x}\,(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c])^2\right]\right.\right.$$

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

$$\left.\sqrt{1+e^{2\,\mathrm{i}\,d\,x}\,\text{Cos}[2\,c]+\mathrm{i}\,e^{2\,\mathrm{i}\,d\,x}\,\text{Sin}[2\,c]}\right)\Big/$$

$$\left(3\,\mathrm{i}\,d\left(1+e^{2\,\mathrm{i}\,d\,x}\right)\text{Cos}[c]-3\,d\left(-1+e^{2\,\mathrm{i}\,d\,x}\right)\text{Sin}[c]\right)-$$

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

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

$$\left.\sqrt{1+e^{2\,\mathrm{i}\,d\,x}\,\text{Cos}[2\,c]+\mathrm{i}\,e^{2\,\mathrm{i}\,d\,x}\,\text{Sin}[2\,c]}\right)\Big/$$

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

$$\left(2\,\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$

$$\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+d\,x]^3$$

$$\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]$$

$$\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\left.\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$

$$\left(d\,\sqrt{1+\text{Cot}[c]^2}\,(a+a\,\text{Sec}[c+d\,x])^3\right)+$$

$$\left(\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\left(\frac{36\,\text{Csc}[c]}{5\,d}+\frac{36\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}-\frac{12\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^3\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}+\right.\right.$$

$$\left.\left.\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^5\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}-\frac{12\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{5\,d}+\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\text{Tan}\left[\frac{c}{2}\right]}{5\,d}\right)\right)\Big/$$

$$\left(\text{Cos}[c+d\,x]^{5/2}\,(a+a\,\text{Sec}[c+d\,x])^3\right)$$

Problem 393: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 155 leaves, 9 steps):

$$-\frac{\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{10 a^3 d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{6 a^3 d}+\frac{\text{Sin}[c+d x]}{5 d\,\text{Cos}[c+d x]^{3/2}\,(a+a\,\text{Sec}[c+d x])^3}-\frac{\text{Sin}[c+d x]}{15 a d\sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])^2}+\frac{\text{Sin}[c+d x]}{6 d\sqrt{\text{Cos}[c+d x]}\,(a^3+a^3\,\text{Sec}[c+d x])}$$

Result (type 5, 342 leaves):

$$\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^6\left(\left(\left(14\,\text{Cos}\left[\frac{1}{2}(c-d x)\right]+16\,\text{Cos}\left[\frac{1}{2}(3 c+d x)\right]+20\,\text{Cos}\left[\frac{1}{2}(c+3 d x)\right]-5\,\text{Cos}\left[\frac{1}{2}(5 c+3 d x)\right]+3\,\text{Cos}\left[\frac{1}{2}(3 c+5 d x)\right]\right)\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\right)\Big/\left(8 d\,\text{Cos}[c+d x]^{5/2}\right)-\left(4 i\sqrt{2}\,e^{-i(c+d x)}\left(3\left(1+e^{2 i(c+d x)}\right)+3\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i(c+d x)}\right]+5 e^{i(c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i(c+d x)}\right]\right)\text{Sec}[c+d x]^3\right)\Big/\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i(c+d x)}\left(1+e^{2 i(c+d x)}\right)}\right)\right)\right)\Big/\left(15 a^3\,(1+\text{Sec}[c+d x])^3\right)$$

Problem 394: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cos}[c+d x]^{5/2}\,(a+a\,\text{Sec}[c+d x])^3}\,dx$$

Optimal (type 4, 155 leaves, 9 steps):

$$\frac{\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{10 a^3 d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{6 a^3 d}-\frac{\text{Sin}[c+d x]}{5 d\,\text{Cos}[c+d x]^{3/2}\,(a+a\,\text{Sec}[c+d x])^3}-\frac{4\,\text{Sin}[c+d x]}{15 a d\sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])^2}+\frac{\text{Sin}[c+d x]}{6 d\sqrt{\text{Cos}[c+d x]}\,(a^3+a^3\,\text{Sec}[c+d x])}$$

Result (type 5, 342 leaves):

$$\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]^6\right.$$
$$\left(-\left(\left(\left(4\,\text{Cos}\left[\frac{1}{2}(c-d x)\right]+26\,\text{Cos}\left[\frac{1}{2}(3 c+d x)\right]+10\,\text{Cos}\left[\frac{1}{2}(c+3 d x)\right]+5\,\text{Cos}\left[\frac{1}{2}(5 c+3 d x)\right]+\right.\right.\right.\right.$$
$$\left.\left.3\,\text{Cos}\left[\frac{1}{2}(3 c+5 d x)\right]\right)\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\right)\Big/\left(8\,d\,\text{Cos}[c+d x]^{5/2}\right)\Big)+$$
$$\left(4\,i\sqrt{2}\,e^{-i(c+d x)}\left(3\left(1+e^{2 i(c+d x)}\right)+3\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i(c+d x)}}\right.\right.$$
$$\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i(c+d x)}\right]-5\,e^{i(c+d x)}\left(-1+e^{2 i c}\right)$$
$$\left.\sqrt{1+e^{2 i(c+d x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i(c+d x)}\right]\right)\text{Sec}[c+d x]^3\Big)\Big/$$
$$\left.\left.\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i(c+d x)}\left(1+e^{2 i(c+d x)}\right)}\right)\right)\right)\Big/\left(15\,a^3\left(1+\text{Sec}[c+d x]\right)^3\right)$$

Problem 395: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cos}[c+d x]^{7/2}\left(a+a\,\text{Sec}[c+d x]\right)^3}\,dx$$

Optimal (type 4, 155 leaves, 9 steps):

$$\frac{9\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{10\,a^3\,d}+\frac{\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{2\,a^3\,d}-\frac{\text{Sin}[c+d x]}{5\,d\,\text{Cos}[c+d x]^{5/2}\left(a+a\,\text{Sec}[c+d x]\right)^3}-$$
$$\frac{2\,\text{Sin}[c+d x]}{5\,a\,d\,\text{Cos}[c+d x]^{3/2}\left(a+a\,\text{Sec}[c+d x]\right)^2}-\frac{9\,\text{Sin}[c+d x]}{10\,d\sqrt{\text{Cos}[c+d x]}\left(a^3+a^3\,\text{Sec}[c+d x]\right)}$$

Result (type 5, 721 leaves):

$$\frac{1}{10\left(a+a\,\text{Sec}[c+d\,x]\right)^3}\,9\,i\,\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+d\,x]^3$$
$$\left(\left(2\,e^{2\,i\,d\,x}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{3}{4},\frac{7}{4},-e^{2\,i\,d\,x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\right.\right.$$
$$\sqrt{e^{-i\,d\,x}\left(2\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]+2\,i\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)}$$
$$\left.\sqrt{1+e^{2\,i\,d\,x}\,\text{Cos}[2\,c]+i\,e^{2\,i\,d\,x}\,\text{Sin}[2\,c]}\right)\Big/$$
$$\left(3\,i\,d\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]-3\,d\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)-$$
$$\left(2\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,d\,x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\right.$$
$$\sqrt{e^{-i\,d\,x}\left(2\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]+2\,i\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)}$$
$$\left.\sqrt{1+e^{2\,i\,d\,x}\,\text{Cos}[2\,c]+i\,e^{2\,i\,d\,x}\,\text{Sin}[2\,c]}\right)\Big/$$
$$\left.\left(-i\,d\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]+d\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)\right)-$$
$$\left(2\,\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\text{Csc}\left[\frac{c}{2}\right]\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$
$$\text{Sec}\left[\frac{c}{2}\right]\text{Sec}[c+d\,x]^3\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]$$
$$\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\left.\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$
$$\left(d\sqrt{1+\text{Cot}[c]^2}\left(a+a\,\text{Sec}[c+d\,x]\right)^3\right)+$$
$$\left(\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^6\left(-\frac{36\,\text{Csc}[c]}{5\,d}-\frac{36\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}-\frac{8\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^3\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}-\right.\right.$$
$$\left.\left.\frac{2\,\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^5\text{Sin}\left[\frac{d\,x}{2}\right]}{5\,d}-\frac{8\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2\text{Tan}\left[\frac{c}{2}\right]}{5\,d}-\frac{2\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^4\text{Tan}\left[\frac{c}{2}\right]}{5\,d}\right)\right)\Big/$$
$$\left(\text{Cos}[c+d\,x]^{5/2}\left(a+a\,\text{Sec}[c+d\,x]\right)^3\right)$$

Problem 396: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cos}[c+d\,x]^{9/2}\left(a+a\,\text{Sec}[c+d\,x]\right)^3}\,dx$$

Optimal (type 4, 181 leaves, 10 steps):

$$-\frac{49\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]}{10\,a^3\,d}-\frac{13\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]}{6\,a^3\,d}+\frac{49\,\text{Sin}[c+d\,x]}{10\,a^3\,d\,\sqrt{\text{Cos}[c+d\,x]}}-\frac{\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{7/2}\,(a+a\,\text{Sec}[c+d\,x])^3}-\frac{8\,\text{Sin}[c+d\,x]}{15\,a\,d\,\text{Cos}[c+d\,x]^{5/2}\,(a+a\,\text{Sec}[c+d\,x])^2}-\frac{13\,\text{Sin}[c+d\,x]}{6\,d\,\text{Cos}[c+d\,x]^{3/2}\,(a^3+a^3\,\text{Sec}[c+d\,x])}$$

Result (type 5, 372 leaves):

$$\frac{1}{15\,a^3\,(1+\text{Sec}[c+d\,x])^3}\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^6\Bigg(\Bigg(\Bigg(1284\,\text{Cos}\left[\frac{1}{2}(c-d\,x)\right]+921\,\text{Cos}\left[\frac{1}{2}(3\,c+d\,x)\right]+1243\,\text{Cos}\left[\frac{1}{2}(c+3\,d\,x)\right]+374\,\text{Cos}\left[\frac{1}{2}(5\,c+3\,d\,x)\right]+670\,\text{Cos}\left[\frac{1}{2}(3\,c+5\,d\,x)\right]+65\,\text{Cos}\left[\frac{1}{2}(7\,c+5\,d\,x)\right]+147\,\text{Cos}\left[\frac{1}{2}(5\,c+7\,d\,x)\right]\Bigg)\,\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5\Bigg)\Big/\left(16\,d\,\text{Cos}[c+d\,x]^{7/2}\right)-\Bigg(4\,i\,\sqrt{2}\,e^{-i\,(c+d\,x)}\,\Bigg(147\,\left(1+e^{2\,i\,(c+d\,x)}\right)+147\,\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2\,i\,(c+d\,x)}\right]-65\,e^{i\,(c+d\,x)}\left(-1+e^{2\,i\,c}\right)\sqrt{1+e^{2\,i\,(c+d\,x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]\Bigg)\,\text{Sec}[c+d\,x]^3\Bigg)\Big/\left(d\left(-1+e^{2\,i\,c}\right)\sqrt{e^{-i\,(c+d\,x)}\left(1+e^{2\,i\,(c+d\,x)}\right)}\right)\Bigg)$$

Problem 397: Result unnecessarily involves higher level functions.

$$\int\frac{1}{\text{Cos}[c+d\,x]^{11/2}\,(a+a\,\text{Sec}[c+d\,x])^3}\,dx$$

Optimal (type 4, 207 leaves, 11 steps):

$$\frac{119\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]}{10\,a^3\,d}+\frac{11\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]}{2\,a^3\,d}+\frac{11\,\text{Sin}[c+d\,x]}{2\,a^3\,d\,\text{Cos}[c+d\,x]^{3/2}}-\frac{119\,\text{Sin}[c+d\,x]}{10\,a^3\,d\,\sqrt{\text{Cos}[c+d\,x]}}-\frac{\text{Sin}[c+d\,x]}{5\,d\,\text{Cos}[c+d\,x]^{9/2}\,(a+a\,\text{Sec}[c+d\,x])^3}-\frac{2\,\text{Sin}[c+d\,x]}{3\,a\,d\,\text{Cos}[c+d\,x]^{7/2}\,(a+a\,\text{Sec}[c+d\,x])^2}-\frac{119\,\text{Sin}[c+d\,x]}{30\,d\,\text{Cos}[c+d\,x]^{5/2}\,(a^3+a^3\,\text{Sec}[c+d\,x])}$$

Result (type 5, 402 leaves):

$$\frac{1}{5 a^3 (1+\text{Sec}[c+d x])^3}\text{Cos}\left[\frac{1}{2}(c+d x)\right]^6\left(-\left(\left(\left(5134\,\text{Cos}\left[\frac{1}{2}(c-d x)\right]+4148\,\text{Cos}\left[\frac{1}{2}(3 c+d x)\right]+4664\,\text{Cos}\left[\frac{1}{2}(c+3 d x)\right]+2476\,\text{Cos}\left[\frac{1}{2}(5 c+3 d x)\right]+3340\,\text{Cos}\left[\frac{1}{2}(3 c+5 d x)\right]+944\,\text{Cos}\left[\frac{1}{2}(7 c+5 d x)\right]+1620\,\text{Cos}\left[\frac{1}{2}(5 c+7 d x)\right]+165\,\text{Cos}\left[\frac{1}{2}(9 c+7 d x)\right]+357\,\text{Cos}\left[\frac{1}{2}(7 c+9 d x)\right]\right)\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\right)\Big/\left(96\, d\, \text{Cos}[c+d x]^{9/2}\right)\right)+\left(4\, i \sqrt{2}\, e^{-i (c+d x)}\left(119\left(1+e^{2 i (c+d x)}\right)+119\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\frac{1}{2},\frac{3}{4},-e^{2 i (c+d x)}\right]-55\, e^{i (c+d x)}\left(-1+e^{2 i c}\right)\sqrt{1+e^{2 i (c+d x)}}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{2},\frac{5}{4},-e^{2 i (c+d x)}\right]\right)\text{Sec}[c+d x]^3\right)\Big/\left(d\left(-1+e^{2 i c}\right)\sqrt{e^{-i (c+d x)}\left(1+e^{2 i (c+d x)}\right)}\right)\right)$$

Problem 402: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 57 leaves, 3 steps):

$$\frac{2 \sqrt{a}\, \text{ArcSinh}\left[\frac{\sqrt{a}\, \text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right] \sqrt{\text{Cos}[c+d x]}\, \sqrt{\text{Sec}[c+d x]}}{d}$$

Result (type 5, 113 leaves):

$$-\frac{1}{3 d} 2\, i\, e^{\frac{1}{2} i (c+d x)} \sqrt{\text{Cos}[c+d x]}\left(3\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2 i (c+d x)}\right]+e^{i (c+d x)}\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2 i (c+d x)}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]\sqrt{a\,(1+\text{Sec}[c+d x])}$$

Problem 403: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 92 leaves, 4 steps):

$$\frac{\sqrt{a}\, \text{ArcSinh}\left[\frac{\sqrt{a}\, \text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right] \sqrt{\text{Cos}[c+d x]}\, \sqrt{\text{Sec}[c+d x]}}{d}+\frac{a\,\text{Sin}[c+d x]}{d\,\text{Cos}[c+d x]^{3/2}\sqrt{a+a\,\text{Sec}[c+d x]}}$$

Result (type 5, 146 leaves):

$$\frac{1}{3d}\sqrt{\text{Cos}[c+dx]}\ \sqrt{a\left(1+\text{Sec}[c+dx]\right)}$$
$$\left(-3\,\mathrm{i}\,e^{\frac{1}{2}\mathrm{i}(c+dx)}\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\mathrm{i}(c+dx)}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]-\mathrm{i}\,e^{\frac{3}{2}\mathrm{i}(c+dx)}\right.$$
$$\left.\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\mathrm{i}(c+dx)}\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]+3\,\text{Sec}[c+dx]\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)$$

Problem 404: Result unnecessarily involves higher level functions.

$$\int\frac{\sqrt{a+a\,\text{Sec}[c+dx]}}{\text{Cos}[c+dx]^{5/2}}\,dx$$

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

$$\frac{3\sqrt{a}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+dx]}{\sqrt{a+a\,\text{Sec}[c+dx]}}\right]\sqrt{\text{Cos}[c+dx]}\ \sqrt{\text{Sec}[c+dx]}}{4d}+$$
$$\frac{a\,\text{Sin}[c+dx]}{2d\,\text{Cos}[c+dx]^{5/2}\sqrt{a+a\,\text{Sec}[c+dx]}}+\frac{3a\,\text{Sin}[c+dx]}{4d\,\text{Cos}[c+dx]^{3/2}\sqrt{a+a\,\text{Sec}[c+dx]}}$$

Result (type 5, 145 leaves):

$$\frac{1}{4d}\sqrt{\text{Cos}[c+dx]}\ \text{Sec}\left[\frac{1}{2}(c+dx)\right]\sqrt{a\left(1+\text{Sec}[c+dx]\right)}$$
$$\left(-3\,\mathrm{i}\,e^{\frac{1}{2}\mathrm{i}(c+dx)}\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\mathrm{i}(c+dx)}\right]-\mathrm{i}\,e^{\frac{3}{2}\mathrm{i}(c+dx)}\right.$$
$$\left.\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\mathrm{i}(c+dx)}\right]+\text{Sec}[c+dx]\left(3+2\,\text{Sec}[c+dx]\right)\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)$$

Problem 408: Result unnecessarily involves higher level functions.

$$\int\sqrt{\text{Cos}[c+dx]}\ \left(a+a\,\text{Sec}[c+dx]\right)^{3/2}dx$$

Optimal (type 3, 96 leaves, 5 steps):

$$\frac{2a^{3/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+dx]}{\sqrt{a+a\,\text{Sec}[c+dx]}}\right]\sqrt{\text{Cos}[c+dx]}\ \sqrt{\text{Sec}[c+dx]}}{d}+\frac{2a^2\,\text{Sin}[c+dx]}{d\sqrt{\text{Cos}[c+dx]}\ \sqrt{a+a\,\text{Sec}[c+dx]}}$$

Result (type 5, 132 leaves):

$$-\frac{1}{3d\left(1+e^{\mathrm{i}(c+dx)}\right)}$$
$$2\,\mathrm{i}\,a\sqrt{\text{Cos}[c+dx]}\ \left(-3+3e^{\mathrm{i}(c+dx)}+6e^{\mathrm{i}(c+dx)}\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\mathrm{i}(c+dx)}\right]+\right.$$
$$\left.2e^{2\mathrm{i}(c+dx)}\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\mathrm{i}(c+dx)}\right]\right)\sqrt{a\left(1+\text{Sec}[c+dx]\right)}$$

Problem 409: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 95 leaves, 5 steps):

$$\frac{3\,a^{3/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]\sqrt{\text{Cos}[c + d\,x]}\,\sqrt{\text{Sec}[c + d\,x]}}{d} + \frac{a^2\,\text{Sin}[c + d\,x]}{d\,\text{Cos}[c + d\,x]^{3/2}\,\sqrt{a + a\,\text{Sec}[c + d\,x]}}$$

Result (type 5, 171 leaves):

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

Problem 410: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 140 leaves, 6 steps):

$$\frac{7\,a^{3/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]\sqrt{\text{Cos}[c + d\,x]}\,\sqrt{\text{Sec}[c + d\,x]}}{4\,d} +$$
$$\frac{a^2\,\text{Sin}[c + d\,x]}{2\,d\,\text{Cos}[c + d\,x]^{5/2}\,\sqrt{a + a\,\text{Sec}[c + d\,x]}} + \frac{7\,a^2\,\text{Sin}[c + d\,x]}{4\,d\,\text{Cos}[c + d\,x]^{3/2}\,\sqrt{a + a\,\text{Sec}[c + d\,x]}}$$

Result (type 5, 167 leaves):

$$\left(a\,(1 + \text{Cos}[c + d\,x])\,\text{Sec}\left[\frac{1}{2}\,(c + d\,x)\right]^3\sqrt{a\,(1 + \text{Sec}[c + d\,x])}\right.$$
$$\left(-21\,i\,e^{\frac{1}{2}\,i\,(c+d\,x)}\,\text{Cos}[c + d\,x]^2\,\text{Hypergeometric2F1}\left[\frac{1}{4}, 1, \frac{5}{4}, -e^{2\,i\,(c+d\,x)}\right] - \right.$$
$$7\,i\,e^{\frac{3}{2}\,i\,(c+d\,x)}\,\text{Cos}[c + d\,x]^2\,\text{Hypergeometric2F1}\left[\frac{3}{4}, 1, \frac{7}{4}, -e^{2\,i\,(c+d\,x)}\right] +$$
$$\left.\left.3\,(2 + 7\,\text{Cos}[c + d\,x])\,\text{Sin}\left[\frac{1}{2}\,(c + d\,x)\right]\right)\right) \Big/ \left(24\,d\,\text{Cos}[c + d\,x]^{3/2}\right)$$

Problem 411: Result unnecessarily involves higher level functions.

$$\int \frac{(a+a\,\mathrm{Sec}[c+d\,x])^{3/2}}{\mathrm{Cos}[c+d\,x]^{5/2}}\,dx$$

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

$$\frac{11\,a^{3/2}\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}}{8\,d}+\frac{a^2\,\mathrm{Sin}[c+d\,x]}{3\,d\,\mathrm{Cos}[c+d\,x]^{7/2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{11\,a^2\,\mathrm{Sin}[c+d\,x]}{12\,d\,\mathrm{Cos}[c+d\,x]^{5/2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{11\,a^2\,\mathrm{Sin}[c+d\,x]}{8\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}$$

Result (type 5, 176 leaves):

$$\left(a\,(1+\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^3\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\left(-33\,i\,e^{\frac{1}{2}i\,(c+d\,x)}\,\mathrm{Cos}[c+d\,x]^3\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]-11\,i\,e^{\frac{3}{2}i\,(c+d\,x)}\,\mathrm{Cos}[c+d\,x]^3\,\mathrm{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\,i\,(c+d\,x)}\right]+\left(8+22\,\mathrm{Cos}[c+d\,x]+33\,\mathrm{Cos}[c+d\,x]^2\right)\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(48\,d\,\mathrm{Cos}[c+d\,x]^{5/2}\right)$$

Problem 415: Result unnecessarily involves higher level functions.

$$\int \mathrm{Cos}[c+d\,x]^{3/2}\,(a+a\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

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

$$\frac{2\,a^{5/2}\,\mathrm{ArcSinh}\left[\frac{\sqrt{a}\,\mathrm{Tan}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}\right]\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Sec}[c+d\,x]}}{d}+\frac{14\,a^3\,\mathrm{Sin}[c+d\,x]}{3\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}}+\frac{2\,a^2\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+a\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{3\,d}$$

Result (type 5, 155 leaves):

$$\frac{1}{12\,d}a^2\sqrt{\mathrm{Cos}[c+d\,x]}\,(1+\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5\sqrt{a\,(1+\mathrm{Sec}[c+d\,x])}\left(-6\,i\,e^{\frac{1}{2}i\,(c+d\,x)}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]-2\,i\,e^{\frac{3}{2}i\,(c+d\,x)}\,\mathrm{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\,i\,(c+d\,x)}\right]+15\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{3}{2}(c+d\,x)\right]\right)$$

Problem 416: Result unnecessarily involves higher level functions.

$$\int \sqrt{\text{Cos}[c+d x]}\,(a+a\,\text{Sec}[c+d x])^{5/2}\,dx$$

Optimal (type 3, 132 leaves, 5 steps):

$$\frac{5 a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]\sqrt{\text{Cos}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}}{d}+\frac{a^3\,\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}\,\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a^2\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}}$$

Result (type 5, 167 leaves):

$$\left(a^2\,(1+\text{Cos}[c+d x])^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\sqrt{a\,(1+\text{Sec}[c+d x])}\left(-15\,i\,e^{\frac{1}{2}i(c+d x)}\,\text{Cos}[c+d x]\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2i(c+d x)}\right]-5\,i\,e^{\frac{3}{2}i(c+d x)}\,\text{Cos}[c+d x]\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2i(c+d x)}\right]+3\,(1+2\,\text{Cos}[c+d x])\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(12\,d\sqrt{\text{Cos}[c+d x]}\right)$$

Problem 417: Result unnecessarily involves higher level functions.

$$\int \frac{(a+a\,\text{Sec}[c+d x])^{5/2}}{\sqrt{\text{Cos}[c+d x]}}\,dx$$

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

$$\frac{19 a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d x]}{\sqrt{a+a\,\text{Sec}[c+d x]}}\right]\sqrt{\text{Cos}[c+d x]}\,\sqrt{\text{Sec}[c+d x]}}{4 d}+\frac{9 a^3\,\text{Sin}[c+d x]}{4 d\,\text{Cos}[c+d x]^{3/2}\sqrt{a+a\,\text{Sec}[c+d x]}}+\frac{a^2\sqrt{a+a\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{2 d\,\text{Cos}[c+d x]^{3/2}}$$

Result (type 5, 171 leaves):

$$\left(a^2\,(1+\text{Cos}[c+d x])^2\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^5\sqrt{a\,(1+\text{Sec}[c+d x])}\left(-57\,i\,e^{\frac{1}{2}i(c+d x)}\,\text{Cos}[c+d x]^2\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2i(c+d x)}\right]-19\,i\,e^{\frac{3}{2}i(c+d x)}\,\text{Cos}[c+d x]^2\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2i(c+d x)}\right]+3\,(2+11\,\text{Cos}[c+d x])\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(48\,d\,\text{Cos}[c+d x]^{3/2}\right)$$

Problem 418: Result unnecessarily involves higher level functions.

$$\int \frac{(a+a\,\text{Sec}[c+d\,x])^{5/2}}{\text{Cos}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 3, 180 leaves, 6 steps):

$$\frac{25\,a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}}{8\,d}+\frac{13\,a^3\,\text{Sin}[c+d\,x]}{12\,d\,\text{Cos}[c+d\,x]^{5/2}\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{25\,a^3\,\text{Sin}[c+d\,x]}{8\,d\,\text{Cos}[c+d\,x]^{3/2}\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a^2\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,d\,\text{Cos}[c+d\,x]^{5/2}}$$

Result (type 5, 180 leaves):

$$\left(a^2\,(1+\text{Cos}[c+d\,x])^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5\sqrt{a\,(1+\text{Sec}[c+d\,x])}\left(-75\,i\,e^{\frac{1}{2}i\,(c+d\,x)}\,\text{Cos}[c+d\,x]^3\,\text{Hypergeometric2F1}\left[\frac{1}{4},1,\frac{5}{4},-e^{2\,i\,(c+d\,x)}\right]-25\,i\,e^{\frac{3}{2}i\,(c+d\,x)}\,\text{Cos}[c+d\,x]^3\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{7}{4},-e^{2\,i\,(c+d\,x)}\right]+\left(8+34\,\text{Cos}[c+d\,x]+75\,\text{Cos}[c+d\,x]^2\right)\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(96\,d\,\text{Cos}[c+d\,x]^{5/2}\right)$$

Problem 419: Result unnecessarily involves higher level functions.

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

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

$$\frac{163\,a^{5/2}\,\text{ArcSinh}\left[\frac{\sqrt{a}\,\text{Tan}[c+d\,x]}{\sqrt{a+a\,\text{Sec}[c+d\,x]}}\right]\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}}{64\,d}+\frac{17\,a^3\,\text{Sin}[c+d\,x]}{24\,d\,\text{Cos}[c+d\,x]^{7/2}\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{163\,a^3\,\text{Sin}[c+d\,x]}{96\,d\,\text{Cos}[c+d\,x]^{5/2}\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{163\,a^3\,\text{Sin}[c+d\,x]}{64\,d\,\text{Cos}[c+d\,x]^{3/2}\sqrt{a+a\,\text{Sec}[c+d\,x]}}+\frac{a^2\sqrt{a+a\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{4\,d\,\text{Cos}[c+d\,x]^{7/2}}$$

Result (type 5, 190 leaves):

$$\frac{1}{768\, d\, \mathrm{Cos}[c+d\,x]^{7/2}} a^2 \left(1+\mathrm{Cos}[c+d\,x]\right)^2 \mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^5 \sqrt{a\left(1+\mathrm{Sec}[c+d\,x]\right)} \left(-489\, i\, e^{\frac{1}{2} i (c+d x)} \mathrm{Cos}[c+d\,x]^4\, \mathrm{Hypergeometric2F1}\left[\frac{1}{4}, 1, \frac{5}{4}, -e^{2 i (c+d x)}\right] - 163\, i\, e^{\frac{3}{2} i (c+d x)} \mathrm{Cos}[c+d\,x]^4\, \mathrm{Hypergeometric2F1}\left[\frac{3}{4}, 1, \frac{7}{4}, -e^{2 i (c+d x)}\right] + \left(48+184\,\mathrm{Cos}[c+d\,x]+326\,\mathrm{Cos}[c+d\,x]^2+489\,\mathrm{Cos}[c+d\,x]^3\right) \mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

Problem 441: Unable to integrate problem.

$$\int (d\,\mathrm{Cos}[e+f\,x])^n \left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3 dx$$

Optimal (type 5, 244 leaves, 8 steps):

$$-\left(\left(a^3 (7-4\,n) (d\,\mathrm{Cos}[e+f\,x])^n\, \mathrm{Hypergeometric2F1}\left[\frac{1}{2}, \frac{n}{2}, \frac{2+n}{2}, \mathrm{Cos}[e+f\,x]^2\right] \mathrm{Sin}[e+f\,x]\right) \Big/ \left(f\,(2-n)\,n\,\sqrt{\mathrm{Sin}[e+f\,x]^2}\right)\right) - \left(a^3 (1-4\,n)\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Cos}[e+f\,x])^n\, \mathrm{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+n}{2}, \frac{3+n}{2}, \mathrm{Cos}[e+f\,x]^2\right] \mathrm{Sin}[e+f\,x]\right) \Big/ \left(f\,(1-n)\,(1+n)\,\sqrt{\mathrm{Sin}[e+f\,x]^2}\right) + \frac{a^3 (5-2\,n) (d\,\mathrm{Cos}[e+f\,x])^n\, \mathrm{Tan}[e+f\,x]}{f\,(1-n)\,(2-n)} + \frac{(d\,\mathrm{Cos}[e+f\,x])^n \left(a^3+a^3\,\mathrm{Sec}[e+f\,x]\right) \mathrm{Tan}[e+f\,x]}{f\,(2-n)}$$

Result (type 8, 25 leaves):

$$\int (d\,\mathrm{Cos}[e+f\,x])^n \left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3 dx$$

Problem 442: Unable to integrate problem.

$$\int (d\,\mathrm{Cos}[e+f\,x])^n \left(a+a\,\mathrm{Sec}[e+f\,x]\right)^2 dx$$

Optimal (type 5, 179 leaves, 7 steps):

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

Result (type 8, 25 leaves):

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

Problem 443: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$-\left(\left(a\,(d\,\text{Cos}[e+f\,x])^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{n}{2},\frac{2+n}{2},\text{Cos}[e+f\,x]^2\right]\text{Sin}[e+f\,x]\right)\Big/\left(f\,n\,\sqrt{\text{Sin}[e+f\,x]^2}\right)\right)-\left(a\,(d\,\text{Cos}[e+f\,x])^{1+n}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\text{Cos}[e+f\,x]^2\right]\text{Sin}[e+f\,x]\right)\Big/\left(d\,f\,(1+n)\,\sqrt{\text{Sin}[e+f\,x]^2}\right)$$

Result (type 6, 3856 leaves):

$$\Bigg(a\,\text{Cos}[e+f\,x]^n\,(d\,\text{Cos}[e+f\,x])^n\,(1+\text{Sec}[e+f\,x])\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\Bigg(\left(3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\Big/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+2\Bigg(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+(-1+n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Bigg)\Bigg)+\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\Big/\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]-2\Bigg(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]+(1+n)\,\text{AppellF1}\left[\frac{3}{2},-n,2+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Bigg)\Bigg)\Bigg)\Big/\Bigg(f\left(\frac{1}{2}\text{Cos}[e+f\,x]^n\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\right.$$

$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right]\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\left(-3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(-1+n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left.\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(1+n)\,\text{AppellF1}\left[\frac{3}{2},-n,2+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)-n\,\text{Cos}[e+fx]^{-1+n}\,\text{Sin}[e+fx]\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/\right.$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(-3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(-1+n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left.\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]-\right.$$
$$2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(1+n)\,\text{AppellF1}\left[\frac{3}{2},-n,2+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)+\text{Cos}[e+fx]^n\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$
$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.\right.\right.$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\left(-3\,\text{AppellF1}\left[\frac{1}{2},\right.\right.\right.$$
$$1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,\right.\right.$$

$$1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+(-1+n)\ \text{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\left.\left.2-n,\ n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right)\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)\right)\right)+$$

$$\left(3\ \left(-\frac{1}{3}\ n\ \text{AppellF1}\left[\frac{3}{2},\ 1-n,\ 1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right.\right.$$

$$\text{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]+\frac{1}{3}\ (1-n)\ \text{AppellF1}\left[\frac{3}{2},\ 2-n,\ n,\ \frac{5}{2},\right.$$

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

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)\ \left(-3\ \text{AppellF1}\left[\frac{1}{2},\ 1-n,\ n,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+2\ \left(n\ \text{AppellF1}\left[\frac{3}{2},\ 1-n,\ 1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+(-1+n)\ \text{AppellF1}\left[\frac{3}{2},\ 2-n,\ n,\ \frac{5}{2},\right.$$

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

$$\left(3\ \text{AppellF1}\left[\frac{1}{2},\ -n,\ 1+n,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right.$$

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

$$\left(3\ \text{AppellF1}\left[\frac{1}{2},\ -n,\ 1+n,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]-\right.$$

$$2\ \left(n\ \text{AppellF1}\left[\frac{3}{2},\ 1-n,\ 1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+\right.$$

$$\left.(1+n)\ \text{AppellF1}\left[\frac{3}{2},\ -n,\ 2+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right)$$

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

$$\left(-\frac{1}{3}\ n\ \text{AppellF1}\left[\frac{3}{2},\ 1-n,\ 1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}\ (e+f\,x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]-\frac{1}{3}\ (1+n)\ \text{AppellF1}\left[\frac{3}{2},\ -n,\ 2+n,\ \frac{5}{2},\right.$$

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

$$\left(3\ \text{AppellF1}\left[\frac{1}{2},\ -n,\ 1+n,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]-\right.$$

$$2\ \left(n\ \text{AppellF1}\left[\frac{3}{2},\ 1-n,\ 1+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+\right.$$

$$(1+n)\ \text{AppellF1}\left[\frac{3}{2},\ -n,\ 2+n,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\right.$$

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

$$\left(3\ \text{AppellF1}\left[\frac{1}{2},\ 1-n,\ n,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]\right.$$

$$\left(2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$
$$(-1+n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]-$$
$$3\left(-\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(1-n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(n\left(-\frac{3}{5}(1+n)\,\text{AppellF1}\left[\frac{5}{2},1-n,2+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(1-n)$$
$$\text{AppellF1}\left[\frac{5}{2},2-n,1+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)+(-1+n)\left(-\frac{3}{5}n\,\text{AppellF1}\left[\frac{5}{2},2-n,\right.\right.$$
$$1+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(2-n)\,\text{AppellF1}\left[\frac{5}{2},3-n,n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\right)\right)\Big/$$
$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(-3\,\text{AppellF1}\left[\frac{1}{2},1-n,n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(-1+n)\,\text{AppellF1}\left[\frac{3}{2},2-n,n,\frac{5}{2},$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)-$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Cos}\left[\frac{1}{2}(e+fx)\right]^2\left(-2\left(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(1+n)\,\text{AppellF1}\left[\frac{3}{2},-n,2+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$
$$3\left(-\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]-\frac{1}{3}(1+n)\,\text{AppellF1}\left[\frac{3}{2},-n,2+n,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg) - 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg(n\Bigg(-\frac{3}{5}(1+n)\,\text{AppellF1}\left[\frac{5}{2}, 1-n, 2+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{3}{5}(1-n)\,\text{AppellF1}\left[\frac{5}{2}, 2-n, 1+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg) + (1+n)\Bigg(-\frac{3}{5}n\,\text{AppellF1}\left[\frac{5}{2}, 1-n, 2+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right] - \frac{3}{5}(2+n)\,\text{AppellF1}\left[\frac{5}{2}, -n, 3+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2}, -n, 1+n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] - 2\Bigg(n\,\text{AppellF1}\left[\frac{3}{2}, 1-n, 1+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (1+n)\,\text{AppellF1}\left[\frac{3}{2}, -n, 2+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Problem 444: Unable to integrate problem.

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

Optimal (type 5, 178 leaves, 7 steps):

$$\frac{(d\,\text{Cos}[e+f x])^n\,\text{Sin}[e+f x]}{f\,(a+a\,\text{Sec}[e+f x])} - \left(\text{Cos}[e+f x]\,(d\,\text{Cos}[e+f x])^n\,\text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+n}{2}, \frac{3+n}{2}, \text{Cos}[e+f x]^2\right]\text{Sin}[e+f x]\right)\Bigg/\left(a f\sqrt{\text{Sin}[e+f x]^2}\right) + \left((1+n)\,\text{Cos}[e+f x]^2\,(d\,\text{Cos}[e+f x])^n\,\text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{2+n}{2}, \frac{4+n}{2}, \text{Cos}[e+f x]^2\right]\text{Sin}[e+f x]\right)\Bigg/\left(a f\,(2+n)\sqrt{\text{Sin}[e+f x]^2}\right)$$

Result (type 8, 25 leaves):

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

Problem 445: Unable to integrate problem.

$$\int \frac{(d \operatorname{Cos}[e+f x])^n}{(a+a \operatorname{Sec}[e+f x])^2} \, dx$$

Optimal (type 5, 215 leaves, 8 steps):

$$\left(2 (2+n) (d \operatorname{Cos}[e+f x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{n}{2}, \frac{2+n}{2}, \operatorname{Cos}[e+f x]^2\right] \operatorname{Sin}[e+f x]\right) \Big/ \left(3 a^2 f \sqrt{\operatorname{Sin}[e+f x]^2}\right) - \left((3+2 n) \operatorname{Cos}[e+f x] (d \operatorname{Cos}[e+f x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+n}{2}, \frac{3+n}{2}, \operatorname{Cos}[e+f x]^2\right] \operatorname{Sin}[e+f x]\right) \Big/ \left(3 a^2 f \sqrt{\operatorname{Sin}[e+f x]^2}\right) - \frac{2 (2+n) (d \operatorname{Cos}[e+f x])^n \operatorname{Tan}[e+f x]}{3 a^2 f (1+\operatorname{Sec}[e+f x])} - \frac{(d \operatorname{Cos}[e+f x])^n \operatorname{Tan}[e+f x]}{3 f (a+a \operatorname{Sec}[e+f x])^2}$$

Result (type 8, 25 leaves):

$$\int \frac{(d \operatorname{Cos}[e+f x])^n}{(a+a \operatorname{Sec}[e+f x])^2} \, dx$$

Problem 446: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 85 leaves, 6 steps):

$$\frac{3 b \operatorname{ArcTanh}[\operatorname{Sin}[c+d x]]}{8 d} + \frac{a \operatorname{Tan}[c+d x]}{d} + \frac{3 b \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{8 d} + \frac{b \operatorname{Sec}[c+d x]^3 \operatorname{Tan}[c+d x]}{4 d} + \frac{a \operatorname{Tan}[c+d x]^3}{3 d}$$

Result (type 3, 227 leaves):

$$-\frac{3 b \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] - \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{8 d} + \frac{3 b \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] + \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{8 d} + \frac{b}{16 d \left(\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] - \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4} + \frac{3 b}{16 d \left(\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] - \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2} - \frac{b}{16 d \left(\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] + \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4} - \frac{3 b}{16 d \left(\operatorname{Cos}\left[\frac{1}{2} (c+d x)\right] + \operatorname{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2} + \frac{2 a \operatorname{Tan}[c+d x]}{3 d} + \frac{a \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]}{3 d}$$

Problem 449: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[c+d\,x]\,\left(a+b\,\text{Sec}[c+d\,x]\right)\,dx$$

Optimal (type 3, 24 leaves, 4 steps):

$$\frac{a\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{d}+\frac{b\,\text{Tan}[c+d\,x]}{d}$$

Result (type 3, 81 leaves):

$$-\frac{a\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}+\frac{a\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}+\frac{b\,\text{Tan}[c+d\,x]}{d}$$

Problem 450: Result more than twice size of optimal antiderivative.

$$\int \left(a+b\,\text{Sec}[c+d\,x]\right)\,dx$$

Optimal (type 3, 16 leaves, 2 steps):

$$a\,x+\frac{b\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{d}$$

Result (type 3, 73 leaves):

$$a\,x-\frac{b\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}+\frac{b\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}$$

Problem 456: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[c+d\,x]^4\,\left(a+b\,\text{Sec}[c+d\,x]\right)^2\,dx$$

Optimal (type 3, 135 leaves, 7 steps):

$$\frac{3\,a\,b\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{4\,d}+\frac{\left(5\,a^2+4\,b^2\right)\,\text{Tan}[c+d\,x]}{5\,d}+\frac{3\,a\,b\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{4\,d}+$$
$$\frac{a\,b\,\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{2\,d}+\frac{b^2\,\text{Sec}[c+d\,x]^4\,\text{Tan}[c+d\,x]}{5\,d}+\frac{\left(5\,a^2+4\,b^2\right)\,\text{Tan}[c+d\,x]^3}{15\,d}$$

Result (type 3, 301 leaves):

$$-\frac{3\,a\,b\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{4\,d}+\frac{3\,a\,b\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{4\,d}+\frac{a\,b}{8\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+\frac{3\,a\,b}{8\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}-\frac{a\,b}{8\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}-\frac{3\,a\,b}{8\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+\frac{2\,a^2\,\text{Tan}[c+d\,x]}{3\,d}+\frac{8\,b^2\,\text{Tan}[c+d\,x]}{15\,d}+\frac{a^2\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{3\,d}+\frac{4\,b^2\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{15\,d}+\frac{b^2\,\text{Sec}[c+d\,x]^4\,\text{Tan}[c+d\,x]}{5\,d}$$

Problem 457: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 110 leaves, 6 steps):

$$\frac{(4\,a^2+3\,b^2)\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{8\,d}+\frac{2\,a\,b\,\text{Tan}[c+d\,x]}{d}+\frac{(4\,a^2+3\,b^2)\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{8\,d}+\frac{b^2\,\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{4\,d}+\frac{2\,a\,b\,\text{Tan}[c+d\,x]^3}{3\,d}$$

Result (type 3, 375 leaves):

$$-\frac{a^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,d}-\frac{3\,b^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+\frac{a^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,d}+\frac{3\,b^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+\frac{b^2}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+\frac{a^2}{4\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+\frac{3\,b^2}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}-\frac{b^2}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}-\frac{a^2}{4\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}-\frac{3\,b^2}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+\frac{4\,a\,b\,\text{Tan}[c+d\,x]}{3\,d}+\frac{2\,a\,b\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{3\,d}$$

Problem 459: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 59 leaves, 5 steps):

$$\frac{(2a^2+b^2)\,\text{ArcTanh}[\text{Sin}[c+d x]]}{2d}+\frac{2ab\,\text{Tan}[c+d x]}{d}+\frac{b^2\,\text{Sec}[c+d x]\,\text{Tan}[c+d x]}{2d}$$

Result (type 3, 218 leaves):

$$\frac{1}{4d}\text{Sec}[c+d x]^2\Big(-2a^2\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]-\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]- b^2\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]-\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]-(2a^2+b^2)\,\text{Cos}[2(c+d x)]\Big(\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]-\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]-\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]+\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]\Big)+ 2a^2\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]+\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]+b^2\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]+\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]+ 2b^2\,\text{Sin}[c+d x]+4ab\,\text{Sin}[2(c+d x)]\Big)$$

Problem 460: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 33 leaves, 4 steps):

$$a^2 x+\frac{2ab\,\text{ArcTanh}[\text{Sin}[c+d x]]}{d}+\frac{b^2\,\text{Tan}[c+d x]}{d}$$

Result (type 3, 77 leaves):

$$\frac{1}{d}\Big(a\Big(a c+a d x-2b\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]-\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]+ 2b\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(c+d x)\big]+\text{Sin}\big[\tfrac{1}{2}(c+d x)\big]\big]\Big)+b^2\,\text{Tan}[c+d x]\Big)$$

Problem 461: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x]\,(a+b\,\text{Sec}[c+d x])^2\,dx$$

Optimal (type 3, 33 leaves, 4 steps):

$$2abx+\frac{b^2\,\text{ArcTanh}[\text{Sin}[c+d x]]}{d}+\frac{a^2\,\text{Sin}[c+d x]}{d}$$

Result (type 3, 105 leaves):

$$2\,a\,b\,x-\frac{b^2\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}+$$
$$\frac{b^2\,\text{Log}\left[\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right]}{d}+\frac{a^2\,\text{Cos}[d\,x]\,\text{Sin}[c]}{d}+\frac{a^2\,\text{Cos}[c]\,\text{Sin}[d\,x]}{d}$$

Problem 466: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 189 leaves, 8 steps):

$$\frac{a\,\left(4\,a^2+9\,b^2\right)\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{8\,d}-\frac{\left(3\,a^4-52\,a^2\,b^2-16\,b^4\right)\,\text{Tan}[c+d\,x]}{30\,b\,d}-$$
$$\frac{a\,\left(6\,a^2-71\,b^2\right)\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{120\,d}-\frac{\left(3\,a^2-16\,b^2\right)\,\left(a+b\,\text{Sec}[c+d\,x]\right)^2\,\text{Tan}[c+d\,x]}{60\,b\,d}-$$
$$\frac{a\,\left(a+b\,\text{Sec}[c+d\,x]\right)^3\,\text{Tan}[c+d\,x]}{20\,b\,d}+\frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^4\,\text{Tan}[c+d\,x]}{5\,b\,d}$$

Result (type 3, 619 leaves):

$$\frac{\left(-4\,a^3-9\,a\,b^2\right)\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+$$
$$\frac{\left(4\,a^3+9\,a\,b^2\right)\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+$$
$$\frac{15\,a\,b^2+2\,b^3}{80\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+\frac{60\,a^3+60\,a^2\,b+135\,a\,b^2+19\,b^3}{240\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+$$
$$\frac{b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]}{20\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^5}+\frac{b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]}{20\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^5}+$$
$$\frac{-15\,a\,b^2-2\,b^3}{80\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+\frac{-60\,a^3-60\,a^2\,b-135\,a\,b^2-19\,b^3}{240\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+$$
$$\frac{2\,\left(15\,a^2\,b\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+4\,b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{15\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}+$$
$$\frac{2\,\left(15\,a^2\,b\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+4\,b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{15\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}+$$
$$\frac{60\,a^2\,b\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+19\,b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]}{120\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3}+\frac{60\,a^2\,b\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+19\,b^3\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]}{120\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3}$$

Problem 467: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 130 leaves, 7 steps):

$$\frac{3 b \left(4 a^2+b^2\right) \text{ArcTanh}[\text{Sin}[c+d x]]}{8 d}+\frac{a \left(a^2+4 b^2\right) \text{Tan}[c+d x]}{2 d}+\frac{b \left(2 a^2+3 b^2\right) \text{Sec}[c+d x] \text{Tan}[c+d x]}{8 d}+\frac{a \left(a+b \text{Sec}[c+d x]\right)^2 \text{Tan}[c+d x]}{4 d}+\frac{\left(a+b \text{Sec}[c+d x]\right)^3 \text{Tan}[c+d x]}{4 d}$$

Result (type 3, 455 leaves):

$$-\frac{3 \left(4 a^2 b+b^3\right) \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{8 d}+\frac{3 \left(4 a^2 b+b^3\right) \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{8 d}+\frac{b^3}{16 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+\frac{12 a^2 b+4 a b^2+3 b^3}{16 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+\frac{a b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{2 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}-\frac{b^3}{16 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+\frac{a b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{2 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}+\frac{-12 a^2 b-4 a b^2-3 b^3}{16 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+\frac{a^3 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+2 a b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)}+\frac{a^3 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+2 a b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)}$$

Problem 468: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 99 leaves, 6 steps):

$$\frac{a \left(2 a^2+3 b^2\right) \text{ArcTanh}[\text{Sin}[c+d x]]}{2 d}+\frac{2 b \left(4 a^2+b^2\right) \text{Tan}[c+d x]}{3 d}+\frac{5 a b^2 \text{Sec}[c+d x] \text{Tan}[c+d x]}{6 d}+\frac{b \left(a+b \text{Sec}[c+d x]\right)^2 \text{Tan}[c+d x]}{3 d}$$

Result (type 3, 206 leaves):

$$-\frac{1}{24\,d}\,\text{Sec}[c+d\,x]^3\,\Big(9\,a\,\big(2\,a^2+3\,b^2\big)\,\text{Cos}[c+d\,x]\,\Big(\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]-\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]\Big)+3\,a\,\big(2\,a^2+3\,b^2\big)\,\text{Cos}[3\,(c+d\,x)]\,\Big(\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]-\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]\Big)-4\,b\,\big(9\,a^2+4\,b^2+9\,a\,b\,\text{Cos}[c+d\,x]+\big(9\,a^2+2\,b^2\big)\,\text{Cos}[2\,(c+d\,x)]\big)\,\text{Sin}[c+d\,x]\Big)$$

Problem 469: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 73 leaves, 5 steps):

$$a^3\,x+\frac{b\,\big(6\,a^2+b^2\big)\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{2\,d}+\frac{5\,a\,b^2\,\text{Tan}[c+d\,x]}{2\,d}+\frac{b^2\,(a+b\,\text{Sec}[c+d\,x])\,\text{Tan}[c+d\,x]}{2\,d}$$

Result (type 3, 256 leaves):

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

Problem 477: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 179 leaves, 8 steps):

$$\frac{a\,b\,\big(4\,a^2+3\,b^2\big)\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{2\,d}+\frac{2\,\big(3\,a^4+28\,a^2\,b^2+4\,b^4\big)\,\text{Tan}[c+d\,x]}{15\,d}+\frac{a\,b\,\big(6\,a^2+29\,b^2\big)\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{30\,d}+\frac{\big(3\,a^2+4\,b^2\big)\,(a+b\,\text{Sec}[c+d\,x])^2\,\text{Tan}[c+d\,x]}{15\,d}+\frac{a\,(a+b\,\text{Sec}[c+d\,x])^3\,\text{Tan}[c+d\,x]}{5\,d}+\frac{(a+b\,\text{Sec}[c+d\,x])^4\,\text{Tan}[c+d\,x]}{5\,d}$$

Result (type 3, 663 leaves):

$$\frac{\left(-4 a^3 b-3 a b^3\right) \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{2 d}+$$
$$\frac{\left(4 a^3 b+3 a b^3\right) \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]}{2 d}+$$
$$\frac{10 a b^3+b^4}{40 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+\frac{240 a^3 b+120 a^2 b^2+180 a b^3+19 b^4}{240 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+$$
$$\frac{b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{20 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^5}+\frac{b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{20 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^5}+$$
$$\frac{-10 a b^3-b^4}{40 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+\frac{-240 a^3 b-120 a^2 b^2-180 a b^3-19 b^4}{240 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+$$
$$\left(15 a^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+60 a^2 b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+8 b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\Big/$$
$$\left(15 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right)+$$
$$\left(15 a^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+60 a^2 b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+8 b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\Big/$$
$$\left(15 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right)+\frac{120 a^2 b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+19 b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{120 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}+$$
$$\frac{120 a^2 b^2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]+19 b^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{120 d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}$$

Problem 478: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 146 leaves, 7 steps):

$$\frac{\left(8 a^4+24 a^2 b^2+3 b^4\right) \text{ArcTanh}[\text{Sin}[c+d x]]}{8 d}+$$
$$\frac{a b \left(19 a^2+16 b^2\right) \text{Tan}[c+d x]}{6 d}+\frac{b^2 \left(26 a^2+9 b^2\right) \text{Sec}[c+d x] \text{Tan}[c+d x]}{24 d}+$$
$$\frac{7 a b \left(a+b \text{Sec}[c+d x]\right)^2 \text{Tan}[c+d x]}{12 d}+\frac{b \left(a+b \text{Sec}[c+d x]\right)^3 \text{Tan}[c+d x]}{4 d}$$

Result (type 3, 807 leaves):

$$\left(\left(-8 a^4-24 a^2 b^2-3 b^4\right) \text{Cos}[c+d x]^4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] (a+b \text{Sec}[c+d x])^4\right) \Big/ \left(8 d (b+a \text{Cos}[c+d x])^4\right)+$$
$$\left(\left(8 a^4+24 a^2 b^2+3 b^4\right) \text{Cos}[c+d x]^4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] (a+b \text{Sec}[c+d x])^4\right) \Big/ \left(8 d (b+a \text{Cos}[c+d x])^4\right)+$$
$$\frac{b^4 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4}{16 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+$$
$$\frac{\left(72 a^2 b^2+16 a b^3+9 b^4\right) \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4}{48 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+$$
$$\frac{2 a b^3 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{3 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}-$$
$$\frac{b^4 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4}{16 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^4}+$$
$$\frac{2 a b^3 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4 \text{Sin}\left[\frac{1}{2} (c+d x)\right]}{3 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^3}+$$
$$\frac{\left(-72 a^2 b^2-16 a b^3-9 b^4\right) \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4}{48 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)^2}+$$
$$\left(4 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4 \left(3 a^3 b \text{Sin}\left[\frac{1}{2} (c+d x)\right]+2 a b^3 \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right) \Big/ \left(3 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right)+$$
$$\left(4 \text{Cos}[c+d x]^4 (a+b \text{Sec}[c+d x])^4 \left(3 a^3 b \text{Sin}\left[\frac{1}{2} (c+d x)\right]+2 a b^3 \text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right) \Big/ \left(3 d (b+a \text{Cos}[c+d x])^4 \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)\right)$$

Problem 479: Result more than twice size of optimal antiderivative.

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

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

$$a^4 x+\frac{2 a b \left(2 a^2+b^2\right) \text{ArcTanh}[\text{Sin}[c+d x]]}{d}+\frac{b^2 \left(17 a^2+2 b^2\right) \text{Tan}[c+d x]}{3 d}+$$
$$\frac{4 a b^3 \text{Sec}[c+d x] \text{Tan}[c+d x]}{3 d}+\frac{b^2 (a+b \text{Sec}[c+d x])^2 \text{Tan}[c+d x]}{3 d}$$

Result (type 3, 246 leaves):

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

Problem 480: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]\,(a+b\,\mathrm{Sec}[c+d\,x])^4\,dx$$

Optimal (type 3, 104 leaves, 6 steps):

$$4\,a^3\,b\,x+\frac{b^2\,\left(12\,a^2+b^2\right)\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]}{2\,d}+\frac{a^2\,\left(2\,a^2-b^2\right)\,\mathrm{Sin}[c+d\,x]}{2\,d}+\frac{b^2\,(a+b\,\mathrm{Sec}[c+d\,x])^2\,\mathrm{Sin}[c+d\,x]}{2\,d}+\frac{3\,a\,b^3\,\mathrm{Tan}[c+d\,x]}{d}$$

Result (type 3, 280 leaves):

$$\frac{1}{4\,d}\,\mathrm{Sec}[c+d\,x]^2\,\Bigg(8\,a^3\,b\,c+8\,a^3\,b\,d\,x-12\,a^2\,b^2\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]-b^4\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]+12\,a^2\,b^2\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]+b^4\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]+b\,\mathrm{Cos}[2\,(c+d\,x)]\,\bigg(8\,a^3\,(c+d\,x)-b\,\left(12\,a^2+b^2\right)\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]+b\,\left(12\,a^2+b^2\right)\,\mathrm{Log}\Big[\mathrm{Cos}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big]\bigg)+\left(a^4+2\,b^4\right)\,\mathrm{Sin}[c+d\,x]+8\,a\,b^3\,\mathrm{Sin}[2\,(c+d\,x)]+a^4\,\mathrm{Sin}[3\,(c+d\,x)]\Bigg)$$

Problem 486: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sec}[c+d\,x])^5\,dx$$

Optimal (type 3, 158 leaves, 7 steps):

$$a^5 x + \frac{b\left(40 a^4 + 40 a^2 b^2 + 3 b^4\right) \text{ArcTanh}[\text{Sin}[c + d x]]}{8 d} + \frac{a b^2 \left(53 a^2 + 20 b^2\right) \text{Tan}[c + d x]}{6 d} + \frac{b^3 \left(58 a^2 + 9 b^2\right) \text{Sec}[c + d x] \text{Tan}[c + d x]}{24 d} + \frac{11 a b^2 (a + b \text{Sec}[c + d x])^2 \text{Tan}[c + d x]}{12 d} + \frac{b^2 (a + b \text{Sec}[c + d x])^3 \text{Tan}[c + d x]}{4 d}$$

Result (type 3, 855 leaves) :

$$\frac{a^5 (c + d x) \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5}{d (b + a \text{Cos}[c + d x])^5} + \left(\left(-40 a^4 b - 40 a^2 b^3 - 3 b^5\right) \text{Cos}[c + d x]^5 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c + d x)\right] - \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right] (a + b \text{Sec}[c + d x])^5\right) \Big/ \left(8 d (b + a \text{Cos}[c + d x])^5\right) + \left(\left(40 a^4 b + 40 a^2 b^3 + 3 b^5\right) \text{Cos}[c + d x]^5 \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c + d x)\right] + \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right] (a + b \text{Sec}[c + d x])^5\right) \Big/ \left(8 d (b + a \text{Cos}[c + d x])^5\right) + \frac{b^5 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5}{16 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] - \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^4} + \frac{\left(120 a^2 b^3 + 20 a b^4 + 9 b^5\right) \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5}{48 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] - \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^2} + \frac{5 a b^4 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5 \text{Sin}\left[\frac{1}{2}(c + d x)\right]}{6 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] - \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^3} - \frac{b^5 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5}{16 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] + \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^4} + \frac{5 a b^4 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5 \text{Sin}\left[\frac{1}{2}(c + d x)\right]}{6 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] + \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^3} + \frac{\left(-120 a^2 b^3 - 20 a b^4 - 9 b^5\right) \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5}{48 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] + \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)^2} + \left(10 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5 \left(3 a^3 b^2 \text{Sin}\left[\frac{1}{2}(c + d x)\right] + a b^4 \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)\right) \Big/ \left(3 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] - \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)\right) + \left(10 \text{Cos}[c + d x]^5 (a + b \text{Sec}[c + d x])^5 \left(3 a^3 b^2 \text{Sin}\left[\frac{1}{2}(c + d x)\right] + a b^4 \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)\right) \Big/ \left(3 d (b + a \text{Cos}[c + d x])^5 \left(\text{Cos}\left[\frac{1}{2}(c + d x)\right] + \text{Sin}\left[\frac{1}{2}(c + d x)\right]\right)\right)$$

Problem 505: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cos}[c+d\,x]^3}{(a+b\,\text{Sec}[c+d\,x])^2}\,dx$$

Optimal (type 3, 261 leaves, 8 steps):

$$-\frac{b\,(a^2+4\,b^2)\,x}{a^5}+\frac{2\,b^4\,(5\,a^2-4\,b^2)\,\text{ArcTanh}\left[\frac{\sqrt{a-b}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a+b}}\right]}{a^5\,(a-b)^{3/2}\,(a+b)^{3/2}\,d}+\frac{(2\,a^4+7\,a^2\,b^2-12\,b^4)\,\text{Sin}[c+d\,x]}{3\,a^4\,(a^2-b^2)\,d}-\frac{b\,(a^2-2\,b^2)\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{a^3\,(a^2-b^2)\,d}+\frac{(a^2-4\,b^2)\,\text{Cos}[c+d\,x]^2\,\text{Sin}[c+d\,x]}{3\,a^2\,(a^2-b^2)\,d}+\frac{b^2\,\text{Cos}[c+d\,x]^2\,\text{Sin}[c+d\,x]}{a\,(a^2-b^2)\,d\,(a+b\,\text{Sec}[c+d\,x])}$$

Result (type 3, 176 leaves):

$$\frac{1}{12\,a^5\,d}\left(-12\,b\,(-\mathrm{i}\,a+2\,b)\,(\mathrm{i}\,a+2\,b)\,(c+d\,x)+\frac{24\,b^4\,(-5\,a^2+4\,b^2)\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2-b^2}}\right]}{(a^2-b^2)^{3/2}}+9\,a\,(a^2+4\,b^2)\,\text{Sin}[c+d\,x]+\frac{12\,a\,b^5\,\text{Sin}[c+d\,x]}{(-a+b)\,(a+b)\,(b+a\,\text{Cos}[c+d\,x])}-6\,a^2\,b\,\text{Sin}[2\,(c+d\,x)]+a^3\,\text{Sin}[3\,(c+d\,x)]\right)$$

Problem 529: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 120 leaves, 6 steps):

$$\frac{x}{125}+\frac{8361\,\text{Log}\left[2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]}{256000\,d}-\frac{8361\,\text{Log}\left[2\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]}{256000\,d}+\frac{9\,\text{Tan}[c+d\,x]}{160\,d\,(5+3\,\text{Sec}[c+d\,x])^2}+\frac{963\,\text{Tan}[c+d\,x]}{12800\,d\,(5+3\,\text{Sec}[c+d\,x])}$$

Result (type 3, 241 leaves):

$$\frac{1}{512000\, d\, (3+5\,\mathrm{Cos}[c+d\,x])^2}\Bigg(88064\, c+88064\, d\, x+359523\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]+$$
$$60\,\mathrm{Cos}[c+d\,x]\Bigg(2048\,(c+d\,x)+8361\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]-$$
$$8361\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]\Bigg)+$$
$$25\,\mathrm{Cos}[2\,(c+d\,x)]\Bigg(2048\,(c+d\,x)+8361\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]-$$
$$8361\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]\Bigg)-$$
$$359523\,\mathrm{Log}\Big[2\,\mathrm{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\mathrm{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]+115560\,\mathrm{Sin}[c+d\,x]+$$
$$110700\,\mathrm{Sin}[2\,(c+d\,x)]\Bigg)$$

Problem 530: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(5+3\,\mathrm{Sec}[c+d\,x])^4}\,dx$$

Optimal (type 3, 145 leaves, 7 steps):

$$\frac{x}{625}+\frac{278151\,\mathrm{Log}\big[2\,\mathrm{Cos}\big[\frac{1}{2}(c+d\,x)\big]-\mathrm{Sin}\big[\frac{1}{2}(c+d\,x)\big]\big]}{20480000\,d}-$$
$$\frac{278151\,\mathrm{Log}\big[2\,\mathrm{Cos}\big[\frac{1}{2}(c+d\,x)\big]+\mathrm{Sin}\big[\frac{1}{2}(c+d\,x)\big]\big]}{20480000\,d}+\frac{3\,\mathrm{Tan}[c+d\,x]}{80\,d\,(5+3\,\mathrm{Sec}[c+d\,x])^3}+$$
$$\frac{519\,\mathrm{Tan}[c+d\,x]}{12800\,d\,(5+3\,\mathrm{Sec}[c+d\,x])^2}+\frac{38733\,\mathrm{Tan}[c+d\,x]}{1024000\,d\,(5+3\,\mathrm{Sec}[c+d\,x])}$$

Result (type 3, 344 leaves):

$$\frac{1}{81920000\, d\, (3+5\,\text{Cos}[c+d\,x])^3}\Big(18284544\, c+18284544\, d\, x+4096000\, c\,\text{Cos}[3\,(c+d\,x)]+4096000\, d\, x\,\text{Cos}[3\,(c+d\,x)]+$$
$$155208258\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]+$$
$$34768875\,\text{Cos}[3\,(c+d\,x)]\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]+$$
$$915\,\text{Cos}[c+d\,x]\Big(32768\,(c+d\,x)+278151\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]-$$
$$278151\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]\Big)+$$
$$450\,\text{Cos}[2\,(c+d\,x)]\Big(32768\,(c+d\,x)+278151\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]-\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]-$$
$$278151\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]\Big)-$$
$$155208258\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]-$$
$$34768875\,\text{Cos}[3\,(c+d\,x)]\,\text{Log}\Big[2\,\text{Cos}\Big[\frac{1}{2}(c+d\,x)\Big]+\text{Sin}\Big[\frac{1}{2}(c+d\,x)\Big]\Big]+$$
$$52174260\,\text{Sin}[c+d\,x]+51462000\,\text{Sin}[2\,(c+d\,x)]+24286500\,\text{Sin}[3\,(c+d\,x)]\Big)$$

Problem 531: Unable to integrate problem.

$$\int \text{Sec}[c+d\,x]^3\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 292 leaves, 5 steps):

$$\frac{1}{15\,b^3\,d}2\,(a-b)\,\sqrt{a+b}\,\left(2\,a^2-9\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{15\,b^2\,d}$$
$$2\,(a-b)\,\sqrt{a+b}\,(2\,a+9\,b)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-$$
$$\frac{4\,a\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{15\,b\,d}+\frac{2\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,\text{Tan}[c+d\,x]}{5\,b\,d}$$

Result (type 8, 25 leaves):

$$\int \text{Sec}[c+d\,x]^3\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Problem 532: Unable to integrate problem.

$$\int \text{Sec}[c+d x]^2 \sqrt{a+b\,\text{Sec}[c+d x]}\, dx$$

Optimal (type 4, 241 leaves, 4 steps):

$$-\frac{1}{3 b^2 d} 2 a (a-b) \sqrt{a+b}\, \text{Cot}[c+d x]\, \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}} - \frac{1}{3 b d} 2 (a-b) \sqrt{a+b}\, \text{Cot}[c+d x]\, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}} + \frac{2 \sqrt{a+b\,\text{Sec}[c+d x]}\, \text{Tan}[c+d x]}{3 d}$$

Result (type 8, 25 leaves):

$$\int \text{Sec}[c+d x]^2 \sqrt{a+b\,\text{Sec}[c+d x]}\, dx$$

Problem 534: Unable to integrate problem.

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

Optimal (type 4, 125 leaves, 1 step):

$$-\frac{1}{\sqrt{a+b}\, d} 2\, \text{Cot}[c+d x]\, \text{EllipticPi}\left[\frac{a}{a+b}, \text{ArcSin}\left[\frac{\sqrt{a+b}}{\sqrt{a+b\,\text{Sec}[c+d x]}}\right], \frac{a-b}{a+b}\right] \sqrt{-\frac{b (1-\text{Sec}[c+d x])}{a+b\,\text{Sec}[c+d x]}} \sqrt{\frac{b (1+\text{Sec}[c+d x])}{a+b\,\text{Sec}[c+d x]}} (a+b\,\text{Sec}[c+d x])$$

Result (type 8, 16 leaves):

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

Problem 535: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d x] \sqrt{a+b\,\text{Sec}[c+d x]}\, dx$$

Optimal (type 4, 330 leaves, 6 steps):

$$\frac{1}{b\,d}(a-b)\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{d}\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{a\,d}b\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}$$

Result (type 4, 2713 leaves):

$$\left(\text{Cos}[c+d\,x]\sqrt{\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sec}[c+d\,x]}\sqrt{a+b\,\text{Sec}[c+d\,x]}\left(i\,(a-b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+2\,i\,b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-\sqrt{2}\sqrt{\frac{-a+b}{a+b}}\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,(b+a\,\text{Cos}[c+d\,x])\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg/\left(\sqrt{\frac{-a+b}{a+b}}\,d\sqrt{b+a\,\text{Cos}[c+d\,x]}\sqrt{\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^4}\right.$$

$$\left(\frac{1}{\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\sqrt{\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^4}}\right.$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(\mathbb{i}\,(a-b)\,\text{EllipticE}\left[\mathbb{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\right.$$

$$\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+2\,\mathbb{i}\,b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathbb{i}\,\text{ArcSinh}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{-a+b}{a+b}}\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-$$

$$\left.\sqrt{2}\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,\,(b+a\,\text{Cos}[c+d\,x])\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,+$$

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

$$a\,\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\,\,\text{Sin}[c+d\,x]$$

$$\left(\mathbb{i}\,(a-b)\,\text{EllipticE}\left[\mathbb{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\right.$$

$$\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$2\,\mathbb{i}\,b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathbb{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\,\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-\sqrt{2}\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}$$

$$\left.(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-$$

$$\frac{1}{2\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\,\left(\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^4\right)^{3/2}}$$

$$\sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Sec}[c+d\,x]}$$

$$\left(\mathrm{i}\,(a-b)\,\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\right.$$

$$\sqrt{\frac{(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+2\,\mathrm{i}\,b\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{\frac{(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}-$$

$$\left.\sqrt{2}\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\,(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

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

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

$$\frac{1}{\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^4}}$$

$$\sqrt{\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Sec}[c+d\,x]}\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(-\frac{\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\,(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{\sqrt{2}}+\right.$$

$$\sqrt{2}\,a\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-$$

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

$$\left(\text{i}\ (a-b)\ \text{EllipticE}\left[\text{i}\ \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{a+b}{a-b}\right]\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\,\text{Sin}[c+d\,x]}{a+b}+\frac{1}{a+b}(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right)\right)\Bigg/\left(2\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}}\right)+$$

$$\left(\text{i}\ b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\ \text{i}\ \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{a+b}{a-b}\right]\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\,\text{Sin}[c+d\,x]}{a+b}+\frac{1}{a+b}(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right)\right)\Bigg/\left(\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}}\right)-$$

$$\left(b\sqrt{\frac{-a+b}{a+b}}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}}\right)\Bigg/\left(\left(1-\frac{(-a+b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a-b}\right)\sqrt{1+\frac{(-a+b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a-b}}\ \sqrt{1+\frac{(-a+b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}}\right)-$$

$$\left((a-b)\ \sqrt{\frac{-a+b}{a+b}}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{\frac{(b+a\,\text{Cos}[c+d\,x])\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}}\right.$$

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

$$\left(\left(\mathrm{i}\,(a-b)\,\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\right.\right.$$

$$\sqrt{\frac{(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+2\,\mathrm{i}\,b\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\mathrm{i}\,\mathrm{ArcSinh}\left[\right.\right.$$

$$\left.\left.\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{\frac{(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-$$

$$\left.\sqrt{2}\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\,(b+a\,\mathrm{Cos}[c+d\,x])\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

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

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

$$\left(2\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Cos}[c+d\,x]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^4}\right.$$

$$\left.\left.\sqrt{\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Sec}[c+d\,x]}\right)\right)$$

Problem 536: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]^2\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 396 leaves, 7 steps):

$$\frac{1}{4\,a\,d}(a-b)\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{4\,a\,d}\sqrt{a+b}\;(2\,a+b)\;\text{Cot}[c+d\,x]$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-$$
$$\frac{1}{4\,a^2\,d}\sqrt{a+b}\;(4\,a^2-b^2)\;\text{Cot}[c+d\,x]\;\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+$$
$$\frac{b\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{4\,a\,d}+\frac{\text{Cos}[c+d\,x]\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{2\,d}$$

Result (type 4, 1173 leaves):

$$\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[2\,(c+d\,x)]}{4\,d}+$$
$$\left(\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right.$$
$$\left(a\,b\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b^2\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\,a\,b\sqrt{\frac{-a+b}{a+b}}\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+a\,b\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-b^2\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-$$
$$8\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\;\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+$$
$$2\,i\,b^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\;\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-$$

$$8\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

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

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

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

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

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

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

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

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

$$\left(4\,a\,\sqrt{\frac{-a+b}{a+b}}\,d\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right.$$

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

$$\left.\left(a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)$$

Problem 537: Unable to integrate problem.

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

Optimal (type 4, 405 leaves, 7 steps):

$$-\frac{1}{315\,b^4\,d}2\,(a-b)\,\sqrt{a+b}\,(8\,a^4+33\,a^2\,b^2+147\,b^4)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{315\,b^3\,d}2\,(a-b)\,\sqrt{a+b}\,(8\,a^3+6\,a^2\,b+39\,a\,b^2-147\,b^3)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{2\,a\,(8\,a^2+39\,b^2)\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{315\,b^2\,d}+\frac{2\,(8\,a^2+49\,b^2)\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,\text{Tan}[c+d\,x]}{315\,b^2\,d}-\frac{8\,a\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,\text{Tan}[c+d\,x]}{63\,b^2\,d}+\frac{2\,\text{Sec}[c+d\,x]\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,\text{Tan}[c+d\,x]}{9\,b\,d}$$

Result (type 8, 25 leaves):

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

Problem 538: Unable to integrate problem.

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

Optimal (type 4, 342 leaves, 6 steps):

$$\frac{1}{105\,b^3\,d}4\,a\,(a-b)\,\sqrt{a+b}\,(3\,a^2-41\,b^2)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{105\,b^2\,d}2\,(a-b)\,\sqrt{a+b}\,(6\,a^2+57\,a\,b-25\,b^2)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{2\,(6\,a^2-25\,b^2)\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{105\,b\,d}-\frac{4\,a\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,\text{Tan}[c+d\,x]}{35\,b\,d}+\frac{2\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,\text{Tan}[c+d\,x]}{7\,b\,d}$$

Result (type 8, 25 leaves):

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

Problem 539: Unable to integrate problem.

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

Optimal (type 4, 282 leaves, 5 steps):

$$-\frac{1}{5\,b^2\,d}2\,(a-b)\,\sqrt{a+b}\,\left(a^2+3\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{5\,b\,d}2\,(a-3\,b)\,(a-b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{2\,a\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{5\,d}+\frac{2\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\,\text{Tan}[c+d\,x]}{5\,d}$$

Result (type 8, 25 leaves):

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

Problem 540: Attempted integration timed out after 120 seconds.

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

Optimal (type 4, 249 leaves, 4 steps):

$$-\frac{1}{3\,b\,d}8\,a\,(a-b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{3\,b\,d}2\,(a-b)\,(3\,a-b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{2\,b\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{3\,d}$$

Result (type 1, 1 leaves):

???

Problem 541: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 4, 309 leaves, 5 steps):

$$-\frac{1}{d} 2 (a - b) \sqrt{a + b} \operatorname{Cot}[c + d x] \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a + b \operatorname{Sec}[c + d x]}}{\sqrt{a + b}}\right], \frac{a + b}{a - b}\right] \sqrt{\frac{b (1 - \operatorname{Sec}[c + d x])}{a + b}} \sqrt{-\frac{b (1 + \operatorname{Sec}[c + d x])}{a - b}} + \frac{1}{d} 2 (2 a - b) \sqrt{a + b} \operatorname{Cot}[c + d x] \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a + b \operatorname{Sec}[c + d x]}}{\sqrt{a + b}}\right], \frac{a + b}{a - b}\right] \sqrt{\frac{b (1 - \operatorname{Sec}[c + d x])}{a + b}} \sqrt{-\frac{b (1 + \operatorname{Sec}[c + d x])}{a - b}} - \frac{1}{d} 2 a \sqrt{a + b} \operatorname{Cot}[c + d x] \operatorname{EllipticPi}\left[\frac{a + b}{a}, \operatorname{ArcSin}\left[\frac{\sqrt{a + b \operatorname{Sec}[c + d x]}}{\sqrt{a + b}}\right], \frac{a + b}{a - b}\right] \sqrt{\frac{b (1 - \operatorname{Sec}[c + d x])}{a + b}} \sqrt{-\frac{b (1 + \operatorname{Sec}[c + d x])}{a - b}}$$

Result (type 4, 882 leaves):

$$\frac{2 b \operatorname{Cos}[c + d x] (a + b \operatorname{Sec}[c + d x])^{3/2} \operatorname{Sin}[c + d x]}{d (b + a \operatorname{Cos}[c + d x])} + \Bigg(2 (a + b \operatorname{Sec}[c + d x])^{3/2} \Bigg(a b \sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right] + b^2 \sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right] - 2 a b \sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right]^3 + a b \sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right]^5 - b^2 \sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right]^5 + 2 i a^2 \operatorname{EllipticPi}\left[-\frac{a + b}{a - b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a + b}{a + b}} \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right]\right], \frac{a + b}{a - b}\right]$$

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

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

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

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

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

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

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

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

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

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

Problem 542: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 334 leaves, 6 steps):

$$\frac{1}{b\,d}a\,(a-b)\,\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{d}\sqrt{a+b}\;(a+2\,b)\;\text{Cot}[c+d\,x]$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-$$
$$\frac{1}{d}3\,b\,\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{a\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{d}$$

Result (type 4, 642 leaves) :

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

$$\left(-i\,a\,(a-b)\,\mathrm{EllipticE}\left[i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right.$$

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

$$b\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-6\,i\,a\,b$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}$$

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

$$\left.\left.a\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(b-b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\right)\right)\Bigg/$$

$$\left(\sqrt{\frac{-a+b}{a+b}}\,d\,(b+a\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sec}[c+d\,x]^{3/2}\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right.$$

$$\left.\left(b-b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\right)$$

Problem 543: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]^2\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}\,dx$$

Optimal (type 4, 390 leaves, 7 steps):

$$\frac{1}{4 d} 5 (a-b) \sqrt{a+b} \operatorname{Cot}[c+d x] \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\operatorname{Sec}[c+d x])}{a-b}}+\frac{1}{4 d} \sqrt{a+b} (2 a+5 b) \operatorname{Cot}[c+d x] \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\operatorname{Sec}[c+d x])}{a-b}}-\frac{1}{4 a d} \sqrt{a+b} \left(4 a^2+3 b^2\right) \operatorname{Cot}[c+d x] \operatorname{EllipticPi}\left[\frac{a+b}{a}, \operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\operatorname{Sec}[c+d x])}{a-b}}+\frac{5 b \sqrt{a+b \operatorname{Sec}[c+d x]} \operatorname{Sin}[c+d x]}{4 d}+\frac{a \operatorname{Cos}[c+d x] \sqrt{a+b \operatorname{Sec}[c+d x]} \operatorname{Sin}[c+d x]}{2 d}$$

Result (type 4, 1159 leaves):

$$\frac{a \operatorname{Cos}[c+d x] (a+b \operatorname{Sec}[c+d x])^{3/2} \operatorname{Sin}[2 (c+d x)]}{4 d (b+a \operatorname{Cos}[c+d x])}-\left((a+b \operatorname{Sec}[c+d x])^{3/2} \left(5 a b \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]+5 b^2 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]-10 a b \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^3+5 a b \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^5-5 b^2 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^5-8 i a^2 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a+b}{a-b}\right] \sqrt{1-\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}-6 i b^2 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a+b}{a-b}\right] \sqrt{1-\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}-\right.\right.$$

$$8\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

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

$$6\,i\,b^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

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

$$5\,i\,(a-b)\,b\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

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

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

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

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

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

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

Problem 544: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^4\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 463 leaves, 8 steps):

$$-\frac{1}{693\, b^4\, d} 2\, a\, (a-b)\, \sqrt{a+b}\, \left(8\, a^4+51\, a^2\, b^2+741\, b^4\right) \mathrm{Cot}[c+d\, x]\, \mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\frac{\sqrt{a+b\, \mathrm{Sec}[c+d\, x]}}{\sqrt{a+b}}\Big], \frac{a+b}{a-b}\Big] \sqrt{\frac{b\, (1-\mathrm{Sec}[c+d\, x])}{a+b}} \sqrt{-\frac{b\, (1+\mathrm{Sec}[c+d\, x])}{a-b}} - \frac{1}{693\, b^3\, d} 2\, (a-b)\, \sqrt{a+b}\, \left(8\, a^4+6\, a^3\, b+57\, a^2\, b^2-606\, a\, b^3+135\, b^4\right) \mathrm{Cot}[c+d\, x]\, \mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\frac{\sqrt{a+b\, \mathrm{Sec}[c+d\, x]}}{\sqrt{a+b}}\Big], \frac{a+b}{a-b}\Big] \sqrt{\frac{b\, (1-\mathrm{Sec}[c+d\, x])}{a+b}} \sqrt{-\frac{b\, (1+\mathrm{Sec}[c+d\, x])}{a-b}} + \frac{2\, \left(8\, a^4+57\, a^2\, b^2+135\, b^4\right) \sqrt{a+b\, \mathrm{Sec}[c+d\, x]}\, \mathrm{Tan}[c+d\, x]}{693\, b^2\, d} + \frac{2\, a\, \left(8\, a^2+67\, b^2\right) (a+b\, \mathrm{Sec}[c+d\, x])^{3/2}\, \mathrm{Tan}[c+d\, x]}{693\, b^2\, d} + \frac{2\, \left(8\, a^2+81\, b^2\right) (a+b\, \mathrm{Sec}[c+d\, x])^{5/2}\, \mathrm{Tan}[c+d\, x]}{693\, b^2\, d} - \frac{8\, a\, (a+b\, \mathrm{Sec}[c+d\, x])^{7/2}\, \mathrm{Tan}[c+d\, x]}{99\, b^2\, d} + \frac{2\, \mathrm{Sec}[c+d\, x]\, (a+b\, \mathrm{Sec}[c+d\, x])^{7/2}\, \mathrm{Tan}[c+d\, x]}{11\, b\, d}$$

Result (type 1, 1 leaves):

???

Problem 545: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c+d\, x]^3\, (a+b\, \mathrm{Sec}[c+d\, x])^{5/2}\, dx$$

Optimal (type 4, 399 leaves, 7 steps):

$$\frac{1}{315\, b^3\, d} 2\, (a-b)\, \sqrt{a+b}\, \left(10\, a^4 - 279\, a^2\, b^2 - 147\, b^4\right) \text{Cot}[c+d\,x]$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}} \sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}} +$$

$$\frac{1}{315\, b^2\, d} 2\, (a-b)\, \sqrt{a+b}\, \left(10\, a^3 + 165\, a^2\, b - 114\, a\, b^2 + 147\, b^3\right) \text{Cot}[c+d\,x]$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}} \sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}} -$$

$$\frac{4\, a\, \left(5\, a^2 - 57\, b^2\right) \sqrt{a+b\,\text{Sec}[c+d\,x]}\, \text{Tan}[c+d\,x]}{315\, b\, d} -$$

$$\frac{2\, \left(10\, a^2 - 49\, b^2\right) (a+b\,\text{Sec}[c+d\,x])^{3/2}\, \text{Tan}[c+d\,x]}{315\, b\, d} -$$

$$\frac{4\, a\, (a+b\,\text{Sec}[c+d\,x])^{5/2}\, \text{Tan}[c+d\,x]}{63\, b\, d} + \frac{2\, (a+b\,\text{Sec}[c+d\,x])^{7/2}\, \text{Tan}[c+d\,x]}{9\, b\, d}$$

Result (type 1, 1 leaves):

???

Problem 546: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^2\, (a+b\,\text{Sec}[c+d\,x])^{5/2}\, dx$$

Optimal (type 4, 333 leaves, 6 steps):

$$-\frac{1}{21\, b^2\, d}$$

$$2\, a\, (a-b)\, \sqrt{a+b}\, \left(3\, a^2 + 29\, b^2\right) \text{Cot}[c+d\,x]\, \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}} \sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}} - \frac{1}{21\, b\, d}$$

$$2\, (a-b)\, \sqrt{a+b}\, \left(3\, a^2 - 24\, a\, b + 5\, b^2\right) \text{Cot}[c+d\,x]\, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}} \sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}} + \frac{2\, \left(3\, a^2 + 5\, b^2\right) \sqrt{a+b\,\text{Sec}[c+d\,x]}\, \text{Tan}[c+d\,x]}{21\, d} +$$

$$\frac{2\, a\, (a+b\,\text{Sec}[c+d\,x])^{3/2}\, \text{Tan}[c+d\,x]}{7\, d} + \frac{2\, (a+b\,\text{Sec}[c+d\,x])^{5/2}\, \text{Tan}[c+d\,x]}{7\, d}$$

Result (type 1, 1 leaves):

???

Problem 547: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c+d\,x]\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 296 leaves, 5 steps):

$$-\frac{1}{15\,b\,d}2\,(a-b)\,\sqrt{a+b}\,\left(23\,a^2+9\,b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+\frac{1}{15\,b\,d}2\,(a-b)\,\sqrt{a+b}\,\left(15\,a^2-8\,a\,b+9\,b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+\frac{16\,a\,b\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]}{15\,d}+\frac{2\,b\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}\,\mathrm{Tan}[c+d\,x]}{5\,d}$$

Result (type 1, 1 leaves):

???

Problem 548: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 352 leaves, 6 steps):

$$-\frac{1}{3\,d}14\,a\,(a-b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{3\,d}$$

$$2\,\sqrt{a+b}\,\left(9\,a^2-7\,a\,b+b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{d}$$

$$2\,a^2\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticPi}\Big[\frac{a+b}{a},\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{2\,b^2\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{3\,d}$$

Result (type 4, 713 leaves) :

$$\left(2\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\left(-7\,i\,a\,(a-b)\,b\,\mathrm{EllipticE}\left[i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\right.\right.$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;-\,i\,(3\,a^3-9\,a^2\,b+7\,a\,b^2-b^3)$$

$$\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+6\,i\,a^3$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

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

$$\left(3\,\sqrt{\frac{-a+b}{a+b}}\,d\,(b+a\,\mathrm{Cos}[c+d\,x])^{5/2}\,\mathrm{Sec}[c+d\,x]^{5/2}\,\sqrt{\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right.$$

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

$$\left.\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)+$$

$$\left(\mathrm{Cos}[c+d\,x]^2\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\left(\frac{14}{3}\,a\,b\,\mathrm{Sin}[c+d\,x]+\frac{2}{3}\,b^2\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/$$

$$\left(d\,(b+a\,\mathrm{Cos}[c+d\,x])^2\right)$$

Problem 549: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 353 leaves, 6 steps):

$$\frac{1}{b\,d}(a-b)\sqrt{a+b}\,\left(a^2-2b^2\right)\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{d}\sqrt{a+b}\,\left(a^2+6\,a\,b-2\,b^2\right)\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{d}5\,a\,b\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{a^2\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d}$$

Result (type 4, 784 leaves):

$$\frac{2\,b^2\,\text{Cos}[c+d\,x]^2\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,\text{Sin}[c+d\,x]}{d\,(b+a\,\text{Cos}[c+d\,x])^2}+\left((a+b\,\text{Sec}[c+d\,x])^{5/2}\sqrt{\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\left(a^3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a^2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\,a\,b^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\,b^3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\,a^3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+4\,a\,b^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+a^3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-a^2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-2\,a\,b^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+2\,b^3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-10\,a^2\,b\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-10\,a^2\,b\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+\left(a^3+a^2\,b-2\,a\,b^2-2\,b^3\right)\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right.$$

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

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

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

$$\left(d\,(b+a\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sec}[c+d\,x]^{5/2}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{3/2}\right.$$

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

Problem 550: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^2\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 399 leaves, 7 steps):

$$\frac{1}{4\,d}9\,a\,(a-b)\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{4\,d}\sqrt{a+b}\left(2\,a^2+9\,a\,b+8\,b^2\right)\text{Cot}[c+d\,x]$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-$$

$$\frac{1}{4\,d}\sqrt{a+b}\left(4\,a^2+15\,b^2\right)\text{Cot}[c+d\,x]\,\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+$$

$$\frac{9\,a\,b\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{4\,d}+\frac{a^2\,\text{Cos}[c+d\,x]\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,d}$$

Result (type 4, 4588 leaves):

$$\frac{a^2 \operatorname{Cos}[c+d x]^2 \left(a+b \operatorname{Sec}[c+d x]\right)^{5/2} \operatorname{Sin}\left[2 \left(c+d x\right)\right]}{4 d \left(b+a \operatorname{Cos}[c+d x]\right)^2}+$$

$$\left(\left(\frac{a^3}{2 \sqrt{b+a \operatorname{Cos}[c+d x]} \sqrt{\operatorname{Sec}[c+d x]}}+\frac{3 a b^2}{\sqrt{b+a \operatorname{Cos}[c+d x]} \sqrt{\operatorname{Sec}[c+d x]}}+\right.\right.$$

$$\left.\frac{11 a^2 b \sqrt{\operatorname{Sec}[c+d x]}}{8 \sqrt{b+a \operatorname{Cos}[c+d x]}}+\frac{b^3 \sqrt{\operatorname{Sec}[c+d x]}}{\sqrt{b+a \operatorname{Cos}[c+d x]}}+\frac{9 a^2 b \operatorname{Cos}\left[2 \left(c+d x\right)\right] \sqrt{\operatorname{Sec}[c+d x]}}{8 \sqrt{b+a \operatorname{Cos}[c+d x]}}\right)$$

$$\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2} \left(18 i a \left(a-b\right) b \sqrt{\frac{\operatorname{Cos}[c+d x]}{1+\operatorname{Cos}[c+d x]}} \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{\left(a+b\right) \left(1+\operatorname{Cos}[c+d x]\right)}}\right.$$

$$\operatorname{EllipticE}\left[i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]\right], \frac{a+b}{a-b}\right]-$$

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

$$\operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]\right], \frac{a+b}{a-b}\right]+$$

$$4 i a \left(4 a^2+15 b^2\right) \sqrt{\frac{\operatorname{Cos}[c+d x]}{1+\operatorname{Cos}[c+d x]}} \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{\left(a+b\right) \left(1+\operatorname{Cos}[c+d x]\right)}}$$

$$\operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]\right], \frac{a+b}{a-b}\right]-$$

$$\left.\left.9 a b \sqrt{\frac{-a+b}{a+b}} \operatorname{Cos}[c+d x] \left(b+a \operatorname{Cos}[c+d x]\right) \operatorname{Sec}\left[\frac{1}{2} \left(c+d x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]\right)\right) \Big/$$

$$\left(4 \sqrt{\frac{-a+b}{a+b}} d \left(b+a \operatorname{Cos}[c+d x]\right)^3 \sqrt{\operatorname{Sec}\left[\frac{1}{2} \left(c+d x\right)\right]^2} \operatorname{Sec}[c+d x]^{5/2}\right.$$

$$\sqrt{\operatorname{Cos}\left[\frac{1}{2} \left(c+d x\right)\right]^2 \operatorname{Sec}[c+d x]} \left(-1+\operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]^2\right)$$

$$\left(-\left(\left(\left(\sqrt{\operatorname{Sec}\left[\frac{1}{2} \left(c+d x\right)\right]^2} \operatorname{Tan}\left[\frac{1}{2} \left(c+d x\right)\right]\right.\right.\right.\right.$$

$$\Bigg(18\, i\, a\, (a-b)\, b \sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}} \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}$$

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

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

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\ \frac{a+b}{a-b}\right] + 4\, i\, a\, \left(4 a^2 + 15 b^2\right)$$

$$\sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}} \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}\ \text{EllipticPi}\left[-\frac{a+b}{a-b},\ i\right.$$

$$\left.\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\ \frac{a+b}{a-b}\right] - 9\, a\, b \sqrt{\frac{-a+b}{a+b}}\ \text{Cos}[c+d x]$$

$$\left.\left.(b+a\,\text{Cos}[c+d x])\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right) \Bigg/ \left(4 \sqrt{\frac{-a+b}{a+b}}\right.$$

$$\left.\sqrt{b+a\,\text{Cos}[c+d x]} \sqrt{\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \text{Sec}[c+d x]}\ \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Bigg) +$$

$$\Bigg(a\,\text{Sin}[c+d x]\ \Bigg(18\, i\, a\, (a-b)\, b \sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}} \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}$$

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

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

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

$$4\, i\, a\, \left(4 a^2 + 15 b^2\right) \sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}} \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}$$

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

$$9\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Cos}[c+d\,x]\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(8\,\sqrt{\frac{-a+b}{a+b}}\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{3/2}\,\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)-$$

$$\Bigg(\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\Bigg(18\,i\,a\,(a-b)\,b\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,\left(1+\text{Cos}[c+d\,x]\right)}}$$

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

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

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

$$4\,i\,a\,\left(4\,a^2+15\,b^2\right)\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,\left(1+\text{Cos}[c+d\,x]\right)}}$$

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

$$9\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Cos}[c+d\,x]\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(8\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sec}[c+d\,x]}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)+$$

$$\left(-\frac{9}{2}\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Cos}[c+d\,x]\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^4+\right.$$

$$\frac{1}{\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}}9\,i\,a\,(a-b)\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}$$

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

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

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

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

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

$$\frac{1}{\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}}2\,i\,a\,\left(4\,a^2+15\,b^2\right)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}$$

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

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

$$\left(9\,i\,a\,(a-b)\,b\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\right.\right.$$

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

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

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

$$\left(-\frac{a\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}+\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])^2}\right)\bigg/$$

$$\left(\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)+\left(2\,i\,a\,(4\,a^2+15\,b^2)\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\right.$$

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

$$\left(-\frac{a\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}+\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])^2}\right)\bigg/$$

$$\left(\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)+9\,a^2\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Cos}[c+d\,x]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$9\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Sin}[c+d\,x]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-$$

$$9\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Cos}[c+d\,x]\,(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$\left(2\,\sqrt{\frac{-a+b}{a+b}}\,(2\,a^3-a^2\,b+3\,a\,b^2-4\,b^3)\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\right.$$

$$\left.\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\bigg/$$

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

$$\left(2\,a\,\sqrt{\frac{-a+b}{a+b}}\,(4\,a^2+15\,b^2)\,\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg/ \left(\left(1-\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a-b}\right)\right.$$

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

$$\left(9\,a\,(a-b)\,b\,\sqrt{\frac{-a+b}{a+b}}\ \sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}\ \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

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

$$\left(4\sqrt{\frac{-a+b}{a+b}}\ \sqrt{b+a\,\text{Cos}[c+d x]}\ \sqrt{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}\ \sqrt{\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\text{Sec}[c+d x]}\right.$$

$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)-$$

$$\left(\left(18\,i\,a\,(a-b)\,b\,\sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}\right.\right.$$

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

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

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

$$4\,i\,a\,\left(4\,a^2+15\,b^2\right)\sqrt{\frac{\text{Cos}[c+d x]}{1+\text{Cos}[c+d x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{(a+b)\,(1+\text{Cos}[c+d x])}}$$

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

$$9\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Cos}[c+d\,x]\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)$$

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

$$\left(8\,\sqrt{\frac{-a+b}{a+b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Sec}[c+d\,x]\right)^{3/2}\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)$$

Problem 551: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 460 leaves, 8 steps):

$$\frac{1}{24\,b\,d}(a-b)\,\sqrt{a+b}\,\left(16\,a^2+33\,b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\,\frac{a+b}{a-b}\right]\,\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+\frac{1}{24\,d}\sqrt{a+b}\,\left(16\,a^2+26\,a\,b+33\,b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\,\frac{a+b}{a-b}\right]\,\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}-\frac{1}{8\,a\,d}5\,b\,\sqrt{a+b}\,\left(4\,a^2+b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticPi}\left[\frac{a+b}{a},\,\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\,\frac{a+b}{a-b}\right]\,\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+\frac{\left(16\,a^2+33\,b^2\right)\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{24\,d}+\frac{13\,a\,b\,\mathrm{Cos}[c+d\,x]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{12\,d}+\frac{a^2\,\mathrm{Cos}[c+d\,x]^2\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{3\,d}$$

Result (type 4, 1026 leaves):

$$\left(\text{Cos}[c+d\,x]^2\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\right.$$
$$\left.\left(\frac{1}{12}\,a^2\,\text{Sin}[c+d\,x]+\frac{13}{24}\,a\,b\,\text{Sin}\left[2\,\left(c+d\,x\right)\right]+\frac{1}{12}\,a^2\,\text{Sin}\left[3\,\left(c+d\,x\right)\right]\right)\right)\Big/$$
$$\left(d\,\left(b+a\,\text{Cos}[c+d\,x]\right)^2\right)+\left(\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\,\sqrt{\frac{1}{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}}\right.$$
$$\left(16\,a^3\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+16\,a^2\,b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+33\,a\,b^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+\right.$$
$$33\,b^3\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]-32\,a^3\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^3-66\,a\,b^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^3+$$
$$16\,a^3\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^5-16\,a^2\,b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^5+33\,a\,b^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^5-$$
$$33\,b^3\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^5-120\,a^2\,b\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right],\frac{a-b}{a+b}\right]$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{a+b}}-$$
$$30\,b^3\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right],\frac{a-b}{a+b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}$$
$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{a+b}}-$$
$$120\,a^2\,b\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right],\frac{a-b}{a+b}\right]\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{a+b}}-$$
$$30\,b^3\,\text{EllipticPi}\left[-1,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right],\frac{a-b}{a+b}\right]\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{a+b}}+$$
$$\left(16\,a^3+16\,a^2\,b+33\,a\,b^2+33\,b^3\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right],\frac{a-b}{a+b}\right]$$
$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)$$

$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;-2\,b\,\left(38\,a^2-13\,a\,b+24\,b^2\right)$$

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

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

$$\left(24\,d\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{5/2}\,\text{Sec}[c+d\,x]^{5/2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^{3/2}\right.$$

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

Problem 552: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[c+d\,x]^4\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 4, 530 leaves, 9 steps):

$$\frac{1}{192\, a\, d}(a-b)\sqrt{a+b}\left(284 a^2+15 b^2\right)\text{Cot}[c+d x]$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}+$$

$$\frac{1}{192\, a\, d}\sqrt{a+b}\left(72 a^3+284 a^2 b+118 a b^2+15 b^3\right)\text{Cot}[c+d x]$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}-$$

$$\frac{1}{64\, a^2\, d}\sqrt{a+b}\left(48 a^4+120 a^2 b^2-5 b^4\right)\text{Cot}[c+d x]$$

$$\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}$$

$$\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}+\frac{b\left(284 a^2+15 b^2\right)\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{192\, a\, d}+$$

$$\frac{\left(36 a^2+59 b^2\right)\text{Cos}[c+d x]\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{96\, d}+$$

$$\frac{17\, a\, b\,\text{Cos}[c+d x]^2\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{24\, d}+$$

$$\frac{a^2\,\text{Cos}[c+d x]^3\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{4\, d}$$

Result (type 4, 1688 leaves):

$$\left(\text{Cos}[c+d x]^2\left(a+b\,\text{Sec}[c+d x]\right)^{5/2}\left(\frac{17}{96}a\, b\,\text{Sin}[c+d x]+\frac{1}{192}\left(48 a^2+59 b^2\right)\text{Sin}[2\,(c+d x)]+\right.\right.$$

$$\left.\left.\frac{17}{96}a\, b\,\text{Sin}[3\,(c+d x)]+\frac{1}{32}a^2\,\text{Sin}[4\,(c+d x)]\right)\right)\Big/\left(d\left(b+a\,\text{Cos}[c+d x]\right)^2\right)+$$

$$\left(\left(a+b\,\text{Sec}[c+d x]\right)^{5/2}\left(-284 a^3 b\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-284 a^2 b^2\sqrt{\frac{-a+b}{a+b}}\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]-15 a b^3\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-15 b^4\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$568 a^3 b\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^3+30 a b^3\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^3-$$

$$284 a^3 b\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^5+284 a^2 b^2\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^5-$$

$$15\,a\,b^3\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+15\,b^4\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+$$

$$288\,i\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

$$720\,i\,a^2\,b^2\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

$$30\,i\,b^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+288\,i\,a^4$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+720\,i\,a^2\,b^2$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

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

$$30\,i\,b^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+i\,b\,\left(284\,a^3-284\,a^2\,b+15\,a\,b^2-15\,b^3\right)$$

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

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

$$2\,i\,\left(72\,a^4-36\,a^3\,b+38\,a^2\,b^2-59\,a\,b^3-15\,b^4\right)$$

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

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

$$\left(192\,a\,\sqrt{\frac{-a+b}{a+b}}\,d\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{5/2}\,\text{Sec}[c+d\,x]^{5/2}\,\sqrt{\frac{1}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right.$$

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

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

Problem 553: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a+b\,\text{Sec}[c+d\,x])^{7/2}\,dx$$

Optimal (type 4, 403 leaves, 7 steps):

$$-\frac{1}{15\,d}2\,(a-b)\,\sqrt{a+b}\,\left(58\,a^2+9\,b^2\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+$$
$$\frac{1}{15\,d}2\,\sqrt{a+b}\,\left(60\,a^3-58\,a^2\,b+22\,a\,b^2-9\,b^3\right)\,\mathrm{Cot}[c+d\,x]$$
$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\,\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}-$$
$$\frac{1}{d}2\,a^3\,\sqrt{a+b}\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticPi}\left[\frac{a+b}{a},\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}+$$
$$\frac{26\,a\,b^2\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]}{15\,d}+\frac{2\,b^2\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}\,\mathrm{Tan}[c+d\,x]}{5\,d}$$

Result (type 4, 1150 leaves):

$$\left(2\,(a+b\,\mathrm{Sec}[c+d\,x])^{7/2}\,\left(58\,a^3\,b\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+58\,a^2\,b^2\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\right.\right.$$
$$9\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+9\,b^4\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-$$
$$116\,a^3\,b\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^3-18\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^3+$$
$$58\,a^3\,b\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-58\,a^2\,b^2\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+$$
$$9\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-9\,b^4\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+$$
$$30\,i\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]$$
$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+$$

$$30\,\mathrm{i}\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

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

$$\mathrm{i}\,b\left(-58\,a^3+58\,a^2\,b-9\,a\,b^2+9\,b^3\right)\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

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

$$\mathrm{i}\left(15\,a^4-60\,a^3\,b+58\,a^2\,b^2-22\,a\,b^3+9\,b^4\right)$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}$$

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

$$\Bigg(15\sqrt{\frac{-a+b}{a+b}}\,d\,(b+a\,\mathrm{Cos}[c+d\,x])^{7/2}\,\mathrm{Sec}[c+d\,x]^{7/2}\sqrt{\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

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

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\Bigg)+$$

$$\Bigg(\mathrm{Cos}[c+d\,x]^3\,(a+b\,\mathrm{Sec}[c+d\,x])^{7/2}\left(\frac{2}{15}\,b\left(58\,a^2+9\,b^2\right)\mathrm{Sin}[c+d\,x]+\right.$$

$$\left.\frac{32}{15}\,a\,b^2\,\mathrm{Tan}[c+d\,x]+\frac{2}{5}\,b^3\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\Bigg)\Bigg/\left(d\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^3\right)$$

Problem 554: Unable to integrate problem.

$$\int\frac{\mathrm{Sec}[c+d\,x]^5}{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 359 leaves, 6 steps):

$$\frac{1}{105\,b^5\,d}8\,a\,(a-b)\,\sqrt{a+b}\,\left(12\,a^2+11\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{105\,b^4\,d}2\,\sqrt{a+b}\,\left(48\,a^3-12\,a^2\,b+44\,a\,b^2+25\,b^3\right)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{2\,\left(24\,a^2+25\,b^2\right)\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{105\,b^3\,d}-\frac{12\,a\,\text{Sec}[c+d\,x]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{35\,b^2\,d}+\frac{2\,\text{Sec}[c+d\,x]^2\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{7\,b\,d}$$

Result (type 8, 25 leaves):

$$\int\frac{\text{Sec}[c+d\,x]^5}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Problem 555: Unable to integrate problem.

$$\int\frac{\text{Sec}[c+d\,x]^4}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 301 leaves, 5 steps):

$$-\frac{1}{15\,b^4\,d}2\,(a-b)\,\sqrt{a+b}\,\left(8\,a^2+9\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{15\,b^3\,d}2\,\sqrt{a+b}\,\left(8\,a^2-2\,a\,b+9\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{8\,a\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{15\,b^2\,d}+\frac{2\,\text{Sec}[c+d\,x]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{5\,b\,d}$$

Result (type 8, 25 leaves):

$$\int\frac{\text{Sec}[c+d\,x]^4}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Problem 556: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d x]^3}{\sqrt{a+b\,\text{Sec}[c+d x]}}\, dx$$

Optimal (type 4, 244 leaves, 4 steps):

$$\frac{1}{3 b^3 d} 4 a (a-b) \sqrt{a+b}\ \text{Cot}[c+d x]\ \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}} + \frac{1}{3 b^2 d} 2 \sqrt{a+b}\ (2 a+b)\ \text{Cot}[c+d x]\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}} + \frac{2 \sqrt{a+b\,\text{Sec}[c+d x]}\ \text{Tan}[c+d x]}{3 b d}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d x]^3}{\sqrt{a+b\,\text{Sec}[c+d x]}}\, dx$$

Problem 557: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d x]^2}{\sqrt{a+b\,\text{Sec}[c+d x]}}\, dx$$

Optimal (type 4, 204 leaves, 3 steps):

$$-\frac{1}{b^2 d} 2 (a-b) \sqrt{a+b}\ \text{Cot}[c+d x]\ \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}} - \frac{1}{b d} 2 \sqrt{a+b}\ \text{Cot}[c+d x]\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d x]^2}{\sqrt{a+b\,\text{Sec}[c+d x]}}\, dx$$

Problem 559: Unable to integrate problem.

$$\int \frac{1}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 106 leaves, 1 step):

$$-\frac{1}{a\,d}2\,\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticPi}\Big[\frac{a+b}{a},\,\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\,\frac{a+b}{a-b}\Big]\,\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}$$

Result (type 8, 16 leaves):

$$\int \frac{1}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Problem 560: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[c+d\,x]}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 338 leaves, 6 steps):

$$\frac{1}{a\,b\,d}(a-b)\,\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\,\frac{a+b}{a-b}\Big]\,\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{a\,d}\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\,\frac{a+b}{a-b}\Big]\,\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{a^2\,d}b\,\sqrt{a+b}\;\text{Cot}[c+d\,x]\;\text{EllipticPi}\Big[\frac{a+b}{a},\,\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\Big],\,\frac{a+b}{a-b}\Big]\,\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{a\,d}$$

Result (type 4, 795 leaves):

$$\Bigg(\sqrt{b+a\,\text{Cos}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{\frac{1}{1-\text{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]^2}}$$

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

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

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

$$2\,i\,b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

$$2\,i\,b\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

$$i\,\left(a-b\right)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

$$2\,i\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

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

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

Problem 561: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[c+d\,x]^2}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 401 leaves, 7 steps):

$$-\frac{1}{4\,a^2\,d}3\,(a-b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{4\,a^2\,d}(2\,a-3\,b)\,\sqrt{a+b}\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{4\,a^3\,d}\sqrt{a+b}\,\left(4\,a^2+3\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticPi}\left[\frac{a+b}{a},\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{3\,b\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{4\,a^2\,d}+\frac{\text{Cos}[c+d\,x]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,a\,d}$$

Result (type 4, 1195 leaves):

$$\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]\,\text{Sin}[2\,(c+d\,x)]}{4\,a\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\left(\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right.$$
$$\left(3\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+3\,b^2\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-6\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+3\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-3\,b^2\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+$$
$$8\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a+b}{a-b}\right]$$

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

$$6 i b^2 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}+$$

$$8 i a^2 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}+$$

$$6 i b^2 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}-$$

$$3 i (a-b) b \text{EllipticE}\left[i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}-2 i \left(2 a^2-a b+3 b^2\right)$$

$$\text{EllipticF}\left[i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right] \sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}\right)\right) \Big/$$

$$\left(4 a^2 \sqrt{\frac{-a+b}{a+b}} d \sqrt{a+b \text{Sec}[c+d x]} \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right.$$

$$\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)$$

Problem 562: Unable to integrate problem.

$$\int \frac{\operatorname{Sec}[c+d x]^5}{(a+b \operatorname{Sec}[c+d x])^{3/2}} \, dx$$

Optimal (type 4, 399 leaves, 6 steps):

$$-\frac{1}{5 b^5 \sqrt{a+b}\, d} 2\left(16 a^4-8 a^2 b^2-3 b^4\right) \operatorname{Cot}[c+d x] \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\operatorname{Sec}[c+d x])}{a-b}}-\frac{1}{5 b^4 \sqrt{a+b}\, d} 2(4 a+3 b)\left(4 a^2+b^2\right) \operatorname{Cot}[c+d x] \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\operatorname{Sec}[c+d x])}{a-b}}-\frac{2 a^2 \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]}{b\left(a^2-b^2\right) d \sqrt{a+b \operatorname{Sec}[c+d x]}}-\frac{2 a\left(8 a^2-3 b^2\right) \sqrt{a+b \operatorname{Sec}[c+d x]}\, \operatorname{Tan}[c+d x]}{5 b^3\left(a^2-b^2\right) d}+\frac{2\left(6 a^2-b^2\right) \operatorname{Sec}[c+d x] \sqrt{a+b \operatorname{Sec}[c+d x]}\, \operatorname{Tan}[c+d x]}{5 b^2\left(a^2-b^2\right) d}$$

Result (type 8, 25 leaves):

$$\int \frac{\operatorname{Sec}[c+d x]^5}{(a+b \operatorname{Sec}[c+d x])^{3/2}} \, dx$$

Problem 563: Unable to integrate problem.

$$\int \frac{\operatorname{Sec}[c+d x]^4}{(a+b \operatorname{Sec}[c+d x])^{3/2}} \, dx$$

Optimal (type 4, 325 leaves, 5 steps):

$$\frac{1}{3\,b^4\,\sqrt{a+b}\,d}2\,a\,\left(8\,a^2-5\,b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}+\frac{1}{3\,b^3\,\sqrt{a+b}\,d}2\,(2\,a+b)\,(4\,a+b)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{2\,a^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{b\,\left(a^2-b^2\right)\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,\left(4\,a^2-b^2\right)\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Tan}[c+d\,x]}{3\,b^2\,\left(a^2-b^2\right)\,d}$$

Result (type 8, 25 leaves):

$$\int\frac{\text{Sec}[c+d\,x]^4}{(a+b\,\text{Sec}[c+d\,x])^{3/2}}\,dx$$

Problem 564: Unable to integrate problem.

$$\int\frac{\text{Sec}[c+d\,x]^3}{(a+b\,\text{Sec}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 4, 257 leaves, 4 steps):

$$-\frac{1}{b^3\,\sqrt{a+b}\,d}2\,\left(2\,a^2-b^2\right)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{1}{b^2\,\sqrt{a+b}\,d}2\,(2\,a+b)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}-\frac{2\,a^2\,\text{Tan}[c+d\,x]}{b\,\left(a^2-b^2\right)\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 8, 25 leaves):

$$\int\frac{\text{Sec}[c+d\,x]^3}{(a+b\,\text{Sec}[c+d\,x])^{3/2}}\,dx$$

Problem 565: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d x]^2}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 237 leaves, 4 steps):

$$\frac{1}{b^2\sqrt{a+b}\,d}2\,a\,\text{Cot}[c+d x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}+\frac{1}{b\sqrt{a+b}\,d}2\,\text{Cot}[c+d x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}+\frac{2\,a\,\text{Tan}[c+d x]}{(a^2-b^2)\,d\sqrt{a+b\,\text{Sec}[c+d x]}}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d x]^2}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Problem 567: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 347 leaves, 6 steps):

$$\frac{1}{a\sqrt{a+b}\,d}2\,\text{Cot}[c+d x]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}-\frac{1}{a\sqrt{a+b}\,d}2\,\text{Cot}[c+d x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}-\frac{1}{a^2 d}2\sqrt{a+b}\,\text{Cot}[c+d x]\,\text{EllipticPi}\Big[\frac{a+b}{a},\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sec}[c+d x]}}{\sqrt{a+b}}\Big],\frac{a+b}{a-b}\Big]\sqrt{\frac{b\,(1-\text{Sec}[c+d x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d x])}{a-b}}+\frac{2\,b^2\,\text{Tan}[c+d x]}{a\,(a^2-b^2)\,d\sqrt{a+b\,\text{Sec}[c+d x]}}$$

Result (type 4, 1249 leaves):

$$\frac{(b+a\,\text{Cos}[c+d\,x])^2\,\text{Sec}[c+d\,x]^2\left(\frac{2\,b\,\text{Sin}[c+d\,x]}{a\,(-a^2+b^2)}+\frac{2\,b^2\,\text{Sin}[c+d\,x]}{a\,(a^2-b^2)\,(b+a\,\text{Cos}[c+d\,x])}\right)}{d\,(a+b\,\text{Sec}[c+d\,x])^{3/2}}+$$

$$\left(2\,(b+a\,\text{Cos}[c+d\,x])^{3/2}\,\text{Sec}[c+d\,x]^{3/2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}\right.$$

$$\left(a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b^2\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-2\,a\,b\,\sqrt{\frac{-a+b}{a+b}}\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+a\,b\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-b^2\,\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5-$$

$$2\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+$$

$$2\,i\,b^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-$$

$$2\,i\,a^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}+$$

$$2\,i\,b^2\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}-$$

$$i\,(a-b)\,b\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}+$$

$$i\left(a^2+a b-2 b^2\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left.\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}\right)\right)\Bigg/$$

$$\left(a\sqrt{\frac{-a+b}{a+b}}\left(a^2-b^2\right)d\left(a+b\,\text{Sec}[c+d x]\right)^{3/2}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)$$

Problem 568: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d x]}{\left(a+b\,\text{Sec}[c+d x]\right)^{3/2}}\,dx$$

Optimal (type 4, 396 leaves, 7 steps):

$$\frac{1}{a^2 b \sqrt{a+b}\, d}\left(a^2-3 b^2\right) \text{Cot}[c+d x] \, \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}+\frac{1}{a^2 \sqrt{a+b}\, d}(a+3 b) \text{Cot}[c+d x] \, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}+\frac{1}{a^3 d} 3 b \sqrt{a+b} \, \text{Cot}[c+d x] \, \text{EllipticPi}\left[\frac{a+b}{a}, \text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}+\frac{\text{Sin}[c+d x]}{a d \sqrt{a+b \text{Sec}[c+d x]}}+\frac{b \left(a^2-3 b^2\right) \text{Tan}[c+d x]}{a^2 \left(a^2-b^2\right) d \sqrt{a+b \text{Sec}[c+d x]}}$$

Result (type 4, 1077 leaves):

$$\left((b+a \text{Cos}[c+d x])^2 \text{Sec}[c+d x]^2 \left(-\frac{2 b^2 \text{Sin}[c+d x]}{a^2 \left(-a^2+b^2\right)}-\frac{2 b^3 \text{Sin}[c+d x]}{a^2 \left(a^2-b^2\right) (b+a \text{Cos}[c+d x])}\right)\right) \Big/ \left(d \, (a+b \text{Sec}[c+d x])^{3/2}\right)-\left((b+a \text{Cos}[c+d x])^{3/2} \text{Sec}[c+d x]^{3/2} \sqrt{\frac{1}{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}}\right.$$

$$\left(a^3 \text{Tan}\left[\frac{1}{2} (c+d x)\right]+a^2 b \text{Tan}\left[\frac{1}{2} (c+d x)\right]-3 a b^2 \text{Tan}\left[\frac{1}{2} (c+d x)\right]-3 b^3 \text{Tan}\left[\frac{1}{2} (c+d x)\right]-2 a^3 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+6 a b^2 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+a^3 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5-a^2 b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5-3 a b^2 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5+3 b^3 \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5+6 a^2 b \, \text{EllipticPi}\left[-1, -\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a-b}{a+b}\right] \sqrt{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}-6 b^3 \, \text{EllipticPi}\left[-1, -\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a-b}{a+b}\right] \sqrt{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}\right.$$

$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$6\,a^2\,b\,\text{EllipticPi}\left[-1,\,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a-b}{a+b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;-$$

$$6\,b^3\,\text{EllipticPi}\left[-1,\,-\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a-b}{a+b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$\left(a^3+a^2\,b-3\,a\,b^2-3\,b^3\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a-b}{a+b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$2\,a\,b\,(a+b)\,\text{EllipticF}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a-b}{a+b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\right)\right)\Bigg/$$

$$\left(a^2\,\left(a^2-b^2\right)\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right.$$

$$\left.\left(a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)$$

Problem 569: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d\,x]^2}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 470 leaves, 8 steps):

$$-\frac{1}{4 a^3 \sqrt{a+b}\, d}\left(7 a^2-15 b^2\right) \text{Cot}[c+d x] \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}+\frac{1}{4 a^3 \sqrt{a+b}\, d}\left(2 a^2-5 a b-15 b^2\right) \text{Cot}[c+d x] \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}-\frac{1}{4 a^4 d}\sqrt{a+b}\left(4 a^2+15 b^2\right) \text{Cot}[c+d x] \text{EllipticPi}\left[\frac{a+b}{a}, \text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}-\frac{5 b \text{Sin}[c+d x]}{4 a^2 d \sqrt{a+b \text{Sec}[c+d x]}}+\frac{\text{Cos}[c+d x] \text{Sin}[c+d x]}{2 a d \sqrt{a+b \text{Sec}[c+d x]}}-\frac{b^2\left(7 a^2-15 b^2\right) \text{Tan}[c+d x]}{4 a^3\left(a^2-b^2\right) d \sqrt{a+b \text{Sec}[c+d x]}}$$

Result (type 4, 1745 leaves):

$$\left((b+a \text{Cos}[c+d x])^2 \text{Sec}[c+d x]^2\left(\frac{2 b^3 \text{Sin}[c+d x]}{a^3\left(-a^2+b^2\right)}+\frac{2 b^4 \text{Sin}[c+d x]}{a^3\left(a^2-b^2\right)(b+a \text{Cos}[c+d x])}+\frac{\text{Sin}[2 (c+d x)]}{4 a^2}\right)\right) \Big/ \left(d (a+b \text{Sec}[c+d x])^{3/2}\right)+$$

$$\left((b+a \text{Cos}[c+d x])^{3/2} \text{Sec}[c+d x]^{3/2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right.$$

$$\left(-7 a^3 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]-7 a^2 b^2 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]+\right.$$

$$15 a b^3 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]+15 b^4 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$14 a^3 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^3-30 a b^3 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^3-$$

$$7 a^3 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^5+7 a^2 b^2 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]^5+$$

$$15\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-15\,b^4\,\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-$$

$$8\,\mathrm{i}\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-$$

$$22\,\mathrm{i}\,a^2\,b^2\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$30\,\mathrm{i}\,b^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-$$

$$8\,\mathrm{i}\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-22\,\mathrm{i}\,a^2\,b^2$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$30\,\mathrm{i}\,b^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$\text{i}\, b\left(7a^3-7a^2b-15ab^2+15b^3\right)\text{EllipticE}\left[\text{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right],\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)$$

$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}}+2\,\text{i}\left(2a^4-a^3b+9a^2b^2+5ab^3-15b^4\right)$$

$$\text{EllipticF}\left[\text{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right],\frac{a+b}{a-b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}}\right)\right)\Big/$$

$$\left(4a^3\sqrt{\frac{-a+b}{a+b}}\left(a^2-b^2\right)d\left(a+b\,\text{Sec}[c+dx]\right)^{3/2}\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right.$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}}$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)\right)$$

Problem 570: Unable to integrate problem.

$$\int\frac{\text{Sec}[c+dx]^5}{\left(a+b\,\text{Sec}[c+dx]\right)^{5/2}}\,dx$$

Optimal (type 4, 427 leaves, 6 steps):

$$\left(8\,a\,\left(4\,a^4-7\,a^2\,b^2+2\,b^4\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}\right)\bigg/\left(3\,(a-b)\,b^5\,(a+b)^{3/2}\,d\right)+$$

$$\left(2\,\left(16\,a^4+12\,a^3\,b-16\,a^2\,b^2-9\,a\,b^3-b^4\right)\,\mathrm{Cot}[c+d\,x]\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}}\,\sqrt{-\frac{b\,(1+\mathrm{Sec}[c+d\,x])}{a-b}}\right)\bigg/\left(3\,(a-b)\,b^4\,(a+b)^{3/2}\,d\right)-$$

$$\frac{2\,a^2\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]}{3\,b\,\left(a^2-b^2\right)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}}+\frac{4\,a^3\,\left(3\,a^2-5\,b^2\right)\,\mathrm{Tan}[c+d\,x]}{3\,b^3\,\left(a^2-b^2\right)^2\,d\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$

$$\frac{2\,\left(2\,a^2-b^2\right)\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Tan}[c+d\,x]}{3\,b^3\,\left(a^2-b^2\right)\,d}$$

Result (type 8, 25 leaves):

$$\int\frac{\mathrm{Sec}[c+d\,x]^5}{(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}}\,dx$$

Problem 571: Unable to integrate problem.

$$\int\frac{\mathrm{Sec}[c+d\,x]^4}{(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 362 leaves, 5 steps):

$$-\left(\left(2\left(8 a^4-15 a^2 b^2+3 b^4\right) \text{Cot}[c+d x] \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3(a-b) b^4(a+b)^{3/2} d\right)\right)-$$

$$\left(2\left(8 a^3+6 a^2 b-9 a b^2-3 b^3\right) \text{Cot}[c+d x] \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3(a-b) b^3(a+b)^{3/2} d\right)-$$

$$\frac{2 a^2 \text{Sec}[c+d x] \text{Tan}[c+d x]}{3 b\left(a^2-b^2\right) d(a+b \text{Sec}[c+d x])^{3/2}}-\frac{8 a^2\left(a^2-2 b^2\right) \text{Tan}[c+d x]}{3 b^2\left(a^2-b^2\right)^2 d \sqrt{a+b \text{Sec}[c+d x]}}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d x]^4}{(a+b \text{Sec}[c+d x])^{5/2}} \, dx$$

Problem 572: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d x]^3}{(a+b \text{Sec}[c+d x])^{5/2}} \, dx$$

Optimal (type 4, 337 leaves, 5 steps):

$$\left(4 a\left(a^2-3 b^2\right) \text{Cot}[c+d x] \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3(a-b) b^3(a+b)^{3/2} d\right)+$$

$$\left(2\left(2 a^2+3 a b-3 b^2\right) \text{Cot}[c+d x] \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3(a-b) b^2(a+b)^{3/2} d\right)-$$

$$\frac{2 a^2 \text{Tan}[c+d x]}{3 b\left(a^2-b^2\right) d(a+b \text{Sec}[c+d x])^{3/2}}+\frac{4 a\left(a^2-3 b^2\right) \text{Tan}[c+d x]}{3 b\left(a^2-b^2\right)^2 d \sqrt{a+b \text{Sec}[c+d x]}}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d\,x]^3}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Problem 573: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d\,x]^2}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 317 leaves, 5 steps):

$$\left(2\,(a^2+3\,b^2)\,\text{Cot}[c+d\,x]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}\right)\Bigg/\left(3\,(a-b)\,b^2\,(a+b)^{3/2}\,d\right)+\left(2\,(a-3\,b)\,\text{Cot}[c+d\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[c+d\,x])}{a-b}}\right)\Bigg/\left(3\,(a-b)\,b\,(a+b)^{3/2}\,d\right)+\frac{2\,a\,\text{Tan}[c+d\,x]}{3\,(a^2-b^2)\,d\,(a+b\,\text{Sec}[c+d\,x])^{3/2}}+\frac{2\,(a^2+3\,b^2)\,\text{Tan}[c+d\,x]}{3\,(a^2-b^2)^2\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 8, 25 leaves):

$$\int \frac{\text{Sec}[c+d\,x]^2}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Problem 574: Unable to integrate problem.

$$\int \frac{\text{Sec}[c+d\,x]}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 304 leaves, 5 steps):

$$-\left(\left(8\, a\, \text{Cot}[c+d\, x]\, \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\, \text{Sec}[c+d\, x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right]\right.\right.$$

$$\left.\left.\sqrt{\frac{b\,(1-\text{Sec}[c+d\, x])}{a+b}}\, \sqrt{-\frac{b\,(1+\text{Sec}[c+d\, x])}{a-b}}\right) \Big/ \left(3\,(a-b)\, b\,(a+b)^{3/2}\, d\right)\right)+$$

$$\left(2\,(3\, a-b)\, \text{Cot}[c+d\, x]\, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\, \text{Sec}[c+d\, x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right]\right.$$

$$\left.\sqrt{\frac{b\,(1-\text{Sec}[c+d\, x])}{a+b}}\, \sqrt{-\frac{b\,(1+\text{Sec}[c+d\, x])}{a-b}}\right) \Big/ \left(3\,(a-b)\, b\,(a+b)^{3/2}\, d\right)-$$

$$\frac{2\, b\, \text{Tan}[c+d\, x]}{3\,(a^2-b^2)\, d\,(a+b\, \text{Sec}[c+d\, x])^{3/2}}-\frac{8\, a\, b\, \text{Tan}[c+d\, x]}{3\,(a^2-b^2)^2\, d\, \sqrt{a+b\, \text{Sec}[c+d\, x]}}$$

Result (type 8, 23 leaves):

$$\int \frac{\text{Sec}[c+d\, x]}{(a+b\, \text{Sec}[c+d\, x])^{5/2}}\, dx$$

Problem 575: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\, \text{Sec}[c+d\, x])^{5/2}}\, dx$$

Optimal (type 4, 448 leaves, 7 steps):

$$\left(2\left(7a^2-3b^2\right)\operatorname{Cot}[c+dx]\,\operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b\operatorname{Sec}[c+dx]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\left(1-\operatorname{Sec}[c+dx]\right)}{a+b}}\sqrt{-\frac{b\left(1+\operatorname{Sec}[c+dx]\right)}{a-b}}\right)\Big/\left(3a^2\left(a-b\right)\left(a+b\right)^{3/2}d\right)-$$

$$\left(2\left(6a^2-ab-3b^2\right)\operatorname{Cot}[c+dx]\,\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b\operatorname{Sec}[c+dx]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\left(1-\operatorname{Sec}[c+dx]\right)}{a+b}}\sqrt{-\frac{b\left(1+\operatorname{Sec}[c+dx]\right)}{a-b}}\right)\Big/\left(3a^2\left(a-b\right)\left(a+b\right)^{3/2}d\right)-$$

$$\frac{1}{a^3 d}2\sqrt{a+b}\,\operatorname{Cot}[c+dx]\,\operatorname{EllipticPi}\left[\frac{a+b}{a},\operatorname{ArcSin}\left[\frac{\sqrt{a+b\operatorname{Sec}[c+dx]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\left(1-\operatorname{Sec}[c+dx]\right)}{a+b}}\sqrt{-\frac{b\left(1+\operatorname{Sec}[c+dx]\right)}{a-b}}+$$

$$\frac{2b^2\operatorname{Tan}[c+dx]}{3a\left(a^2-b^2\right)d\left(a+b\operatorname{Sec}[c+dx]\right)^{3/2}}+\frac{2b^2\left(7a^2-3b^2\right)\operatorname{Tan}[c+dx]}{3a^2\left(a^2-b^2\right)^2 d\sqrt{a+b\operatorname{Sec}[c+dx]}}$$

Result (type 4, 1798 leaves):

$$\left(\left(b+a\operatorname{Cos}[c+dx]\right)^3\operatorname{Sec}[c+dx]^3\left(\frac{2b\left(-7a^2+3b^2\right)\operatorname{Sin}[c+dx]}{3a^2\left(-a^2+b^2\right)^2}-\frac{2b^3\operatorname{Sin}[c+dx]}{3a^2\left(a^2-b^2\right)\left(b+a\operatorname{Cos}[c+dx]\right)^2}-\frac{8\left(-2a^2b^2\operatorname{Sin}[c+dx]+b^4\operatorname{Sin}[c+dx]\right)}{3a^2\left(a^2-b^2\right)^2\left(b+a\operatorname{Cos}[c+dx]\right)}\right)\right)\Big/\left(d\left(a+b\operatorname{Sec}[c+dx]\right)^{5/2}\right)+$$

$$\left(2\left(b+a\operatorname{Cos}[c+dx]\right)^{5/2}\operatorname{Sec}[c+dx]^{5/2}\sqrt{\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]^2}}\right.$$

$$\left(7a^3b\sqrt{\frac{-a+b}{a+b}}\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]+7a^2b^2\sqrt{\frac{-a+b}{a+b}}\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]-\right.$$

$$3ab^3\sqrt{\frac{-a+b}{a+b}}\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]-3b^4\sqrt{\frac{-a+b}{a+b}}\operatorname{Tan}\left[\frac{1}{2}\left(c+dx\right)\right]-$$

$$14\,a^3\,b\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^3+6\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^3+$$

$$7\,a^3\,b\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5-7\,a^2\,b^2\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5-$$

$$3\,a\,b^3\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5+3\,b^4\,\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5-$$

$$6\,i\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\;+$$

$$12\,i\,a^2\,b^2\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\;-$$

$$6\,i\,b^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\;-$$

$$6\,i\,a^4\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\;+12\,i\,a^2\,b^2$$

$$\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\;\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right],\,\frac{a+b}{a-b}\right]\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\;\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\;-$$

$$6\,\mathrm{i}\,b^4\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-$$

$$\mathrm{i}\,b\,\left(7\,a^3-7\,a^2\,b-3\,a\,b^2+3\,b^3\right)\,\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+\mathrm{i}\,\left(3\,a^4+6\,a^3\,b-13\,a^2\,b^2-2\,a\,b^3+6\,b^4\right)$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\right)\right)\Big/$$

$$\left(3\,a^2\,\sqrt{\frac{-a+b}{a+b}}\,\left(a^2-b^2\right)^2\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right.$$

$$\sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left.\left(a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)$$

Problem 576: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d\,x]}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 4, 510 leaves, 8 steps):

$$\left(\left(3 a^4-26 a^2 b^2+15 b^4\right) \text{Cot}[c+d x] \,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3 a^3 (a-b) b (a+b)^{3/2} d\right)+$$

$$\left(\left(3 a^3+21 a^2 b-5 a b^2-15 b^3\right) \text{Cot}[c+d x] \,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(3 a^3 (a-b) (a+b)^{3/2} d\right)+$$

$$\frac{1}{a^4 d} 5 b \sqrt{a+b} \,\text{Cot}[c+d x] \,\text{EllipticPi}\left[\frac{a+b}{a}, \text{ArcSin}\left[\frac{\sqrt{a+b \,\text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b (1+\text{Sec}[c+d x])}{a-b}}+\frac{\text{Sin}[c+d x]}{a d (a+b \,\text{Sec}[c+d x])^{3/2}}+$$

$$\frac{b \left(3 a^2-5 b^2\right) \text{Tan}[c+d x]}{3 a^2 \left(a^2-b^2\right) d (a+b \,\text{Sec}[c+d x])^{3/2}}+\frac{b \left(3 a^4-26 a^2 b^2+15 b^4\right) \text{Tan}[c+d x]}{3 a^3 \left(a^2-b^2\right)^2 d \sqrt{a+b \,\text{Sec}[c+d x]}}$$

Result (type 4, 1493 leaves):

$$\left((b+a \,\text{Cos}[c+d x])^3 \,\text{Sec}[c+d x]^3 \left(-\frac{4 b^2 \left(-5 a^2+3 b^2\right) \text{Sin}[c+d x]}{3 a^3 \left(-a^2+b^2\right)^2}+\frac{2 b^4 \,\text{Sin}[c+d x]}{3 a^3 \left(a^2-b^2\right) (b+a \,\text{Cos}[c+d x])^2}+\frac{2 \left(-11 a^2 b^3 \,\text{Sin}[c+d x]+7 b^5 \,\text{Sin}[c+d x]\right)}{3 a^3 \left(a^2-b^2\right)^2 (b+a \,\text{Cos}[c+d x])}\right)\right) \Big/$$

$$\left(d (a+b \,\text{Sec}[c+d x])^{5/2}\right)-\Bigg((b+a \,\text{Cos}[c+d x])^{5/2} \,\text{Sec}[c+d x]^{5/2}$$

$$\sqrt{\frac{1}{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}} \sqrt{\frac{a+b-a \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}}$$

$$\Bigg(3 a^5 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]+3 a^4 b \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]-26 a^3 b^2 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]-$$

$$26 a^2 b^3 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]+15 a b^4 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]+15 b^5 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]-$$

$$6 a^5 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+52 a^3 b^2 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]^3-30 a b^4 \,\text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+$$

$$3\,a^5\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-3\,a^4\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-26\,a^3\,b^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+$$

$$26\,a^2\,b^3\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+15\,a\,b^4\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5-15\,b^5\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+$$

$$30\,a^4\,b\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;-$$

$$60\,a^2\,b^3\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$30\,b^5\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$30\,a^4\,b\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;-$$

$$60\,a^2\,b^3\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$30\,b^5\,\mathrm{EllipticPi}\left[-1,-\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+$$

$$\left(3\,a^5+3\,a^4\,b-26\,a^3\,b^2-26\,a^2\,b^3+15\,a\,b^4+15\,b^5\right)\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]$$

$$\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\;+2\,a\,b\,\left(6\,a^3+9\,a^2\,b-2\,a\,b^2-5\,b^3\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}$$

$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}\right)\right)\Big/$$

$$\left(3\,a\,\left(a^3-a\,b^2\right)^2 d\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\sqrt{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right.$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)$$

Problem 577: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d\,x]^2}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}}\,dx$$

Optimal (type 4, 562 leaves, 9 steps):

$$-\left(\left(\left(33 a^4-170 a^2 b^2+105 b^4\right) \operatorname{Cot}[c+d x] \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\operatorname{Sec}[c+d x])}{a-b}}\right) \Big/ \left(12 a^4 (a-b)(a+b)^{3/2} d\right)\right)+$$

$$\left((a+3 b)\left(6 a^3-45 a^2 b+35 b^3\right) \operatorname{Cot}[c+d x] \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\operatorname{Sec}[c+d x])}{a-b}}\right) \Big/ \left(12 a^4 (a-b)(a+b)^{3/2} d\right)-\frac{1}{4 a^5 d}$$

$$\sqrt{a+b}\left(4 a^2+35 b^2\right) \operatorname{Cot}[c+d x] \operatorname{EllipticPi}\left[\frac{a+b}{a}, \operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\operatorname{Sec}[c+d x])}{a-b}}-$$

$$\frac{7 b \operatorname{Sin}[c+d x]}{4 a^2 d(a+b \operatorname{Sec}[c+d x])^{3/2}}+\frac{\operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]}{2 a d(a+b \operatorname{Sec}[c+d x])^{3/2}}-$$

$$\frac{b^2\left(27 a^2-35 b^2\right) \operatorname{Tan}[c+d x]}{12 a^3\left(a^2-b^2\right) d(a+b \operatorname{Sec}[c+d x])^{3/2}}-$$

$$\frac{b^2\left(33 a^4-170 a^2 b^2+105 b^4\right) \operatorname{Tan}[c+d x]}{12 a^4\left(a^2-b^2\right)^2 d \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 4, 2285 leaves):

$$\left((b+a \operatorname{Cos}[c+d x])^3 \operatorname{Sec}[c+d x]^3\right.$$

$$\left.\left(\frac{2 b^3\left(-13 a^2+9 b^2\right) \operatorname{Sin}[c+d x]}{3 a^4\left(-a^2+b^2\right)^2}-\frac{2 b^5 \operatorname{Sin}[c+d x]}{3 a^4\left(a^2-b^2\right)(b+a \operatorname{Cos}[c+d x])^2}-\frac{4\left(-7 a^2 b^4 \operatorname{Sin}[c+d x]+5 b^6 \operatorname{Sin}[c+d x]\right)}{3 a^4\left(a^2-b^2\right)^2(b+a \operatorname{Cos}[c+d x])}+\frac{\operatorname{Sin}[2(c+d x)]}{4 a^3}\right)\right) \Big/$$

$$\left(d(a+b \operatorname{Sec}[c+d x])^{5/2}\right)-\left((b+a \operatorname{Cos}[c+d x])^{5/2} \operatorname{Sec}[c+d x]^{5/2}\right.$$

$$\sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}$$

$$\left(33 a^5 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]+33 a^4 b^2 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]-\right.$$

$$170 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]-170 a^2 b^4 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]+105 a b^5 \sqrt{\frac{-a+b}{a+b}}$$

$$\text{Tan}\left[\frac{1}{2} (c+d x)\right]+105 b^6 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]-66 a^5 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+$$

$$340 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^3-210 a b^5 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^3+$$

$$33 a^5 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5-33 a^4 b^2 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5-$$

$$170 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5+170 a^2 b^4 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5+$$

$$105 a b^5 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5-105 b^6 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]^5+$$

$$24 i a^6 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}+$$

$$162 i a^4 b^2 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}-$$

$$396 i a^2 b^4 \text{EllipticPi}\left[-\frac{a+b}{a-b}, i \text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2} (c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}}+$$

$$210\,i\,b^6\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$24\,i\,a^6\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+162\,i\,a^4\,b^2$$

$$\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-396\,i\,a^2\,b^4$$

$$\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+210\,i\,b^6$$

$$\text{EllipticPi}\left[-\frac{a+b}{a-b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,+$$

$$i\,b\,\left(-33\,a^5+33\,a^4\,b+170\,a^3\,b^2-170\,a^2\,b^3-105\,a\,b^4+105\,b^5\right)$$

$$\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\,-$$

$$2\,i\,\left(6\,a^6-3\,a^5\,b+57\,a^4\,b^2+54\,a^3\,b^3-184\,a^2\,b^4-35\,a\,b^5+105\,b^6\right)$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\,\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(12\,a^4\sqrt{\frac{-a+b}{a+b}}\left(a^2-b^2\right)^2 d\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\sqrt{\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)$$

Problem 578: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{7/2}}\,dx$$

Optimal (type 4, 535 leaves, 8 steps):

$$\left(2\left(58 a^4-41 a^2 b^2+15 b^4\right) \text{Cot}[c+d x]\, \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(15 a^3 (a-b)^2 (a+b)^{5/2} d\right)-$$

$$\left(2\left(45 a^4-13 a^3 b-36 a^2 b^2+5 a b^3+15 b^4\right) \text{Cot}[c+d x]\, \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}\right) \Big/ \left(15 a^3 (a-b)^2 (a+b)^{5/2} d\right)-$$

$$\frac{1}{a^4 d} 2 \sqrt{a+b}\, \text{Cot}[c+d x]\, \text{EllipticPi}\left[\frac{a+b}{a}, \text{ArcSin}\left[\frac{\sqrt{a+b \text{Sec}[c+d x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b(1-\text{Sec}[c+d x])}{a+b}} \sqrt{-\frac{b(1+\text{Sec}[c+d x])}{a-b}}+$$

$$\frac{2 b^2 \text{Tan}[c+d x]}{5 a\left(a^2-b^2\right) d(a+b \text{Sec}[c+d x])^{5/2}}+\frac{2 b^2\left(13 a^2-5 b^2\right) \text{Tan}[c+d x]}{15 a^2\left(a^2-b^2\right)^2 d(a+b \text{Sec}[c+d x])^{3/2}}+\frac{2 b^2\left(58 a^4-41 a^2 b^2+15 b^4\right) \text{Tan}[c+d x]}{15 a^3\left(a^2-b^2\right)^3 d \sqrt{a+b \text{Sec}[c+d x]}}$$

Result (type 4, 2346 leaves):

$$\left((b+a \text{Cos}[c+d x])^4 \text{Sec}[c+d x]^4\left(\frac{2 b\left(58 a^4-41 a^2 b^2+15 b^4\right) \text{Sin}[c+d x]}{15 a^3\left(-a^2+b^2\right)^3}+\frac{2 b^4 \text{Sin}[c+d x]}{5 a^3\left(a^2-b^2\right)(b+a \text{Cos}[c+d x])^3}+\frac{2\left(-19 a^2 b^3 \text{Sin}[c+d x]+11 b^5 \text{Sin}[c+d x]\right)}{15 a^3\left(a^2-b^2\right)^2(b+a \text{Cos}[c+d x])^2}+\left(2\left(74 a^4 b^2 \text{Sin}[c+d x]-65 a^2 b^4 \text{Sin}[c+d x]+23 b^6 \text{Sin}[c+d x]\right)\right) \Big/ \left(15 a^3\left(a^2-b^2\right)^3(b+a \text{Cos}[c+d x])\right)\right)\right) \Big/ \left(d(a+b \text{Sec}[c+d x])^{7/2}\right)+$$

$$\left(2(b+a \text{Cos}[c+d x])^{7/2} \text{Sec}[c+d x]^{7/2} \sqrt{\frac{a+b-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}}\right.$$

$$\left(58 a^5 b \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]+58 a^4 b^2 \sqrt{\frac{-a+b}{a+b}} \text{Tan}\left[\frac{1}{2}(c+d x)\right]-\right.$$

$$41 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-41 a^2 b^4 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+15 a b^5 \sqrt{\frac{-a+b}{a+b}}$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+15 b^6 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-116 a^5 b \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^3+$$

$$82 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^3-30 a b^5 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^3+$$

$$58 a^5 b \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5-58 a^4 b^2 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5-$$

$$41 a^3 b^3 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5+41 a^2 b^4 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5+$$

$$15 a b^5 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5-15 b^6 \sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5-$$

$$30 i a^6 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}+$$

$$90 i a^4 b^2 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}-$$

$$90 i a^2 b^4 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}+$$

$$30 i b^6 \operatorname{EllipticPi}\left[-\frac{a+b}{a-b}, i \operatorname{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right], \frac{a+b}{a-b}\right]$$

$$\sqrt{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2} \sqrt{\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}}-$$

$$30\,\mathrm{i}\,a^6\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+90\,\mathrm{i}\,a^4\,b^2$$

$$\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}-90\,\mathrm{i}\,a^2\,b^4$$

$$\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+$$

$$30\,\mathrm{i}\,b^6\,\text{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+$$

$$\mathrm{i}\,b\,\left(-58\,a^5+58\,a^4\,b+41\,a^3\,b^2-41\,a^2\,b^3-15\,a\,b^4+15\,b^5\right)$$

$$\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}+$$

$$\mathrm{i}\,\left(15\,a^6+45\,a^5\,b-103\,a^4\,b^2-23\,a^3\,b^3+86\,a^2\,b^4+10\,a\,b^5-30\,b^6\right)$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a+b}{a-b}\right]\sqrt{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\sqrt{\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}\Bigg)\Bigg)\Bigg/$$

$$\left(15\, a^3 \sqrt{\frac{-a+b}{a+b}} \left(a^2-b^2\right)^3 d \left(a+b\,\text{Sec}[c+d\,x]\right)^{7/2} \left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right) \sqrt{\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}} \left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)$$

Problem 615: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^{7/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^2}\,dx$$

Optimal (type 4, 279 leaves, 10 steps):

$$-\frac{1}{b^2\left(a^2-b^2\right)d}\left(3\,a^2-2\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}-\frac{a\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticF}\left[\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}}{b\left(a^2-b^2\right)d}-\left(a\left(3\,a^2-5\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticPi}\left[\frac{2\,a}{a+b},\frac{1}{2}(c+d\,x),2\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left((a-b)\,b^2\,(a+b)^2\,d\right)+\frac{\left(3\,a^2-2\,b^2\right)\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{b^2\left(a^2-b^2\right)d}-\frac{a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{b\left(a^2-b^2\right)d\left(a+b\,\text{Sec}[c+d\,x]\right)}$$

Result (type 4, 632 leaves):

$$\frac{\sqrt{\text{Sec}[c+d x]}\left(\frac{\left(-3 a^2+2 b^2\right) \text{Sin}[c+d x]}{b^2\left(-a^2+b^2\right)}+\frac{a^2 \text{Sin}[c+d x]}{b\left(-a^2+b^2\right)(b+a \text{Cos}[c+d x])}\right)}{d}-$$

$$\frac{1}{4(a-b) b^2(a+b) d}\left(-\left(\left(2\left(8 a^2 b-4 b^3\right) \text{Cos}[c+d x]^2\right.\right.\right.$$
$$\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right](a+b \text{Sec}[c+d x])$$
$$\left.\left.\sqrt{1-\text{Sec}[c+d x]^2} \text{Sin}[c+d x]\right)\Big/\left(a(b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right)\right)\right)+$$
$$\left(2\left(9 a^3-10 a b^2\right) \text{Cos}[c+d x]^2\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]+\right.\right.$$
$$\left.\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]\right)(a+b \text{Sec}[c+d x])$$
$$\left.\sqrt{1-\text{Sec}[c+d x]^2} \text{Sin}[c+d x]\right)\Big/\left(b(b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right)\right)-$$
$$\left(2\left(3 a^3-2 a b^2\right) \text{Cos}[2(c+d x)](a+b \text{Sec}[c+d x])\left(2 a b-2 a b \text{Sec}[c+d x]^2+\right.\right.$$
$$2 a b \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+$$
$$a(a-2 b) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+$$
$$a^2 \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}-$$
$$\left.2 b^2 \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}\right)$$
$$\left.\text{Sin}[c+d x]\right)\Big/\left(a^2 b(b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right)\right.$$
$$\left.\left.\sqrt{\text{Sec}[c+d x]}\left(2-\text{Sec}[c+d x]^2\right)\right)\right)$$

Problem 616: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]^{5/2}}{(a+b \text{Sec}[c+d x])^2} \, dx$$

Optimal (type 4, 214 leaves, 9 steps):

$$\frac{a \sqrt{\text{Cos}[c+d x]} \text{EllipticE}\left[\frac{1}{2}(c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}}{b\left(a^2-b^2\right) d}+$$
$$\frac{\sqrt{\text{Cos}[c+d x]} \text{EllipticF}\left[\frac{1}{2}(c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}}{\left(a^2-b^2\right) d}+$$
$$\left(\left(a^2-3 b^2\right) \sqrt{\text{Cos}[c+d x]} \text{EllipticPi}\left[\frac{2 a}{a+b}, \frac{1}{2}(c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}\right)\Big/$$
$$\left((a-b) b(a+b)^2 d\right)-\frac{a^2 \sqrt{\text{Sec}[c+d x]} \text{Sin}[c+d x]}{b\left(a^2-b^2\right) d(a+b \text{Sec}[c+d x])}$$

Result (type 4, 587 leaves):

$$\frac{\sqrt{\text{Sec}[c+d\,x]}\,\left(\frac{a\,\text{Sin}[c+d\,x]}{b\,\left(-a^2+b^2\right)}+\frac{a\,\text{Sin}[c+d\,x]}{\left(a^2-b^2\right)\,\left(b+a\,\text{Cos}[c+d\,x]\right)}\right)}{d}+\frac{1}{4\,(a-b)\,b\,(a+b)\,d}$$
$$\Bigg(-\Bigg(\Bigg(8\,b\,\text{Cos}[c+d\,x]^2\,\text{EllipticPi}\Big[-\frac{b}{a},-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]\,\left(a+b\,\text{Sec}[c+d\,x]\right)$$
$$\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\Bigg)\Bigg/\left(\left(b+a\,\text{Cos}[c+d\,x]\right)\,\left(1-\text{Cos}[c+d\,x]^2\right)\right)\Bigg)+$$
$$\Bigg(2\,\left(3\,a^2-4\,b^2\right)\,\text{Cos}[c+d\,x]^2\,\Bigg(\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]+$$
$$\text{EllipticPi}\Big[-\frac{b}{a},-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]\Bigg)\,\left(a+b\,\text{Sec}[c+d\,x]\right)$$
$$\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\Bigg)\Bigg/\left(b\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\left(1-\text{Cos}[c+d\,x]^2\right)\right)-$$
$$\Bigg(2\,\text{Cos}\left[2\,(c+d\,x)\right]\,\left(a+b\,\text{Sec}[c+d\,x]\right)\,\Bigg(2\,a\,b-2\,a\,b\,\text{Sec}[c+d\,x]^2+$$
$$2\,a\,b\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+$$
$$a\,(a-2\,b)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+$$
$$a^2\,\text{EllipticPi}\Big[-\frac{b}{a},-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}-$$
$$2\,b^2\,\text{EllipticPi}\Big[-\frac{b}{a},-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],-1\Big]$$
$$\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}\Bigg)\,\text{Sin}[c+d\,x]\Bigg)\Bigg/$$
$$\left(b\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\left(1-\text{Cos}[c+d\,x]^2\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\left(2-\text{Sec}[c+d\,x]^2\right)\right)\Bigg)$$

Problem 617: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^{3/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^2}\,dx$$

Optimal (type 4, 208 leaves, 9 steps):

$$-\frac{\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{\left(a^2-b^2\right)\,d}-$$
$$\frac{b\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}}{a\,\left(a^2-b^2\right)\,d}+$$
$$\left(\left(a^2+b^2\right)\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticPi}\left[\frac{2\,a}{a+b},\frac{1}{2}\,(c+d\,x),2\right]\,\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$
$$\left(a\,(a-b)\,(a+b)^2\,d\right)+\frac{a\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{\left(a^2-b^2\right)\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)}$$

Result (type 4, 633 leaves):

$$\frac{(b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^{5/2}\left(-\frac{\mathrm{Sin}[c+d\,x]}{-a^2+b^2}+\frac{b\,\mathrm{Sin}[c+d\,x]}{(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])}\right)}{d\,(a+b\,\mathrm{Sec}[c+d\,x])^2}+$$

$$\frac{1}{4\,(-a+b)\,(a+b)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^2}(b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^2$$
$$\Bigg(-\Bigg(\Bigg(8\,b\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,(a+b\,\mathrm{Sec}[c+d\,x])$$
$$\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/\Big(a\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\Big)\Bigg)-$$
$$\Bigg(2\,a\,\mathrm{Cos}[c+d\,x]^2\,\Big(\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]+$$
$$\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\Big)\,(a+b\,\mathrm{Sec}[c+d\,x])$$
$$\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/\Big(b\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\Big)-$$
$$\Bigg(2\,\mathrm{Cos}[2\,(c+d\,x)]\,(a+b\,\mathrm{Sec}[c+d\,x])\,\Big(2\,a\,b-2\,a\,b\,\mathrm{Sec}[c+d\,x]^2+$$
$$2\,a\,b\,\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+$$
$$a\,(a-2\,b)\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+$$
$$a^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}-$$
$$2\,b^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]$$
$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\Big)\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/$$
$$\Big(a\,b\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,(2-\mathrm{Sec}[c+d\,x]^2)\Big)\Bigg)$$

Problem 618: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Sec}[c+d\,x]}}{(a+b\,\mathrm{Sec}[c+d\,x])^2}\,dx$$

Optimal (type 4, 227 leaves, 9 steps):

$$\frac{b\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticE}\Big[\frac{1}{2}\,(c+d\,x),2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}}{a\,(a^2-b^2)\,d}+$$
$$\frac{(2\,a^2-b^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticF}\Big[\frac{1}{2}\,(c+d\,x),2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}}{a^2\,(a^2-b^2)\,d}-$$
$$\Big(b\,(3\,a^2-b^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticPi}\Big[\frac{2\,a}{a+b},\frac{1}{2}\,(c+d\,x),2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\Big)\Big/$$
$$\Big(a^2\,(a-b)\,(a+b)^2\,d\Big)-\frac{b\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{(a^2-b^2)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])}$$

Result (type 4, 630 leaves):

$$\frac{(b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^{5/2}\left(\frac{b\,\mathrm{Sin}[c+d\,x]}{a\,(-a^2+b^2)}+\frac{b^2\,\mathrm{Sin}[c+d\,x]}{a\,(a^2-b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])}\right)}{d\,(a+b\,\mathrm{Sec}[c+d\,x])^2}+$$

$$\frac{1}{4\,(a-b)\,(a+b)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^2}(b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^2$$

$$\Bigg(-\Bigg(\Bigg(8\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},\,-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]\,(a+b\,\mathrm{Sec}[c+d\,x])$$

$$\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/\left((b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\right)\Bigg)-$$

$$\Bigg(2\,\mathrm{Cos}[c+d\,x]^2\,\Big(\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]+$$

$$\mathrm{EllipticPi}\Big[-\frac{b}{a},\,-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]\Big)\,(a+b\,\mathrm{Sec}[c+d\,x])$$

$$\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/\left((b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\right)-$$

$$\Bigg(2\,\mathrm{Cos}[2\,(c+d\,x)]\,(a+b\,\mathrm{Sec}[c+d\,x])\,\Big(2\,a\,b-2\,a\,b\,\mathrm{Sec}[c+d\,x]^2+$$

$$2\,a\,b\,\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+$$

$$a\,(a-2\,b)\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+$$

$$a^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},\,-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}-$$

$$2\,b^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},\,-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],\,-1\Big]$$

$$\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\Big)\,\mathrm{Sin}[c+d\,x]\Bigg)\Big/$$

$$\left(a^2\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,(2-\mathrm{Sec}[c+d\,x]^2)\right)\Bigg)$$

Problem 619: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^2}\,dx$$

Optimal (type 4, 244 leaves, 9 steps):

$$\frac{(2\,a^2-3\,b^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticE}\Big[\frac{1}{2}\,(c+d\,x),\,2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}}{a^2\,(a^2-b^2)\,d}-$$

$$\frac{1}{a^3\,(a^2-b^2)\,d}b\,(4\,a^2-3\,b^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticF}\Big[\frac{1}{2}\,(c+d\,x),\,2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}+$$

$$\left(b^2\,(5\,a^2-3\,b^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\mathrm{EllipticPi}\Big[\frac{2\,a}{a+b},\,\frac{1}{2}\,(c+d\,x),\,2\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(a^3\,(a-b)\,(a+b)^2\,d\right)+\frac{b^2\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{a\,(a^2-b^2)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])}$$

Result (type 4, 608 leaves):

$$\frac{\sqrt{\text{Sec}[c+d x]}\left(-\frac{b^2 \text{Sin}[c+d x]}{a^2\left(-a^2+b^2\right)}-\frac{b^3 \text{Sin}[c+d x]}{a^2\left(a^2-b^2\right)(b+a \text{Cos}[c+d x])}\right)}{d}+\frac{1}{4 a(-a+b)(a+b) d}\left(-\left(\left(8 b \text{Cos}[c+d x]^2 \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right](a+b \text{Sec}[c+d x]) \sqrt{1-\text{Sec}[c+d x]^2} \text{Sin}[c+d x]\right)\Big/\left((b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right)\right)\right)+\left(2\left(-2 a^2+b^2\right) \text{Cos}[c+d x]^2\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]+\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]\right)(a+b \text{Sec}[c+d x]) \sqrt{1-\text{Sec}[c+d x]^2} \text{Sin}[c+d x]\right)\Big/\left(b(b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right)\right)-\left(2\left(-2 a^2+3 b^2\right) \text{Cos}[2(c+d x)](a+b \text{Sec}[c+d x])\left(2 a b-2 a b \text{Sec}[c+d x]^2+2 a b \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+a(a-2 b) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+a^2 \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}-2 b^2 \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}\right) \text{Sin}[c+d x]\right)\Big/\left(a^2 b(b+a \text{Cos}[c+d x])\left(1-\text{Cos}[c+d x]^2\right) \sqrt{\text{Sec}[c+d x]}\left(2-\text{Sec}[c+d x]^2\right)\right)\right)$$

Problem 620: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Sec}[c+d x]^{3/2}(a+b \text{Sec}[c+d x])^2} \, dx$$

Optimal (type 4, 304 leaves, 10 steps):

$$-\frac{1}{a^3\left(a^2-b^2\right) d} b\left(4 a^2-5 b^2\right) \sqrt{\text{Cos}[c+d x]} \text{EllipticE}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}+\frac{1}{3 a^4\left(a^2-b^2\right) d}\left(2 a^4+16 a^2 b^2-15 b^4\right) \sqrt{\text{Cos}[c+d x]} \text{EllipticF}\left[\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}-\left(b^3\left(7 a^2-5 b^2\right) \sqrt{\text{Cos}[c+d x]} \text{EllipticPi}\left[\frac{2 a}{a+b},\frac{1}{2}(c+d x),2\right] \sqrt{\text{Sec}[c+d x]}\right)\Big/\left(a^4(a-b)(a+b)^2 d\right)+\frac{\left(2 a^2-5 b^2\right) \text{Sin}[c+d x]}{3 a^2\left(a^2-b^2\right) d \sqrt{\text{Sec}[c+d x]}}+\frac{b^2 \text{Sin}[c+d x]}{a\left(a^2-b^2\right) d \sqrt{\text{Sec}[c+d x]}(a+b \text{Sec}[c+d x])}$$

Result (type 4, 639 leaves):

$$\frac{1}{12\,a^2\,(a-b)\,(a+b)\,d}\left(-\left(\left(2\,(4\,a^3+8\,a\,b^2)\,\text{Cos}[c+d\,x]^2\,\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right](a+b\,\text{Sec}[c+d\,x])\,\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\right)\Big/\left(a\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\right)\right)+\left(2\,(-8\,a^2\,b+5\,b^3)\,\text{Cos}[c+d\,x]^2\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]+\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]\right)(a+b\,\text{Sec}[c+d\,x])\,\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\right)\Big/\left(b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\right)-\left(2\,(-12\,a^2\,b+15\,b^3)\,\text{Cos}[2\,(c+d\,x)]\,(a+b\,\text{Sec}[c+d\,x])\left(2\,a\,b-2\,a\,b\,\text{Sec}[c+d\,x]^2+2\,a\,b\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+a\,(a-2\,b)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+a^2\,\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}-2\,b^2\,\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}\right)\text{Sin}[c+d\,x]\right)\Big/\left(a^2\,b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\,\sqrt{\text{Sec}[c+d\,x]}\,(2-\text{Sec}[c+d\,x]^2)\right)\right)+\frac{\sqrt{\text{Sec}[c+d\,x]}\left(\frac{b^3\,\text{Sin}[c+d\,x]}{a^3\,(-a^2+b^2)}+\frac{b^4\,\text{Sin}[c+d\,x]}{a^3\,(a^2-b^2)\,(b+a\,\text{Cos}[c+d\,x])}+\frac{\text{Sin}[2\,(c+d\,x)]}{3\,a^2}\right)}{d}$$

Problem 622: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^{7/2}}{(a+b\,\text{Sec}[c+d\,x])^3}\,dx$$

Optimal (type 4, 315 leaves, 10 steps):

$$\frac{3\,a\,(a^2-3\,b^2)\,\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,b^2\,(a^2-b^2)^2\,d}+$$

$$\frac{(a^2-7\,b^2)\,\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,b\,(a^2-b^2)^2\,d}+$$

$$\left(3\,(a^4-2\,a^2\,b^2+5\,b^4)\,\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticPi}\left[\frac{2\,a}{a+b},\,\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$
$$\left(4\,(a-b)^2\,b^2\,(a+b)^3\,d\right)-\frac{a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{2\,b\,(a^2-b^2)\,d\,(a+b\,\text{Sec}[c+d\,x])^2}-$$
$$\frac{3\,a^2\,(a^2-3\,b^2)\,\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{4\,b^2\,(a^2-b^2)^2\,d\,(a+b\,\text{Sec}[c+d\,x])}$$

Result (type 4, 697 leaves) :

$$\frac{1}{16\,(a-b)^2\,b^2\,(a+b)^2\,d}$$
$$\Bigg(-\Bigg(\Bigg(2\,(8\,a^3\,b-32\,a\,b^3)\,\text{Cos}[c+d\,x]^2\,\text{EllipticPi}\left[-\frac{b}{a},\,-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]$$
$$(a+b\,\text{Sec}[c+d\,x])\,\sqrt{1-\text{Sec}[c+d\,x]^2}\ \text{Sin}[c+d\,x]\Bigg)\Big/$$
$$\left(a\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\right)\Bigg)\Bigg)+$$
$$\Bigg(2\,(9\,a^4-19\,a^2\,b^2+16\,b^4)\,\text{Cos}[c+d\,x]^2\,\Big(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]+$$
$$\text{EllipticPi}\left[-\frac{b}{a},\,-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]\Big)\,(a+b\,\text{Sec}[c+d\,x])$$
$$\sqrt{1-\text{Sec}[c+d\,x]^2}\ \text{Sin}[c+d\,x]\Bigg)\Big/\left(b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\right)-$$
$$\Bigg(2\,(3\,a^4-9\,a^2\,b^2)\,\text{Cos}[2\,(c+d\,x)]\,(a+b\,\text{Sec}[c+d\,x])\,\Big(2\,a\,b-2\,a\,b\,\text{Sec}[c+d\,x]^2+$$
$$2\,a\,b\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+$$
$$a\,(a-2\,b)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+$$
$$a^2\,\text{EllipticPi}\left[-\frac{b}{a},\,-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}-$$
$$2\,b^2\,\text{EllipticPi}\left[-\frac{b}{a},\,-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d\,x]}\right],\,-1\right]\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}\Big)$$
$$\text{Sin}[c+d\,x]\Bigg)\Big/\Big(a^2\,b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)$$
$$\sqrt{\text{Sec}[c+d\,x]}\,(2-\text{Sec}[c+d\,x]^2)\Big)\Bigg)+\frac{1}{d}$$
$$\sqrt{\text{Sec}[c+d\,x]}\,\Bigg(\frac{3\,a\,(-a^2+3\,b^2)\,\text{Sin}[c+d\,x]}{4\,b^2\,(-a^2+b^2)^2}-\frac{a\,\text{Sin}[c+d\,x]}{2\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d\,x])^2}+$$
$$\frac{a^3\,\text{Sin}[c+d\,x]-7\,a\,b^2\,\text{Sin}[c+d\,x]}{4\,b\,(-a^2+b^2)^2\,(b+a\,\text{Cos}[c+d\,x])}\Bigg)$$

Problem 623: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^{5/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^3}\,dx$$

Optimal (type 4, 313 leaves, 10 steps):

$$\frac{\left(a^2+5\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,b\,\left(a^2-b^2\right)^2\,d}+$$
$$\frac{3\,\left(a^2+b^2\right)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,a\,\left(a^2-b^2\right)^2\,d}+$$
$$\left(\left(a^4-10\,a^2\,b^2-3\,b^4\right)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticPi}\left[\frac{2\,a}{a+b},\,\frac{1}{2}\,(c+d\,x),\,2\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$
$$\left(4\,a\,(a-b)^2\,b\,(a+b)^3\,d\right)-$$
$$\frac{a^2\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{2\,b\,\left(a^2-b^2\right)\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)^2}+\frac{a\,\left(a^2-7\,b^2\right)\sqrt{\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{4\,b\,\left(a^2-b^2\right)^2\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)}$$

Result (type 4, 733 leaves):

$$\frac{1}{16\,(a-b)^2\,b\,(a+b)^2\,d\,(a+b\,\text{Sec}[c+d\,x])^3}$$

$$(b+a\,\text{Cos}[c+d\,x])^3\,\text{Sec}[c+d\,x]^3\,\Bigg(-\Bigg(\Bigg(2\,(8\,a^2\,b+16\,b^3)\,\text{Cos}[c+d\,x]^2\,\text{EllipticPi}\Big[-\frac{b}{a},\,-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\,(a+b\,\text{Sec}[c+d\,x])\,\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\Bigg)\Big/\Big(a\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\Big)\Bigg)+$$

$$\Bigg(2\,(3\,a^3-9\,a\,b^2)\,\text{Cos}[c+d\,x]^2\,\Big(\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]+\text{EllipticPi}\Big[-\frac{b}{a},\,-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\Big)\,(a+b\,\text{Sec}[c+d\,x])\,\sqrt{1-\text{Sec}[c+d\,x]^2}\,\text{Sin}[c+d\,x]\Bigg)\Big/\Big(b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\Big)-$$

$$\Bigg(2\,(a^3+5\,a\,b^2)\,\text{Cos}[2\,(c+d\,x)]\,(a+b\,\text{Sec}[c+d\,x])\,\Big(2\,a\,b-2\,a\,b\,\text{Sec}[c+d\,x]^2+2\,a\,b\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+a\,(a-2\,b)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}+a^2\,\text{EllipticPi}\Big[-\frac{b}{a},\,-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}-2\,b^2\,\text{EllipticPi}\Big[-\frac{b}{a},\,-\text{ArcSin}\Big[\sqrt{\text{Sec}[c+d\,x]}\Big],\,-1\Big]\,\sqrt{\text{Sec}[c+d\,x]}\,\sqrt{1-\text{Sec}[c+d\,x]^2}\Big)\,\text{Sin}[c+d\,x]\Bigg)\Big/\Big(a^2\,b\,(b+a\,\text{Cos}[c+d\,x])\,(1-\text{Cos}[c+d\,x]^2)\,\sqrt{\text{Sec}[c+d\,x]}\,(2-\text{Sec}[c+d\,x]^2)\Big)\Bigg)+$$

$$\Bigg((b+a\,\text{Cos}[c+d\,x])^3\,\text{Sec}[c+d\,x]^{7/2}\,\Bigg(-\frac{(a^2+5\,b^2)\,\text{Sin}[c+d\,x]}{4\,b\,(-a^2+b^2)^2}+\frac{b\,\text{Sin}[c+d\,x]}{2\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d\,x])^2}+\frac{3\,(a^2\,\text{Sin}[c+d\,x]+b^2\,\text{Sin}[c+d\,x])}{4\,(-a^2+b^2)^2\,(b+a\,\text{Cos}[c+d\,x])}\Bigg)\Bigg)\Big/\Big(d\,(a+b\,\text{Sec}[c+d\,x])^3\Big)$$

Problem 624: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^{3/2}}{(a+b\,\text{Sec}[c+d\,x])^3}\,dx$$

Optimal (type 4, 306 leaves, 10 steps):

$$-\frac{\left(5 a^2+b^2\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}}{4 a \left(a^2-b^2\right)^2 d}-\frac{b \left(7 a^2-b^2\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}}{4 a^2 \left(a^2-b^2\right)^2 d}+$$

$$\left(\left(3 a^4+10 a^2 b^2-b^4\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticPi}\left[\frac{2 a}{a+b}, \frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}\right) \Big/ \left(4 a^2 (a-b)^2 (a+b)^3 d\right)+$$

$$\frac{a \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{2 \left(a^2-b^2\right) d\, (a+b\, \text{Sec}[c+d x])^2}+\frac{3 \left(a^2+b^2\right) \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{4 \left(a^2-b^2\right)^2 d\, (a+b\, \text{Sec}[c+d x])}$$

Result (type 4, 724 leaves):

$$-\frac{1}{16 (a-b)^2 (a+b)^2 d\, (a+b\, \text{Sec}[c+d x])^3} (b+a\, \text{Cos}[c+d x])^3\, \text{Sec}[c+d x]^3$$
$$\Bigg(-\Bigg(\Bigg(48 b\, \text{Cos}[c+d x]^2\, \text{EllipticPi}\left[-\frac{b}{a}, -\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right] (a+b\, \text{Sec}[c+d x])$$
$$\sqrt{1-\text{Sec}[c+d x]^2}\ \text{Sin}[c+d x]\Bigg) \Big/ \left((b+a\, \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right)\right)\Bigg)+$$
$$\Bigg(2 \left(-a^2-5 b^2\right) \text{Cos}[c+d x]^2 \Bigg(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right]+$$
$$\text{EllipticPi}\left[-\frac{b}{a}, -\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right]\Bigg) (a+b\, \text{Sec}[c+d x])$$
$$\sqrt{1-\text{Sec}[c+d x]^2}\ \text{Sin}[c+d x]\Bigg) \Big/ \left(b\, (b+a\, \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right)\right)-$$
$$\Bigg(2 \left(5 a^2+b^2\right) \text{Cos}[2 (c+d x)]\, (a+b\, \text{Sec}[c+d x]) \Bigg(2 a b-2 a b\, \text{Sec}[c+d x]^2+$$
$$2 a b\, \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+$$
$$a (a-2 b)\, \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+$$
$$a^2\, \text{EllipticPi}\left[-\frac{b}{a}, -\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}-$$
$$2 b^2\, \text{EllipticPi}\left[-\frac{b}{a}, -\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right], -1\right]$$
$$\sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}\Bigg) \text{Sin}[c+d x]\Bigg) \Big/$$
$$\left(a^2 b\, (b+a\, \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right) \sqrt{\text{Sec}[c+d x]} \left(2-\text{Sec}[c+d x]^2\right)\right)\Bigg)+$$
$$\Bigg((b+a\, \text{Cos}[c+d x])^3\, \text{Sec}[c+d x]^{7/2} \Bigg(\frac{\left(5 a^2+b^2\right) \text{Sin}[c+d x]}{4 a \left(a^2-b^2\right)^2}+$$
$$\frac{b^2\, \text{Sin}[c+d x]}{2 a \left(a^2-b^2\right) (b+a\, \text{Cos}[c+d x])^2}+$$
$$\frac{-7 a^2 b\, \text{Sin}[c+d x]+b^3\, \text{Sin}[c+d x]}{4 a \left(a^2-b^2\right)^2 (b+a\, \text{Cos}[c+d x])}\Bigg)\Bigg) \Big/ \left(d\, (a+b\, \text{Sec}[c+d x])^3\right)$$

Problem 625: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Sec}[c+d x]}}{(a+b \text{Sec}[c+d x])^3} \, dx$$

Optimal (type 4, 323 leaves, 10 steps):

$$\frac{3 b \left(3 a^2-b^2\right) \sqrt{\text{Cos}[c+d x]} \, \text{EllipticE}\left[\frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}}{4 a^2 \left(a^2-b^2\right)^2 d}+\frac{1}{4 a^3 \left(a^2-b^2\right)^2 d}$$
$$\left(8 a^4-5 a^2 b^2+3 b^4\right) \sqrt{\text{Cos}[c+d x]} \, \text{EllipticF}\left[\frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]} -$$
$$\left(3 b \left(5 a^4-2 a^2 b^2+b^4\right) \sqrt{\text{Cos}[c+d x]} \, \text{EllipticPi}\left[\frac{2 a}{a+b}, \frac{1}{2} (c+d x), 2\right] \sqrt{\text{Sec}[c+d x]}\right) \Big/$$
$$\left(4 a^3 (a-b)^2 (a+b)^3 d\right) -$$
$$\frac{b \sqrt{\text{Sec}[c+d x]} \, \text{Sin}[c+d x]}{2 \left(a^2-b^2\right) d \, (a+b \text{Sec}[c+d x])^2}-\frac{b \left(7 a^2-b^2\right) \sqrt{\text{Sec}[c+d x]} \, \text{Sin}[c+d x]}{4 a \left(a^2-b^2\right)^2 d \, (a+b \text{Sec}[c+d x])}$$

Result (type 4, 749 leaves):

$$\frac{1}{16\,a\,(a-b)^2\,(a+b)^2\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^3}(b+a\,\mathrm{Cos}[c+d\,x])^3\,\mathrm{Sec}[c+d\,x]^3\,\Bigg(-\Bigg(\Big(2\,(16\,a^3+8\,a\,b^2)\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,(a+b\,\mathrm{Sec}[c+d\,x])\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Big)\Big/\Big(a\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\Big)\Bigg)+$$

$$\Big(2\,(-5\,a^2\,b-b^3)\,\mathrm{Cos}[c+d\,x]^2\,\Big(\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]+\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\Big)\,(a+b\,\mathrm{Sec}[c+d\,x])\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\,\mathrm{Sin}[c+d\,x]\Big)\Big/\Big(b\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\Big)-$$

$$\Big(2\,(9\,a^2\,b-3\,b^3)\,\mathrm{Cos}[2\,(c+d\,x)]\,(a+b\,\mathrm{Sec}[c+d\,x])\,\Big(2\,a\,b-2\,a\,b\,\mathrm{Sec}[c+d\,x]^2+2\,a\,b\,\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+a\,(a-2\,b)\,\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}+a^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}-2\,b^2\,\mathrm{EllipticPi}\Big[-\frac{b}{a},-\mathrm{ArcSin}\Big[\sqrt{\mathrm{Sec}[c+d\,x]}\Big],-1\Big]\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{1-\mathrm{Sec}[c+d\,x]^2}\Big)\,\mathrm{Sin}[c+d\,x]\Big)\Big/\Big(a^2\,b\,(b+a\,\mathrm{Cos}[c+d\,x])\,(1-\mathrm{Cos}[c+d\,x]^2)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,(2-\mathrm{Sec}[c+d\,x]^2)\Big)\Bigg)+$$

$$\Bigg((b+a\,\mathrm{Cos}[c+d\,x])^3\,\mathrm{Sec}[c+d\,x]^{7/2}\,\Bigg(\frac{3\,b\,(-3\,a^2+b^2)\,\mathrm{Sin}[c+d\,x]}{4\,a^2\,(-a^2+b^2)^2}-\frac{b^3\,\mathrm{Sin}[c+d\,x]}{2\,a^2\,(a^2-b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])^2}+\frac{11\,a^2\,b^2\,\mathrm{Sin}[c+d\,x]-5\,b^4\,\mathrm{Sin}[c+d\,x]}{4\,a^2\,(a^2-b^2)^2\,(b+a\,\mathrm{Cos}[c+d\,x])}\Bigg)\Bigg)\Big/\Big(d\,(a+b\,\mathrm{Sec}[c+d\,x])^3\Big)$$

Problem 626: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^3}\,dx$$

Optimal (type 4, 342 leaves, 10 steps):

$$\frac{1}{4 a^3 \left(a^2-b^2\right)^2 d}\left(8 a^4-29 a^2 b^2+15 b^4\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2} (c+d x),2\right] \sqrt{\text{Sec}[c+d x]}-\frac{1}{4 a^4 \left(a^2-b^2\right)^2 d} 3 b \left(8 a^4-11 a^2 b^2+5 b^4\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticF}\left[\frac{1}{2} (c+d x),2\right] \sqrt{\text{Sec}[c+d x]}+\left(b^2 \left(35 a^4-38 a^2 b^2+15 b^4\right) \sqrt{\text{Cos}[c+d x]}\ \text{EllipticPi}\left[\frac{2 a}{a+b},\frac{1}{2} (c+d x),2\right] \sqrt{\text{Sec}[c+d x]}\right)\Big/\left(4 a^4 (a-b)^2 (a+b)^3 d\right)+\frac{b^2 \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{2 a \left(a^2-b^2\right) d\ (a+b\ \text{Sec}[c+d x])^2}+\frac{b^2 \left(11 a^2-5 b^2\right) \sqrt{\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{4 a^2 \left(a^2-b^2\right)^2 d\ (a+b\ \text{Sec}[c+d x])}$$

Result (type 4, 712 leaves):

$$\frac{1}{16 a^2 (a-b)^2 (a+b)^2 d}\left(-\left(\left(2 \left(-32 a^3 b+8 a b^3\right) \text{Cos}[c+d x]^2\ \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] (a+b\ \text{Sec}[c+d x]) \sqrt{1-\text{Sec}[c+d x]^2}\ \text{Sin}[c+d x]\right)\Big/\left(a\ (b+a\ \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right)\right)\right)+\left(2 \left(8 a^4-7 a^2 b^2+5 b^4\right) \text{Cos}[c+d x]^2 \left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]+\text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right]\right) (a+b\ \text{Sec}[c+d x]) \sqrt{1-\text{Sec}[c+d x]^2}\ \text{Sin}[c+d x]\right)\Big/\left(b\ (b+a\ \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right)\right)-\left(2 \left(8 a^4-29 a^2 b^2+15 b^4\right) \text{Cos}[2 (c+d x)]\ (a+b\ \text{Sec}[c+d x]) \left(2 a b-2 a b\ \text{Sec}[c+d x]^2+2 a b\ \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+a (a-2 b)\ \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}+a^2\ \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}-2 b^2\ \text{EllipticPi}\left[-\frac{b}{a},-\text{ArcSin}\left[\sqrt{\text{Sec}[c+d x]}\right],-1\right] \sqrt{\text{Sec}[c+d x]} \sqrt{1-\text{Sec}[c+d x]^2}\right) \text{Sin}[c+d x]\right)\Big/\left(a^2 b\ (b+a\ \text{Cos}[c+d x]) \left(1-\text{Cos}[c+d x]^2\right) \sqrt{\text{Sec}[c+d x]} \left(2-\text{Sec}[c+d x]^2\right)\right)\right)+\frac{1}{d}\sqrt{\text{Sec}[c+d x]} \left(-\frac{b^2 \left(-13 a^2+7 b^2\right) \text{Sin}[c+d x]}{4 a^3 \left(-a^2+b^2\right)^2}+\frac{b^4\ \text{Sin}[c+d x]}{2 a^3 \left(a^2-b^2\right) (b+a\ \text{Cos}[c+d x])^2}+\frac{3 \left(-5 a^2 b^3\ \text{Sin}[c+d x]+3 b^5\ \text{Sin}[c+d x]\right)}{4 a^3 \left(a^2-b^2\right)^2 (b+a\ \text{Cos}[c+d x])}\right)$$

Problem 628: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Sec}[c+d x]^{3/2} \sqrt{a+b \text{Sec}[c+d x]} \, dx$$

Optimal (type 4, 237 leaves, 12 steps):

$$\frac{b \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \, \text{EllipticF}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{d \sqrt{a+b \text{Sec}[c+d x]}} + \frac{a \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \, \text{EllipticPi}\left[2, \frac{1}{2} (c+d x), \frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{d \sqrt{a+b \text{Sec}[c+d x]}} - \frac{\text{EllipticE}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \text{Sec}[c+d x]}}{d \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \sqrt{\text{Sec}[c+d x]}} + \frac{\sqrt{\text{Sec}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]} \, \text{Sin}[c+d x]}{d}$$

Result (type 4, 321 leaves):

$$\left(\sqrt{a+b \text{Sec}[c+d x]} \left(\frac{2 a \, \text{EllipticPi}\left[2, \frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{(a+b) \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}}} - \left(2 i \sqrt{-\frac{a (-1+\text{Cos}[c+d x])}{a+b}} \sqrt{\frac{a (1+\text{Cos}[c+d x])}{a-b}} \, \text{Csc}[c+d x] \left(-2 b (a+b) \, \text{EllipticE}\left[i \, \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right] + a \left(2 b \, \text{EllipticF}\left[i \, \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right] + a \, \text{EllipticPi}\left[1-\frac{a}{b}, i \, \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right]\right)\right)\right) \Big/ \left(a \sqrt{\frac{1}{a-b}} \, b \sqrt{b+a \text{Cos}[c+d x]}\right) + 4 \, \text{Tan}[c+d x]\right)\right) \Big/ \left(4 d \sqrt{\text{Sec}[c+d x]}\right)$$

Problem 634: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{Sec}[c+d\,x]^{3/2}\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,dx$$

Optimal (type 4, 299 leaves, 13 steps):

$$\frac{7\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\left(\left(3\,a^2+4\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/\left(4\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)-\frac{5\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{4\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\sqrt{\text{Sec}[c+d\,x]}}+\frac{5\,a\,\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{4\,d}+\frac{b\,\text{Sec}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{2\,d}$$

Result (type 4, 549 leaves):

$$
\begin{aligned}
&\frac{1}{16\,d\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{3/2}\,\text{Sec}[c+d\,x]^{3/2}}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\left(\frac{8\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}-\right.\\
&\quad\frac{2\,\left(-a^2-8\,b^2\right)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}-\\
&\quad\left(10\,i\,a^2\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\,\text{Cos}[2\,(c+d\,x)]\right.\\
&\quad\quad\left(-2\,b\,(a+b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.\\
&\quad\quad\quad a\,\left(2\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.\\
&\quad\quad\quad\quad\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)\\
&\quad\quad\left.\text{Sin}[c+d\,x]\right)\Bigg/\left(\sqrt{\frac{1}{a-b}}\,b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.\\
&\quad\quad\left.\left.\left(-a^2+2\,b^2-4\,b\,\left(b+a\,\text{Cos}[c+d\,x]\right)+2\,\left(b+a\,\text{Cos}[c+d\,x]\right)^2\right)\right)\right)+\\
&\left(\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\left(\frac{5}{4}\,a\,\text{Tan}[c+d\,x]+\frac{1}{2}\,b\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\right)\Big/\\
&\left(d\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\text{Sec}[c+d\,x]^{3/2}\right)
\end{aligned}
$$

Problem 635: Result unnecessarily involves imaginary or complex numbers.

$$\int\sqrt{\text{Sec}[c+d\,x]}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 4, 249 leaves, 12 steps):

$$\frac{\left(2 a^2+b^2\right) \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticF}\left[\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{d \sqrt{a+b \text{Sec}[c+d x]}}+$$
$$\frac{3 a b \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticPi}\left[2,\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{d \sqrt{a+b \text{Sec}[c+d x]}}-$$
$$\frac{b \text{EllipticE}\left[\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{a+b \text{Sec}[c+d x]}}{d \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \sqrt{\text{Sec}[c+d x]}}+$$
$$\frac{b \sqrt{\text{Sec}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]} \text{Sin}[c+d x]}{d}$$

Result (type 4, 394 leaves) :

$$\frac{1}{4 d \text{Sec}[c+d x]^{3/2}} (a+b \text{Sec}[c+d x])^{3/2} \left(\frac{8 a^2 \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticF}\left[\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right]}{(b+a \text{Cos}[c+d x])^2}+\right.$$
$$\frac{10 a b \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticPi}\left[2,\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right]}{(b+a \text{Cos}[c+d x])^2}-$$
$$\left(2 i \sqrt{-\frac{a (-1+\text{Cos}[c+d x])}{a+b}} \sqrt{\frac{a (1+\text{Cos}[c+d x])}{a-b}} \text{Csc}[c+d x]\right.$$
$$\left(-2 b (a+b) \text{EllipticE}\left[i \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right],\frac{-a+b}{a+b}\right]+\right.$$
$$a \left(2 b \text{EllipticF}\left[i \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right],\frac{-a+b}{a+b}\right]+\right.$$
$$\left.\left.\left.a \text{EllipticPi}\left[1-\frac{a}{b},i \text{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \text{Cos}[c+d x]}\right],\frac{-a+b}{a+b}\right]\right)\right)\right)\Big/$$
$$\left.\left(a \sqrt{\frac{1}{a-b}} (b+a \text{Cos}[c+d x])^{3/2}\right)+\frac{4 b \text{Tan}[c+d x]}{b+a \text{Cos}[c+d x]}\right)$$

Problem 640: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Sec}[c+d\,x]^{3/2}\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 369 leaves, 14 steps):

$$\left(b\,(59\,a^2+16\,b^2)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/\left(24\,d\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)+\left(5\,a\,(a^2+4\,b^2)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticPi}\left[2,\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\mathrm{Sec}[c+d\,x]}\right)\Big/\left(8\,d\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)-\frac{(33\,a^2+16\,b^2)\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{24\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\,\sqrt{\mathrm{Sec}[c+d\,x]}}+\frac{(33\,a^2+16\,b^2)\,\sqrt{\mathrm{Sec}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{24\,d}+\frac{13\,a\,b\,\mathrm{Sec}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{12\,d}+\frac{b^2\,\mathrm{Sec}[c+d\,x]^{5/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{3\,d}$$

Result (type 4, 602 leaves):

$$
\begin{aligned}
&-\frac{1}{96\,d\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{5/2}\,\mathrm{Sec}[c+d\,x]^{5/2}}\\
&\quad a\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,\left(-\frac{104\,a\,b\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathtt{EllipticF}\left[\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+\right.\\
&\quad\quad \frac{2\,\left(3\,a^2-104\,b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathtt{EllipticPi}\left[2,\,\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+\\
&\quad\quad \left(2\,i\,\left(33\,a^2+16\,b^2\right)\,\sqrt{\frac{a-a\,\mathrm{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\mathrm{Cos}[c+d\,x]}{a-b}}\;\mathrm{Cos}\left[2\,\left(c+d\,x\right)\right]\right.\\
&\quad\quad\quad \left(-2\,b\,\left(a+b\right)\,\mathtt{EllipticE}\left[i\,\mathtt{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.\\
&\quad\quad\quad\quad a\,\left(2\,b\,\mathtt{EllipticF}\left[i\,\mathtt{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.\\
&\quad\quad\quad\quad\quad \left.\left.a\,\mathtt{EllipticPi}\left[1-\frac{a}{b},\,i\,\mathtt{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)\\
&\quad\quad\quad \left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,b\,\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\mathrm{Cos}[c+d\,x]^2}{a^2}}\right.\\
&\quad\quad\quad \left.\left.\left(-a^2+2\,b^2-4\,b\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)+2\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^2\right)\right)\right)+\\
&\left(\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,\left(\frac{1}{24}\,\mathrm{Sec}[c+d\,x]\,\left(33\,a^2\,\mathrm{Sin}[c+d\,x]+16\,b^2\,\mathrm{Sin}[c+d\,x]\right)+\right.\right.\\
&\quad\quad \left.\left.\frac{13}{12}\,a\,b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]+\frac{1}{3}\,b^2\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\right)\right)\Big/\\
&\quad \left(d\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^2\,\mathrm{Sec}[c+d\,x]^{5/2}\right)
\end{aligned}
$$

Problem 641: Result unnecessarily involves imaginary or complex numbers.

$$\int\sqrt{\mathrm{Sec}[c+d\,x]}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 4, 314 leaves, 13 steps):

$$\left(a\left(8 a^2+11 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{\operatorname{Sec}[c+d x]}\right) \Big/ \left(4 d \sqrt{a+b \operatorname{Sec}[c+d x]}\right)+$$

$$\left(b\left(15 a^2+4 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticPi}\left[2, \frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{\operatorname{Sec}[c+d x]}\right) \Big/ \left(4 d \sqrt{a+b \operatorname{Sec}[c+d x]}\right)-\frac{9 a b \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}}{4 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \sqrt{\operatorname{Sec}[c+d x]}}+$$

$$\frac{9 a b \sqrt{\operatorname{Sec}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]} \operatorname{Sin}[c+d x]}{4 d}+$$

$$\frac{b^2 \operatorname{Sec}[c+d x]^{3/2} \sqrt{a+b \operatorname{Sec}[c+d x]} \operatorname{Sin}[c+d x]}{2 d}$$

Result (type 4, 560 leaves) :

$$\frac{1}{16\,d\,(b+a\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sec}[c+d\,x]^{5/2}}$$
$$(a+b\,\text{Sec}[c+d\,x])^{5/2}\left(\frac{2\,(16\,a^3+4\,a\,b^2)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\right.$$
$$\frac{2\,(21\,a^2\,b+8\,b^3)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}-$$
$$\left(18\,i\,a^2\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\,\text{Cos}[2\,(c+d\,x)]\right.$$
$$\left(-2\,b\,(a+b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$
$$a\,\left(2\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$
$$\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.$$
$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)+$$
$$\left((a+b\,\text{Sec}[c+d\,x])^{5/2}\left(\frac{9}{4}\,a\,b\,\text{Tan}[c+d\,x]+\frac{1}{2}\,b^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(d\,(b+a\,\text{Cos}[c+d\,x])^2\,\text{Sec}[c+d\,x]^{5/2}\right)$$

Problem 642: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Sec}[c+d\,x])^{5/2}}{\sqrt{\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 263 leaves, 12 steps):

$$\frac{b\left(4a^2+b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{d\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$

$$\frac{5\,a\,b^2\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\frac{1}{2}\left(c+d\,x\right),\frac{2a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{d\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$

$$\frac{\left(2a^2-b^2\right)\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\sqrt{\text{Sec}[c+d\,x]}}+$$

$$\frac{b^2\sqrt{\text{Sec}[c+d\,x]}\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{d}$$

Result (type 4, 538 leaves) :

$$\frac{b^2 \left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\mathrm{Sin}[c+d\,x]}{d\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^2\mathrm{Sec}[c+d\,x]^{3/2}}+\frac{1}{4\,d\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{5/2}\mathrm{Sec}[c+d\,x]^{5/2}}$$

$$a\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\left(\frac{24\,a\,b\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \mathrm{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+\right.$$

$$\frac{2\left(2\,a^2+9\,b^2\right)\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \mathrm{EllipticPi}\left[2,\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+$$

$$\left(2\,\mathrm{i}\left(2\,a^2-b^2\right)\sqrt{\frac{a-a\,\mathrm{Cos}[c+d\,x]}{a+b}}\sqrt{\frac{a+a\,\mathrm{Cos}[c+d\,x]}{a-b}}\ \mathrm{Cos}\left[2\left(c+d\,x\right)\right]\right.$$

$$\left(-2\,b\left(a+b\right)\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$a\left(2\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left.a\,\mathrm{EllipticPi}\left[1-\frac{a}{b},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\ b\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\sqrt{\frac{a^2-a^2\,\mathrm{Cos}[c+d\,x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2\,b^2-4\,b\left(b+a\,\mathrm{Cos}[c+d\,x]\right)+2\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^2\right)\right)\right)$$

Problem 643: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}}{\mathrm{Sec}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 4, 262 leaves, 12 steps):

$$\left(2\,a\,\left(a^2+2\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(3\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)+\frac{2\,b^3\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$

$$\frac{14\,a\,b\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{3\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\sqrt{\text{Sec}[c+d\,x]}}+\frac{2\,a^2\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{3\,d\,\sqrt{\text{Sec}[c+d\,x]}}$$

Result (type 4, 540 leaves) :

$$\frac{2 a^2 \left(a+b \operatorname{Sec}[c+d x]\right)^{5/2} \operatorname{Sin}[c+d x]}{3 d \left(b+a \operatorname{Cos}[c+d x]\right)^2 \operatorname{Sec}[c+d x]^{5/2}}+\frac{1}{6 d \left(b+a \operatorname{Cos}[c+d x]\right)^{5/2} \operatorname{Sec}[c+d x]^{5/2}}$$

$$\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2} \left(\frac{2 \left(2 a^3+18 a b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\ \operatorname{EllipticF}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{\sqrt{b+a \operatorname{Cos}[c+d x]}}+\right.$$

$$\frac{2 \left(7 a^2 b+6 b^3\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\ \operatorname{EllipticPi}\left[2, \frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{\sqrt{b+a \operatorname{Cos}[c+d x]}}+$$

$$\left(14 \mathrm{i}\, a^2 \sqrt{\frac{a-a \operatorname{Cos}[c+d x]}{a+b}} \sqrt{\frac{a+a \operatorname{Cos}[c+d x]}{a-b}} \operatorname{Cos}\left[2 (c+d x)\right]\right.$$

$$\left(-2 b (a+b) \operatorname{EllipticE}\left[\mathrm{i} \operatorname{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \operatorname{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right]+\right.$$

$$a \left(2 b \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \operatorname{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left. a \operatorname{EllipticPi}\left[1-\frac{a}{b}, \mathrm{i} \operatorname{ArcSinh}\left[\sqrt{\frac{1}{a-b}} \sqrt{b+a \operatorname{Cos}[c+d x]}\right], \frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\operatorname{Sin}[c+d x]\right) \Bigg/ \left(\sqrt{\frac{1}{a-b}} \sqrt{1-\operatorname{Cos}[c+d x]^2} \sqrt{\frac{a^2-a^2 \operatorname{Cos}[c+d x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2 b^2-4 b \left(b+a \operatorname{Cos}[c+d x]\right)+2 \left(b+a \operatorname{Cos}[c+d x]\right)^2\right)\right)\right)$$

Problem 647: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Sec}[c+d x]^{7/2}}{\sqrt{a+b \operatorname{Sec}[c+d x]}}\, dx$$

Optimal (type 4, 312 leaves, 13 steps):

$$-\frac{a\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{4\,b\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$

$$\left(\left(3\,a^2+4\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}\right)\Big/$$

$$\left(4\,b^2\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)+\frac{3\,a\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{4\,b^2\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\sqrt{\text{Sec}[c+d\,x]}}-$$

$$\frac{3\,a\,\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{4\,b^2\,d}+\frac{\text{Sec}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{2\,b\,d}$$

Result (type 4, 555 leaves) :

$$\frac{1}{16\, b^2\, d\, \sqrt{a+b\,\text{Sec}[c+d\,x]}}\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\sqrt{\text{Sec}[c+d\,x]}\left(\frac{8\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\right.$$

$$\frac{2\,(9\,a^2+8\,b^2)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+$$

$$\left(6\,i\,a^2\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\;\text{Cos}[2\,(c+d\,x)]\right.$$

$$\left(-2\,b\,(a+b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$

$$a\left(2\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\text{Sin}[c+d\,x]\right)\Bigg/\left(\sqrt{\frac{1}{a-b}}\;b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)+$$

$$\frac{(b+a\,\text{Cos}[c+d\,x])\,\sqrt{\text{Sec}[c+d\,x]}\,\left(-\frac{3\,a\,\text{Tan}[c+d\,x]}{4\,b^2}+\frac{\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{2\,b}\right)}{d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Problem 648: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[c+d\,x]^{5/2}}{\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 246 leaves, 12 steps):

$$\frac{\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-$$

$$\frac{a\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{b\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-$$

$$\frac{\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{b\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\sqrt{\text{Sec}[c+d\,x]}}+\frac{\sqrt{\text{Sec}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{b\,d}$$

Result (type 4, 461 leaves):

$$\frac{(b+a\,\text{Cos}[c+d\,x])\;\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{b\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-$$

$$\left(a\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\;\sqrt{\text{Sec}[c+d\,x]}\left(\frac{6\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\right.\right.$$

$$\left(2\,\mathrm{i}\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\;\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\;\text{Cos}[2\,(c+d\,x)]\right.$$

$$\left(-2\,b\,(a+b)\;\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\;\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$

$$a\left(2\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\;\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+a\,\text{EllipticPi}\left[\right.\right.$$

$$\left.\left.\left.\left.1-\frac{a}{b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\;\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)\text{Sin}[c+d\,x]\right)\Big/$$

$$\left(\sqrt{\frac{1}{a-b}}\;b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\;\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\;\left(-a^2+2\,b^2-\right.\right.$$

$$\left.\left.\left.\left.4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)\Big/\left(4\,b\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)$$

Problem 654: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[c+d x]^{7/2}}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 345 leaves, 13 steps):

$$\frac{\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{\text{Sec}[c+d x]}}{b\,d\,\sqrt{a+b\,\text{Sec}[c+d x]}}-\frac{3 a\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\;\text{EllipticPi}\left[2,\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{\text{Sec}[c+d x]}}{b^2\,d\,\sqrt{a+b\,\text{Sec}[c+d x]}}-\frac{\left(3 a^2-b^2\right)\text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d x]}}{b^2\left(a^2-b^2\right)d\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\;\sqrt{\text{Sec}[c+d x]}}-\frac{2 a^2\,\text{Sec}[c+d x]^{3/2}\,\text{Sin}[c+d x]}{b\left(a^2-b^2\right)d\sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{\left(3 a^2-b^2\right)\sqrt{\text{Sec}[c+d x]}\;\sqrt{a+b\,\text{Sec}[c+d x]}\;\text{Sin}[c+d x]}{b^2\left(a^2-b^2\right)d}$$

Result (type 4, 592 leaves):

$$-\frac{1}{4\,(a-b)\,b^2\,(a+b)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}}$$

$$a\,(b+a\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sec}[c+d\,x]^{3/2}\left(\frac{8\,a\,b\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+\right.$$

$$\frac{2\,(9\,a^2-7\,b^2)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticPi}\left[2,\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}}+$$

$$\left(2\,\mathrm{i}\,(3\,a^2-b^2)\,\sqrt{\frac{a-a\,\mathrm{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\mathrm{Cos}[c+d\,x]}{a-b}}\;\mathrm{Cos}[2\,(c+d\,x)]\right.$$

$$\left(-2\,b\,(a+b)\,\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$a\left(2\,b\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left.a\,\mathrm{EllipticPi}\left[1-\frac{a}{b},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,b\,\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\mathrm{Cos}[c+d\,x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\mathrm{Cos}[c+d\,x])+2\,(b+a\,\mathrm{Cos}[c+d\,x])^2\right)\right)\right)+$$

$$\left((b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^{3/2}\left(-\frac{2\,a^3\,\mathrm{Sin}[c+d\,x]}{b^2\,(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])}+\frac{\mathrm{Tan}[c+d\,x]}{b^2}\right)\right)\Big/$$

$$\left(d\,(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}\right)$$

Problem 655: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[c+d\,x]^{5/2}}{(a+b\,\mathrm{Sec}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 4, 206 leaves, 9 steps):

$$\frac{2\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \text{EllipticPi}\left[2,\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{\text{Sec}[c+d\,x]}}{b\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{b\,(a^2-b^2)\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \sqrt{\text{Sec}[c+d\,x]}}-\frac{2\,a^2\,\sqrt{\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]}{b\,(a^2-b^2)\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 557 leaves):

$$\frac{2\,a^2\,(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{b\,(-a^2+b^2)\,d\,(a+b\,\text{Sec}[c+d\,x])^{3/2}}+\frac{1}{2\,(a-b)\,b\,(a+b)\,d\,(a+b\,\text{Sec}[c+d\,x])^{3/2}}$$
$$(b+a\,\text{Cos}[c+d\,x])^{3/2}\,\text{Sec}[c+d\,x]^{3/2}\left(\frac{4\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \text{EllipticF}\left[\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\right.$$
$$\frac{2\,(3\,a^2-2\,b^2)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \text{EllipticPi}\left[2,\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+$$
$$\left(2\,i\,a^2\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\ \sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\ \text{Cos}[2\,(c+d\,x)]\right.$$
$$\left(-2\,b\,(a+b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\ \sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$
$$a\left(2\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\ \sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$
$$\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\ \sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]\right)\right)$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\ b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\ \sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.$$
$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)$$

Problem 661: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[c+d x]^{9/2}}{(a+b \,\text{Sec}[c+d x])^{5/2}} \, dx$$

Optimal (type 4, 458 leaves, 14 steps):

$$\frac{\left(5 a^2-3 b^2\right) \sqrt{\frac{b+a \,\text{Cos}[c+d x]}{a+b}} \,\text{EllipticF}\left[\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{3 b^2 \left(a^2-b^2\right) d \sqrt{a+b \,\text{Sec}[c+d x]}}-\frac{5 a \sqrt{\frac{b+a \,\text{Cos}[c+d x]}{a+b}} \,\text{EllipticPi}\left[2,\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{\text{Sec}[c+d x]}}{b^3 d \sqrt{a+b \,\text{Sec}[c+d x]}}-\left(\left(15 a^4-26 a^2 b^2+3 b^4\right) \text{EllipticE}\left[\frac{1}{2} (c+d x),\frac{2 a}{a+b}\right] \sqrt{a+b \,\text{Sec}[c+d x]}\right) \Big/ \left(3 b^3 \left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \,\text{Cos}[c+d x]}{a+b}} \sqrt{\text{Sec}[c+d x]}\right)-\frac{2 a^2 \,\text{Sec}[c+d x]^{5/2} \,\text{Sin}[c+d x]}{3 b \left(a^2-b^2\right) d (a+b \,\text{Sec}[c+d x])^{3/2}}-\frac{2 a^2 \left(5 a^2-9 b^2\right) \text{Sec}[c+d x]^{3/2} \,\text{Sin}[c+d x]}{3 b^2 \left(a^2-b^2\right)^2 d \sqrt{a+b \,\text{Sec}[c+d x]}}+\frac{1}{3 b^3 \left(a^2-b^2\right)^2 d}\left(15 a^4-26 a^2 b^2+3 b^4\right) \sqrt{\text{Sec}[c+d x]} \sqrt{a+b \,\text{Sec}[c+d x]} \,\text{Sin}[c+d x]$$

Result (type 4, 677 leaves):

$$-\frac{1}{12\,(a-b)^2\,b^3\,(a+b)^2\,d\,(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,a\,(b+a\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sec}[c+d\,x]^{5/2}$$

$$\left(\frac{2\,(20\,a^3\,b-36\,a\,b^3)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\left(2\,(45\,a^4-86\,a^2\,b^2+33\,b^4)\right.\right.$$

$$\left.\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\right)\Big/\left(\sqrt{b+a\,\text{Cos}[c+d\,x]}\right)+$$

$$\left(2\,i\,(15\,a^4-26\,a^2\,b^2+3\,b^4)\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\,\text{Cos}[2\,(c+d\,x)]\right.$$

$$\left(-2\,b\,(a+b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$a\,\left(2\,b\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)+$$

$$\left((b+a\,\text{Cos}[c+d\,x])^3\,\text{Sec}[c+d\,x]^{5/2}\,\left(-\frac{2\,a^3\,\text{Sin}[c+d\,x]}{3\,b^2\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d\,x])^2}-\right.\right.$$

$$\frac{4\,(-3\,a^5\,\text{Sin}[c+d\,x]+5\,a^3\,b^2\,\text{Sin}[c+d\,x])}{3\,b^3\,(-a^2+b^2)^2\,(b+a\,\text{Cos}[c+d\,x])}+$$

$$\left.\left.\frac{\text{Tan}[c+d\,x]}{b^3}\right)\right)\Big/\left(d\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\right)$$

Problem 662: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[c+d\,x]^{7/2}}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 370 leaves, 13 steps):

$$-\frac{2\,a\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{\text{Sec}[c+d\,x]}}{3\,b\,\left(a^2-b^2\right)\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{\text{Sec}[c+d\,x]}}{b^2\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,a\,\left(3\,a^2-7\,b^2\right)\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}{3\,b^2\,\left(a^2-b^2\right)^2\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\text{Sec}[c+d\,x]}}-\frac{2\,a^2\,\text{Sec}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{3\,b\,\left(a^2-b^2\right)\,d\,(a+b\,\text{Sec}[c+d\,x])^{3/2}}-\frac{2\,a^2\,\left(3\,a^2-7\,b^2\right)\,\sqrt{\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{3\,b^2\,\left(a^2-b^2\right)^2\,d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 661 leaves):

$$\frac{1}{6\,(a-b)^2\,b^2\,(a+b)^2\,d\,(a+b\,\text{Sec}[c+d\,x])^{5/2}}(b+a\,\text{Cos}[c+d\,x])^{5/2}$$

$$\text{Sec}[c+d\,x]^{5/2}\left(\frac{2\,(4\,a^3\,b-12\,a\,b^3)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{\sqrt{b+a\,\text{Cos}[c+d\,x]}}+\right.$$

$$\left(2\,(9\,a^4-19\,a^2\,b^2+6\,b^4)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\right)\Big/$$

$$\left(\sqrt{b+a\,\text{Cos}[c+d\,x]}\right)+\left(2\,\mathrm{i}\,(3\,a^4-7\,a^2\,b^2)\,\sqrt{\frac{a-a\,\text{Cos}[c+d\,x]}{a+b}}\,\sqrt{\frac{a+a\,\text{Cos}[c+d\,x]}{a-b}}\;\text{Cos}\right[$$

$$2\,(c+d\,x)\Big]\left(-2\,b\,(a+b)\,\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$

$$a\left(2\,b\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$

$$\left.\left.a\,\text{EllipticPi}\left[1-\frac{a}{b},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)\right)$$

$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(\sqrt{\frac{1}{a-b}}\;b\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\sqrt{\frac{a^2-a^2\,\text{Cos}[c+d\,x]^2}{a^2}}\right.$$

$$\left.\left.\left(-a^2+2\,b^2-4\,b\,(b+a\,\text{Cos}[c+d\,x])+2\,(b+a\,\text{Cos}[c+d\,x])^2\right)\right)\right)+$$

$$\left((b+a\,\text{Cos}[c+d\,x])^3\,\text{Sec}[c+d\,x]^{5/2}\left(\frac{2\,a^2\,\text{Sin}[c+d\,x]}{3\,b\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d\,x])^2}+\right.\right.$$

$$\left.\left.\frac{2\,(-3\,a^4\,\text{Sin}[c+d\,x]+7\,a^2\,b^2\,\text{Sin}[c+d\,x])}{3\,b^2\,(-a^2+b^2)^2\,(b+a\,\text{Cos}[c+d\,x])}\right)\right)\Big/\left(d\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\right)$$

Problem 685: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[c+d\,x]\,(a+b\,\text{Sec}[c+d\,x])^{1/3}\,dx$$

Optimal (type 6, 105 leaves, 3 steps):

$$\left(\sqrt{2}\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{1}{3},\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[c+d\,x]\right),\frac{b\left(1-\text{Sec}[c+d\,x]\right)}{a+b}\right]\right.$$
$$\left.(a+b\,\text{Sec}[c+d\,x])^{1/3}\,\text{Tan}[c+d\,x]\right)\bigg/\left(d\sqrt{1+\text{Sec}[c+d\,x]}\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{1/3}\right)$$

Result (type 6, 11281 leaves):

$$\frac{3\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}\text{Sin}[c+d\,x]}{d}+$$
$$\left(\left(-\frac{2\,b}{(b+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sec}[c+d\,x]^{2/3}}-\frac{a\,\text{Sec}[c+d\,x]^{1/3}}{2\,(b+a\,\text{Cos}[c+d\,x])^{2/3}}-\right.\right.$$
$$\left.\frac{3\,a\,\text{Cos}[2\,(c+d\,x)]\,\text{Sec}[c+d\,x]^{1/3}}{2\,(b+a\,\text{Cos}[c+d\,x])^{2/3}}\right)\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}$$
$$\left(-\frac{3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}}{\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}}-\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.\right.$$
$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$
$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$
$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\right)\Bigg/$$

$$\left(\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$

$$\left(9(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2(a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\Bigg/\left(d\,(b+a\operatorname{Cos}[c+d x])^{1/3}\right.$$

$$\operatorname{Sec}[c+d x]^{1/3}\left(-\frac{3\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}}{2\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}}+\right.$$

$$\left(2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Big/\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{5/3}-$$

$$\left(\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\right)\Big/$$

$$\left(\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\right)+$$

$$\left(3\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(-2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)-\left(3\,(a+b)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.$$

$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\left(-2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\Bigg(9\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(2\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right.\right.$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/\left(1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)$$

$$\Bigg(10\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg(-2\Bigg(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{5/3}$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\Bigg(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+\Bigg(2\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(\Bigg(-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Big/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\Bigg(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)$$

$$\Bigg(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg(-2\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{5/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+9\,(a+b)\left(\frac{1}{9\,(a+b)}\right.$$

$$2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(2\,(a-b)\,\left(\frac{1}{a+b}\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{8}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+(a+b)\,\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{4}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{4}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{7}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)$$

$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(-2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\,(a+b)\left(\frac{1}{5\,(a+b)}\right.$$

$$2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(2\,(a-b)\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3},\frac{8}{3},\right.\right.\right.$$
$$\left.\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{21}\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$(a+b)\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{20}{21}\text{AppellF1}\left[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$
$$\left.\left.\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)$$
$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$
$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2 +$$

$$15\,\mathrm{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right) - b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg) \Big/$$

$$\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\Bigg(9\,(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$

$$2\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, \frac{5}{3}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2}, \frac{4}{3}, \frac{2}{3}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$

$$2\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2\Bigg) - \Bigg(3\,(a+b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(20\,(a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+10\,(a-b)$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\left(2\,(a-b)\,\left(\frac{1}{a+b}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+(a+b)\,\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{4}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)+$$

$$3\,(a+b)\,\left(\frac{1}{9\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(-2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left(a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(-2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\right.$$

$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)-$$

$$2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(2\,(a-b)\,\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{1}{3},\,\frac{8}{3},\right.\right.\right.$$

$$\frac{9}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]+\frac{5}{21}\ \text{AppellF1}\Big[\frac{7}{2},\ \frac{4}{3},\ \frac{5}{3},\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]\Bigg)+$$

$$(a+b)\ \Bigg(\frac{1}{21\ (a+b)}10\ (a-b)\ \text{AppellF1}\Big[\frac{7}{2},\ \frac{4}{3},\ \frac{5}{3},\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]+$$

$$\frac{20}{21}\ \text{AppellF1}\Big[\frac{7}{2},\ \frac{7}{3},\ \frac{2}{3},\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]\Bigg)\Bigg)+15\ \Bigg(\frac{1}{5\ (a+b)}2\ (a-b)\ \text{AppellF1}\Big[\frac{5}{2},$$

$$\frac{1}{3},\ \frac{5}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]+\frac{1}{5}\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]\Bigg)$$

$$\left(a\ \left(-1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)-b\ \left(1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)\ \left(\frac{1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2+b\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}\right)^{2/3}$$

$$\Bigg(9\ (a+b)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]+$$

$$2\ \Bigg(2\ (a-b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]+$$

$$(a+b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg)$$

Problem 687: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]^4\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,dx$$

Optimal (type 6, 362 leaves, 10 steps):

$$\frac{3\,(9\,a^2+32\,b^2)\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{220\,b^2\,d}-$$

$$\frac{9\,a\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/3}\,\mathrm{Tan}[c+d\,x]}{44\,b^2\,d}+\frac{3\,\mathrm{Sec}[c+d\,x]\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/3}\,\mathrm{Tan}[c+d\,x]}{11\,b\,d}+$$

$$\left(a\,(18\,a^2+49\,b^2)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\right.$$

$$\left.(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]\right)\Big/\left(110\,\sqrt{2}\,b^3\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{2/3}\right)-$$

$$\left((9\,a^4+23\,a^2\,b^2-32\,b^4)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\right.$$

$$\left.\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{1/3}\mathrm{Tan}[c+d\,x]\right)\Big/\left(55\,\sqrt{2}\,b^3\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^{1/3}\right)$$

Result (type 6, 33 386 leaves): Display of huge result suppressed!

Problem 688: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]^3\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,dx$$

Optimal (type 6, 305 leaves, 9 steps):

$$-\frac{9\,a\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{40\,b\,d}+\frac{3\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/3}\,\mathrm{Tan}[c+d\,x]}{8\,b\,d}-$$
$$\left(\left(6\,a^2-25\,b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right](a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]\right)\Big/\left(20\,\sqrt{2}\,b^2\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{2/3}\right)+$$
$$\left(3\,a\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{1/3}\mathrm{Tan}[c+d\,x]\right)\Big/\left(10\,\sqrt{2}\,b^2\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^{1/3}\right)$$

Result (type 6, 29 862 leaves) : Display of huge result suppressed!

Problem 689: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]^2\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,dx$$

Optimal (type 6, 260 leaves, 8 steps) :

$$\frac{3\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]}{5\,d}+$$
$$\left(2\,\sqrt{2}\,a\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right](a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]\right)\Big/\left(5\,b\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{2/3}\right)-$$
$$\left(2\,\sqrt{2}\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{1/3}\mathrm{Tan}[c+d\,x]\right)\Big/\left(5\,b\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^{1/3}\right)$$

Result (type 6, 9607 leaves) :

$$\frac{(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\left(\frac{3\,a\,\mathrm{Sin}[c+d\,x]}{5\,b}+\frac{3}{5}\,\mathrm{Tan}[c+d\,x]\right)}{d}-$$
$$\Bigg((-2\,b+3\,a\,\mathrm{Cos}[c+d\,x])\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}$$
$$\Bigg(3\,a\,(b+a\,\mathrm{Cos}[c+d\,x])^{2/3}\,\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{2/3}-$$

$$\left(6\left(a^2-b^2\right)^2\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\right/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\right/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)-\left(25\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\right.$$

$$\left.\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(10\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]-3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\right.\right.$$

$$\left.\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\right)\Big/$$

$$\left.\left.\left(5\,b\left(-a^2+b^2\right)\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{1/3}\left(-1+\text{Sec}[c+d\,x]^2\right)\right)\right)\right)\Big/$$

$$\left(5\,b\,d\left(\frac{3\,a\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Sin}[c+d\,x]}{\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{1/3}}-\right.\right.$$

$$\frac{2\,a^2\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{2/3}\,\text{Sin}[c+d\,x]}{\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}}+$$

$$2\,a\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{5/3}\,\text{Sin}[c+d\,x]+$$

$$\frac{1}{5\,b\,\left(-a^2+b^2\right)\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\left(-1+\text{Sec}[c+d\,x]^2\right)^2}$$
$$12\,\left(a^2-b^2\right)^2\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\,\text{Sec}[c+d\,x]^{8/3}$$
$$\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\,\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$
$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$
$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$
$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$
$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)-$$
$$\left(16\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.$$
$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)-$$
$$\left(25\,\sqrt{\frac{1}{b^2}}\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(10\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]-3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\right.\right.$$

$$\left.\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\text{Sin}[c+d\,x]-$$

$$\frac{1}{5\left(-a^2+b^2\right)\sqrt{1-\text{Cos}[c+d\,x]^2}\left(-1+\text{Sec}[c+d\,x]^2\right)}6\sqrt{\frac{1}{b^2}}\left(a^2-b^2\right)^2$$

$$\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Sec}[c+d\,x]^{5/3}$$

$$\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\right/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\frac{3}{2},\frac{1}{2},$$

$$\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\Bigg(16\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\Big/\ (a+b\,\mathrm{Sec}[c+d\,x])\Bigg)\Bigg)-$$

$$\left(25\sqrt{\frac{1}{b^2}}\ \left(-a^2+b^2\right)\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right)\Big/$$

$$\Bigg(10\sqrt{\frac{1}{b^2}}\ \left(-a^2+b^2\right)\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]-3\Bigg(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{5}{3},\frac{1}{2},$$

$$\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)(a+b\,\text{Sec}[c+d\,x])\right)\right)\text{Sin}[c+d\,x]+$$

$$\frac{1}{5\left(-a^2+b^2\right)\sqrt{1-\text{Cos}[c+d\,x]^2}\left(-1+\text{Sec}[c+d\,x]^2\right)}6\sqrt{\frac{1}{b^2}}\left(a^2-b^2\right)^2$$

$$(b+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sec}[c+d\,x]^{5/3}$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\,(a+b\,\text{Sec}[c+d\,x])\right)\right)-$$

$$\left(25\sqrt{\frac{1}{b^2}}\,(-a^2+b^2)\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(10\sqrt{\frac{1}{b^2}}\,(-a^2+b^2)\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]-3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\right.\right.$$

$$\left.\frac{3}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\,(a+b\,\text{Sec}[c+d\,x])\right)\right)\,\text{Sin}[c+d\,x]+$$

$$\left(6\,(a^2-b^2)^2\,(b+a\,\text{Cos}[c+d\,x])^{2/3}\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)-\left(25\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\right.$$

$$\left.\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(10\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]-3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},\right.$$

$$\frac{3}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{5}{3},\ \frac{3}{2},\ \frac{1}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]\right)(a+b\,\text{Sec}[c+d\,x])\Bigg)\Bigg)\,\text{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\left(5\,b\,(-a^2+b^2)\,(1-\text{Cos}[c+d\,x]^2)^{3/2}\,\text{Sec}[c+d\,x]^{4/3}\,(-1+\text{Sec}[c+d\,x]^2)\right)+$$

$$\left(4\,a\,(a^2-b^2)^2\left(1-\sqrt{\frac{1}{b^2}}\ b\,\text{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\ b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{8}{3},\ -\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\ \frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right)\Bigg/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{8}{3},\ \frac{1}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},\ \frac{1}{2},$$

$$\frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]\Bigg) -$$

$$\Bigg(16\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg) \Big/ \ (a+b\,\text{Sec}[c+d\,x])\Bigg)\Bigg) - \Bigg(25\sqrt{\frac{1}{b^2}}\ (-a^2+b^2)$$

$$\text{AppellF1}\Big[\frac{2}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{5}{3},\ -\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\ \frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\Bigg) \Big/$$

$$\Bigg(10\sqrt{\frac{1}{b^2}}\ (-a^2+b^2)\ \text{AppellF1}\Big[\frac{2}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{5}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big] - 3\ \Bigg(\Bigg(-1+a\sqrt{\frac{1}{b^2}}\Bigg)\ \text{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},$$

$$\frac{3}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big] +$$

$$\Bigg(1+a\sqrt{\frac{1}{b^2}}\Bigg)\ \text{AppellF1}\Big[\frac{5}{3},\ \frac{3}{2},\ \frac{1}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)(a+b\,\text{Sec}[c+d\,x])\right)\right)\text{Sin}[c+d\,x]\right)\Big/$$

$$\left(5\,b\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d\,x])^{1/3}\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{1/3}\left(-1+\text{Sec}[c+d\,x]^2\right)\right)+$$

$$\frac{1}{5\,b\,(-a^2+b^2)\sqrt{1-\text{Cos}[c+d\,x]^2}\,\left(-1+\text{Sec}[c+d\,x]^2\right)}$$

$$2\,(a^2-b^2)^2\,(b+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sec}[c+d\,x]^{2/3}\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(16\,a\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Bigg/\left(a+b\,\text{Sec}[c+d\,x]\right)\Bigg)\Bigg)-$$

$$\left(25\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Bigg/$$

$$\left(10\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]-$$

$$3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)$$

$$\text{Sin}[c+d\,x] - \Bigg(6\,\left(a^2-b^2\right)^2\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\left(1-\sqrt{\frac{1}{b^2}}\;b\,\text{Sec}[c+d\,x]\right)$$

$$\left(1+\sqrt{\frac{1}{b^2}}\;b\,\text{Sec}[c+d\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(25\,\sqrt{\frac{1}{b^2}}\,\left(-a^2+b^2\right)\Bigg(\Bigg(b\,\text{AppellF1}\Big[\frac{5}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{8}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},$$

$$\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\Bigg)\Bigg/\left(5\left(a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)-$$

$$\Bigg(b\,\text{AppellF1}\Big[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\,\frac{8}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]$$

$$\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\Bigg)\Bigg/\left(5\left(-a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(10\,\sqrt{\frac{1}{b^2}}\,\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]-3\,\Bigg(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{5}{3},\,\frac{1}{2},$$

$$\frac{3}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{5}{3},\ \frac{3}{2},\ \frac{1}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\right)\ (a+b\,\text{Sec}[c+d\,x])\right)\Bigg)-$$

$$\left(16\,a\left(\left(5\,b\,\text{AppellF1}\Big[\frac{8}{3},\ \frac{1}{2},\ \frac{3}{2},\ \frac{11}{3},\ -\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\ \frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right.\right.\right.$$

$$\left.\text{Sec}[c+d\,x]\ \text{Tan}[c+d\,x]\right)\Big/\left(16\left(a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)-$$

$$\left(5\,b\,\text{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},\ \frac{1}{2},\ \frac{11}{3},\ -\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\ \frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right.$$

$$\left.\left.\left.\text{Sec}[c+d\,x]\ \text{Tan}[c+d\,x]\right)\Big/\left(16\left(-a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)\right)\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Big[\frac{8}{3},\ \frac{1}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\mathrm{AppellF1}\Big[\frac{8}{3},\,\frac{3}{2},\,\frac{1}{2},$$

$$\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\Bigg(16\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\Big[\frac{5}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\Bigg/\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\Bigg)+$$

$$\Bigg(25\,\sqrt{\frac{1}{b^2}}\,\left(-a^2+b^2\right)\,\mathrm{AppellF1}\Big[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]$$

$$\Bigg(-3\,b\,\Bigg(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\mathrm{AppellF1}\Big[\frac{5}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\mathrm{AppellF1}\Big[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\,\frac{8}{3},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\,\mathrm{Sec}[c+d\,x]$$

$$\text{Tan}[c+d\,x] + 10\sqrt{\frac{1}{b^2}}\left(-a^2+b^2\right)\left(\left(\left(\sqrt{\frac{1}{b^2}}\ b\ \text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\right.\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\text{Sec}[c+d\,x]$$

$$\left.\text{Tan}[c+d\,x]\right)\Big/\left(5\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\left(\sqrt{\frac{1}{b^2}}\ b\ \text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\right.\right.$$

$$\left.\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]$$

$$\left.\left.\text{Sec}[c+d\,x]\ \text{Tan}[c+d\,x]\right)\Big/\left(5\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\right)-$$

$$3\left(a+b\,\text{Sec}[c+d\,x]\right)\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\left(\left(15\sqrt{\frac{1}{b^2}}\ b\ \text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\right.\right.\right.\right.$$

$$\left.\frac{5}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\text{Sec}[$$

$$\left.c+d\,x]\ \text{Tan}[c+d\,x]\right)\Big/\left(16\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\left(5\sqrt{\frac{1}{b^2}}\ b\ \text{AppellF1}\left[\frac{8}{3},\right.\right.$$

$$\frac{3}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\mathrm{Sec}[c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)+\left(1+a\sqrt{\frac{1}{b^2}}\right)$$

$$\Bigg(\Bigg(5\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/$$

$$\left(16\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\Bigg(15\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{5}{2},\ \frac{1}{2},\ \frac{11}{3},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\mathrm{Sec}[c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(10\sqrt{\frac{1}{b^2}}\ \left(-a^2+b^2\right)\ \mathrm{AppellF1}\Big[\frac{2}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{5}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]-3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Bigg[\frac{5}{3},\frac{1}{2},\right.$$

$$\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]+$$

$$\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\Bigg[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]\right)(a+b\,\text{Sec}[c+d\,x])\right)^2+$$

$$\left(16\,a\,\text{AppellF1}\Bigg[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Bigg]\right.$$

$$\left(\left(16\,b\,(a^2-b^2)\,\text{AppellF1}\Bigg[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/$$

$$(a+b\,\text{Sec}[c+d\,x])^2-\left(16\,(a^2-b^2)\left(\left(5\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\Bigg[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\right.\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[c+d\,x]$$

$$\mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\Bigg(5\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},$$

$$\frac{1}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[$$

$$c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)\Bigg)\Bigg/\ (a+b\,\mathrm{Sec}[c+d\,x])\ -$$

$$\frac{1}{\sqrt{\frac{1}{b^2}}}\,3\Bigg(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\Bigg(\Bigg(12\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{11}{3},\ \frac{1}{2},\ \frac{5}{2},\ \frac{14}{3},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[c+d\,x]$$

$$\mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(11\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\Bigg(4\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{11}{3},$$

$$\frac{3}{2},\ \frac{3}{2},\ \frac{14}{3},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\left.\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/\left(11\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\right)+\left(1+a\sqrt{\frac{1}{b^2}}\right)$$

$$\left(\left(4\sqrt{\frac{1}{b^2}}\;b\,\text{AppellF1}\left[\frac{11}{3},\frac{3}{2},\frac{3}{2},\frac{14}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/$$

$$\left(11\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\left(12\sqrt{\frac{1}{b^2}}\;b\,\text{AppellF1}\left[\frac{11}{3},\frac{5}{2},\frac{1}{2},\frac{14}{3},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]$$

$$\left.\left.\left.\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/\left(11\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\right)\right)\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\,(a^2-b^2)\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\,(a+b\,\mathrm{Sec}[c+d\,x])\right)^2\right)\right)\Big/$$

$$\left.\left.\left(5\,b\,(-a^2+b^2)\,\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\;\mathrm{Sec}[c+d\,x]^{1/3}\,(-1+\mathrm{Sec}[c+d\,x]^2)\right)\right)\right)$$

Problem 690: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c+d\,x]\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,dx$$

Optimal (type 6, 105 leaves, 3 steps):

$$\left(\sqrt{2}\;\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\right.$$

$$\left.(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Tan}[c+d\,x]\right)\Big/\left(d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{2/3}\right)$$

Result (type 6, 11 285 leaves):

$$\frac{3\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\,\mathrm{Sin}[c+d\,x]}{2\,d}+$$

$$\left(\left(-\frac{b}{2\,(b+a\,\mathrm{Cos}[c+d\,x])^{1/3}\,\mathrm{Sec}[c+d\,x]^{1/3}}+\frac{a\,\mathrm{Sec}[c+d\,x]^{2/3}}{4\,(b+a\,\mathrm{Cos}[c+d\,x])^{1/3}}-\right.\right.$$

$$\left.\frac{3\,a\,\mathrm{Cos}[2\,(c+d\,x)]\,\mathrm{Sec}[c+d\,x]^{2/3}}{4\,(b+a\,\mathrm{Cos}[c+d\,x])^{1/3}}\right)\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}$$

$$\left(-\frac{3\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}}{2\,\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}} - \left(3\,(a+b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.\right.$$

$$\left(10\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^4+3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(2\,\left((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(a+b+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2-b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\Bigg/$$

$$\left(2\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/\Bigg(d\left(b+a\,\text{Cos}\left[c+d\,x\right]\right)^{2/3}$$

$$\text{Sec}\left[c+d\,x\right]^{2/3}\left(-\frac{3\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}}{4\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}}+\right.$$

$$\Bigg(\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+$$

$$\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg/$$

$$\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\Bigg)\Bigg)\Bigg/\left(2\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{4/3}\right)-$$

$$\Bigg(\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg(\Bigg(-a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(c+d\,x\right)\Big]\Bigg)\Bigg/\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-\Bigg(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Bigg/\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\Bigg)\Bigg)\Bigg/$$

$$\left(\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right)+$$

$$\left(3(a+b)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

$$\left(10(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(2\left((a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(a+b+a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2-b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(9(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Bigg)-\Bigg(3\,(a+b)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\Bigg(10\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]$$

$$\Bigg((a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4+3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\Bigg(2\,\Bigg((a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]+2\,(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2+$$

$$15\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]$$

$$\Bigg(a+b+a\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2-b\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(4\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)+$$

$$\left((a+b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right.\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)$$

$$\left(10(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(a+b+a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2-b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{4/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)+\left((a+b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.$$

$$\left(\left(\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right/\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.\right.$$

$$\left.\left.\left.\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)$$

$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(a+b+a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2-b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\right/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{4/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$

$$\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.\right.$$
$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Bigg]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$9\,(a+b)\left(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\left((a-b)\left(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,(a+b)\,\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)$$

$$\left(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(a+b+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2-b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\,(a+b)\left(\frac{1}{5\,(a+b)}\right.$$

$$(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((a-b)\left(\frac{1}{21\,(a+b)}20\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},\frac{7}{3},\frac{9}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{10}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$

$$2\,(a+b)\left(\frac{1}{21\,(a+b)}5\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{25}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)$$

$$\Bigg(10\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(a+b+a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2-b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)-$$

$$\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(20\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+10\,(a-b)$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\left(\frac{1}{5(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+10(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\right.$$

$$\left.\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4$$

$$\left((a-b)\left(\frac{1}{5(a+b)}4(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+2(a+b)\left(\frac{1}{5(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)+$$

$$3(a+b)\left(\frac{1}{9(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg/\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left(a+b+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2-b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+$$

$$3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$15\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(a+b+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2-\right.$$

$$b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big) + 2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\Bigg((a-b)\,\Bigg(\frac{1}{21\,(a+b)}20\,(a-b)$$

$$\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},\frac{7}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right] + \frac{10}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg) + 2\,(a+b)\,\Bigg(\frac{1}{21\,(a+b)}5\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\right.$$

$$\left.\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right] + \frac{25}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(2\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\left(\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right] +$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right] +$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right] +$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right] +$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 692: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[c+d\,x]\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{4/3}\,dx$$

Optimal (type 6, 108 leaves, 3 steps):

$$\left(\sqrt{2}\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{4}{3},\frac{3}{2},\frac{1}{2}(1-\text{Sec}[c+d\,x]),\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}\right]\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}\text{Tan}[c+d\,x]\right)\Bigg/\left(d\,\sqrt{1+\text{Sec}[c+d\,x]}\,\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{1/3}\right)$$

Result (type 6, 11 551 leaves):

$$\Bigg(\left(-\frac{5\,a\,b}{2\,(b+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sec}[c+d\,x]^{2/3}}-\frac{7\,a^2\,\text{Sec}[c+d\,x]^{1/3}}{8\,(b+a\,\text{Cos}[c+d\,x])^{2/3}}+\frac{b^2\,\text{Sec}[c+d\,x]^{1/3}}{4\,(b+a\,\text{Cos}[c+d\,x])^{2/3}}-\frac{15\,a^2\,\text{Cos}[2\,(c+d\,x)]\,\text{Sec}[c+d\,x]^{1/3}}{8\,(b+a\,\text{Cos}[c+d\,x])^{2/3}}\right)\left(a+b\,\text{Sec}[c+d\,x]\right)^{4/3}$$

$$\left(-\frac{15\,a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}}{4\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}}-\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.\right.$$

$$\left(50\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(-2\,(7\,a-2\,b)\,\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\right.\right.\right.$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(2\,b^2-5\,a\,b\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)+a^2\,\left(-7+5\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(4\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)\right)\Bigg/\left(d\left(b+a\,\text{Cos}[c+d\,x]\right)^{4/3}\right.$$

$$\text{Sec}[c+d\,x]^{4/3}\left(-\frac{15\,a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}}{8\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}}+\right.$$

$$\left(5\,a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.\right.$$

$$\left.\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\right)\Big/$$

$$\left(2\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{5/3}\right)-\left(5\,a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.$$

$$\left(\left(-a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big/\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.$$

$$\left.\left.\left.\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\right)\Big/$$

$$\left(4\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}\right)+$$

$$\left(3\left(a+b\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right.$$

$$\left(50\,a\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(-2(7 a-2 b)\left(2(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(2 b^2-5 a b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+a^2\left(-7+5\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\left(4\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\right.$$

$$\left(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\left(2(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\left(2(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Bigg) - \Bigg(3\left(a+b\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\Bigg(50\,a\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^4+3\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg(-2\left(7\,a-2\,b\right)\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]+\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\right.$$

$$\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\Bigg)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\left(2\,b^2-5\,a\,b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)+a^2\left(-7+5\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(8\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\Bigg(9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg((a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\,\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}+\Bigg(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\,\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)$$

$$\Bigg(50\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\Bigg(-2\,(7\,a-2\,b)\,\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},$$

$$\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(2\,b^2-5\,a\,b\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)+a^2\left(-7+5\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(2\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{5/3}\right.$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+\left((a+b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.$$

$$\left(\left(-a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Big/\right.$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-\left(\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.$$

$$\left.\left.\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\right)$$

$$\left(50\,a\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(7\,a-2\,b)\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(2\,b^2-5\,a\,b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-7+5\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{5/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+9\,(a+b)\left(\frac{1}{9\,(a+b)}\right.$$

$$2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(2\,(a-b)\left(\frac{1}{a+b}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+(a+b)\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{4}{5}\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)$$

$$\left(50\, a\, (a-b)\, \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(7\,a-2\,b)\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(2\,b^2-5\,a\,b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-7+5\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Bigg/$$

$$\left(4\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+15\,(a+b)\,\left(\frac{1}{5\,(a+b)}\right.$$

$$2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(2\,(a-b)\,\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3},\frac{8}{3},\right.\right.\right.$$

$$\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$(a+b)\,\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{20}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)$$

$$\Bigg(50\,a\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg(-2\,(7\,a-2\,b)\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\right.$$

$$\left.\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(2\,b^2-5\,a\,b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-7+5\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(4\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\Bigg(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)-$$

$$\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(100\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$
$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+50\,a\,(a-b)$$
$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$
$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$50\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\left(2\,(a-b)\left(\frac{1}{a+b}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+(a+b)\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{4}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)+$$

$$3\,(a+b)\left(\frac{1}{9\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(-2\,(7\,a-2\,b)\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\right.\right.\right.$$

$$\left.\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(2\,b^2-5\,a\,b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-7+5\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+3\,(a+b)$$

$$\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(7\,a-2\,b)\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(5\,a^2\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-5\,a\,b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)-$$

$$2\,(7\,a-2\,b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(2\,(a-b)\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3},\right.\right.\right.$$

$$\left.\frac{8}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$(a+b)\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{20}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)+15\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\frac{1}{3},\ \frac{5}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{1}{5}\,\text{AppellF1}\Big[\frac{5}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$\left.\frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\left.\left.\left.\left(2\,b^2-5\,a\,b\,\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)+a^2\,\left(-7+5\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(4\,\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\,\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\left(9\,\left(a+b\right)\,\text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]+\right.$$

$$2\,\left(2\,\left(a-b\right)\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]+\right.$$

$$\left(a+b\right)\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$\left.\left.\frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left(15\,\left(a+b\right)\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]+\right.$$

$$2\,\left(2\,\left(a-b\right)\,\text{AppellF1}\Big[\frac{5}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]+\right.$$

$$\left(a+b\right)\,\text{AppellF1}\Big[\frac{5}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$\left.\left.\left.\left.\frac{\left(a-b\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\right)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(\text{Cos}\left[c+d\,x\right]\,\left(a+b\,\text{Sec}\left[c+d\,x\right]\right)^{4/3}\,\left(\frac{15}{4}\,a\,\text{Sin}\left[c+d\,x\right]+\right.\right.$$

$$\left.\left.\frac{3}{4}\, b\, \mathrm{Tan}[c + d\, x]\right)\right) \Big/ \left(d\, (b + a\, \mathrm{Cos}[c + d\, x])\right)$$

Problem 694: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c + d\, x]^4\, (a + b\, \mathrm{Sec}[c + d\, x])^{5/3}\, dx$$

Optimal (type 6, 412 leaves, 11 steps):

$$\frac{3\, a\, (18\, a^2 + 97\, b^2)\, (a + b\, \mathrm{Sec}[c + d\, x])^{2/3}\, \mathrm{Tan}[c + d\, x]}{1232\, b^2\, d} + \frac{3\, (18\, a^2 + 121\, b^2)\, (a + b\, \mathrm{Sec}[c + d\, x])^{5/3}\, \mathrm{Tan}[c + d\, x]}{1232\, b^2\, d} - \frac{9\, a\, (a + b\, \mathrm{Sec}[c + d\, x])^{8/3}\, \mathrm{Tan}[c + d\, x]}{77\, b^2\, d} + \frac{3\, \mathrm{Sec}[c + d\, x]\, (a + b\, \mathrm{Sec}[c + d\, x])^{8/3}\, \mathrm{Tan}[c + d\, x]}{14\, b\, d} + \left((36\, a^4 + 164\, a^2\, b^2 + 605\, b^4)\, \mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, -\frac{2}{3}, \frac{3}{2}, \frac{1}{2}\, (1 - \mathrm{Sec}[c + d\, x]), \frac{b\, (1 - \mathrm{Sec}[c + d\, x])}{a + b}\right] (a + b\, \mathrm{Sec}[c + d\, x])^{2/3}\, \mathrm{Tan}[c + d\, x]\right) \Big/ \left(616\, \sqrt{2}\, b^3\, d\, \sqrt{1 + \mathrm{Sec}[c + d\, x]}\, \left(\frac{a + b\, \mathrm{Sec}[c + d\, x]}{a + b}\right)^{2/3}\right) - \left(a\, (18\, a^4 + 79\, a^2\, b^2 - 97\, b^4)\, \mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{3}, \frac{3}{2}, \frac{1}{2}\, (1 - \mathrm{Sec}[c + d\, x]), \frac{b\, (1 - \mathrm{Sec}[c + d\, x])}{a + b}\right] \left(\frac{a + b\, \mathrm{Sec}[c + d\, x]}{a + b}\right)^{1/3} \mathrm{Tan}[c + d\, x]\right) \Big/ \left(308\, \sqrt{2}\, b^3\, d\, \sqrt{1 + \mathrm{Sec}[c + d\, x]}\, (a + b\, \mathrm{Sec}[c + d\, x])^{1/3}\right)$$

Result (type 6, 44 504 leaves): Display of huge result suppressed!

Problem 695: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[c + d\, x]^3\, (a + b\, \mathrm{Sec}[c + d\, x])^{5/3}\, dx$$

Optimal (type 6, 356 leaves, 10 steps):

$$-\frac{3\left(15 a^2-64 b^2\right)\left(a+b \operatorname{Sec}[c+d x]\right)^{2/3} \operatorname{Tan}[c+d x]}{440 b d}-\frac{9 a\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3} \operatorname{Tan}[c+d x]}{88 b d}+\frac{3\left(a+b \operatorname{Sec}[c+d x]\right)^{8/3} \operatorname{Tan}[c+d x]}{11 b d}-\left(a\left(30 a^2-373 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2},-\frac{2}{3}, \frac{3}{2}, \frac{1}{2}(1-\operatorname{Sec}[c+d x]), \frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\left(a+b \operatorname{Sec}[c+d x]\right)^{2/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(220 \sqrt{2} b^2 d \sqrt{1+\operatorname{Sec}[c+d x]}\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3}\right)+\left(\left(15 a^4-79 a^2 b^2+64 b^4\right) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{3}, \frac{3}{2}, \frac{1}{2}(1-\operatorname{Sec}[c+d x]), \frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(110 \sqrt{2} b^2 d \sqrt{1+\operatorname{Sec}[c+d x]}\left(a+b \operatorname{Sec}[c+d x]\right)^{1/3}\right)$$

Result (type 6, 33 405 leaves) : Display of huge result suppressed!

Problem 696: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Sec}[c+d x]^2\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3} dx$$

Optimal (type 6, 299 leaves, 9 steps) :

$$\frac{3 a\left(a+b \operatorname{Sec}[c+d x]\right)^{2/3} \operatorname{Tan}[c+d x]}{8 d}+\frac{3\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3} \operatorname{Tan}[c+d x]}{8 d}+\left(\left(2 a^2+5 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2},-\frac{2}{3}, \frac{3}{2}, \frac{1}{2}(1-\operatorname{Sec}[c+d x]), \frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\left(a+b \operatorname{Sec}[c+d x]\right)^{2/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(4 \sqrt{2} b d \sqrt{1+\operatorname{Sec}[c+d x]}\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3}\right)-\left(a\left(a^2-b^2\right) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{3}, \frac{3}{2}, \frac{1}{2}(1-\operatorname{Sec}[c+d x]), \frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(2 \sqrt{2} b d \sqrt{1+\operatorname{Sec}[c+d x]}\left(a+b \operatorname{Sec}[c+d x]\right)^{1/3}\right)$$

Result (type 6, 29 873 leaves) : Display of huge result suppressed!

Problem 697: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Sec}[c+d x]\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3} dx$$

Optimal (type 6, 108 leaves, 3 steps) :

$$\left(\sqrt{2}(a+b) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2},-\frac{5}{3}, \frac{3}{2}, \frac{1}{2}(1-\operatorname{Sec}[c+d x]), \frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\left(a+b \operatorname{Sec}[c+d x]\right)^{2/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(d \sqrt{1+\operatorname{Sec}[c+d x]}\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3}\right)$$

Result (type 6, 11 531 leaves) :

$$\Bigg(\Bigg(-\frac{7\,a\,b}{10\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\,\mathrm{Sec}[c+d\,x]^{1/3}}-\frac{a^2\,\mathrm{Sec}[c+d\,x]^{2/3}}{20\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}}+\frac{2\,b^2\,\mathrm{Sec}[c+d\,x]^{2/3}}{5\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}}-\frac{21\,a^2\,\mathrm{Cos}\left[2\,(c+d\,x)\right]\,\mathrm{Sec}[c+d\,x]^{2/3}}{20\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}}\Bigg)\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/3}$$

$$\Bigg(-\frac{21\,a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\,\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}}{10\,\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}}-\Bigg(3\,(a+b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(70\,a\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg/$$

$$\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg(-2\,(a-8\,b)\,\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(8\,b^2-7\,a\,b\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\,\left(-1+7\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(10\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\,\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\Big/\left(d\,(b+a\,\text{Cos}[c+d\,x])^{5/3}\right.$$

$$\text{Sec}[c+d\,x]^{5/3}\left(-\frac{21\,a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}}{20\left(\frac{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}}+\right.$$

$$\left(7\,a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.\right.$$

$$\left.\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\right)\right)\Big/$$

$$\left(10\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{4/3}\right)-\left(7\,a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.$$

$$\left(\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right.$$

$$\left.\left.\left.\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\right)\Big/$$

$$\left(5\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right)+$$

$$\left(3\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right.$$

$$\left(70\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(-2\,(a-8\,b)\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Bigg]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(8\,b^2-7\,a\,b\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\right)\right)\Big/$$

$$\left(10\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)-\left(3\,(a+b)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.$$

$$\left(70\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(-2\,(a-8\,b)\,\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\right.$$

$$\frac{1}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\left(8\,b^2-7\,a\,b\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)+a^2\left(-1+7\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(20\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\left(\frac{1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}$$

$$\Bigg(9\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left(a+b\right)\mathrm{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\Bigg(15\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left(a+b\right)\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$\frac{\left(a-b\right)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(\left(a+b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+\Bigg(\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Bigg/\left(1-\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\Bigg)$$

$$\left(70\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(a-8\,b)\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(8\,b^2-7\,a\,b\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Bigg/$$

$$\left(10\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{4/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left((a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big/\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left.\left.\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)$$

$$\left(70\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(a-8\,b)\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left(8\,b^2-7\,a\,b\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(10\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{4/3}$$

$$\left(9(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)+$$

$$\left(3(a+b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\left(2\left((a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.\right.$$

$$\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]+2(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$9(a+b)\left(\frac{1}{9(a+b)}(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\left((a-b)\left(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2\,(a+b)\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)$$

$$\left(70\,a\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^4+3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\left(-2\,(a-8\,b)\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(8\,b^2-7\,a\,b\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(10\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+\left(3\,(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right.$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\,(a+b)\left(\frac{1}{5\,(a+b)}\right.$$

$$\left(a-b\right) \text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, \frac{4}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right] + \frac{2}{5} \text{AppellF1}\left[\frac{5}{2}, \frac{5}{3}, \frac{1}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.$$

$$\left.\left.\frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right) +$$

$$2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \left(\left(a-b\right) \left(\frac{1}{21 \left(a+b\right)} 20 \left(a-b\right) \text{AppellF1}\left[\frac{7}{2}, \frac{2}{3}, \frac{7}{3}, \frac{9}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right] + \frac{10}{21} \text{AppellF1}\left[\frac{7}{2}, \frac{5}{3}, \frac{4}{3}, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.$$

$$\left.\left.\frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right) +$$

$$2 \left(a+b\right) \left(\frac{1}{21 \left(a+b\right)} 5 \left(a-b\right) \text{AppellF1}\left[\frac{7}{2}, \frac{5}{3}, \frac{4}{3}, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.\right.$$

$$\left.\frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right] +$$

$$\frac{25}{21} \text{AppellF1}\left[\frac{7}{2}, \frac{8}{3}, \frac{1}{3}, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\right)\right)$$

$$\left(70 a \left(a-b\right) \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\right.$$

$$\left(\left(a-b\right) \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] +\right.$$

$$\left.2 \left(a+b\right) \text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, \frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^4 + 3 \left(a+b\right) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right] \left(-2 \left(a-8 b\right) \left(\left(a-b\right) \text{AppellF1}\left[\frac{5}{2}, \frac{2}{3}, \frac{4}{3}, \frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+$$

$$15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left(8 b^2-7 a b\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\right)\right)\Big/$$

$$\left(10\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)-$$

$$\left(3(a+b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(140\,a(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3+70\,a\,(a-b)$$

$$\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\left(\frac{1}{5\,(a+b)}(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+70\,a\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\right.$$

$$\left.\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4$$

$$\left((a-b)\left(\frac{1}{5\,(a+b)}4\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,(a+b)\left(\frac{1}{5\,(a+b)}(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\right.\right.$$

$$\left.\frac{5}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\mathrm{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\right.$$

$$\left.\left.\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)+$$

$$3\left(a+b\right)\left(\frac{1}{9\left(a+b\right)}\left(a-b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\right.\right.$$

$$\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{2}{9}\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(-2\left(a-8\,b\right)\left(\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\right.\right.\right.$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]+2\left(a+b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},$$

$$\left.\left.\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}+$$

$$15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]$$

$$\left.\left(8\,b^{2}-7\,a\,b\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\right)+a^{2}\left(-1+7\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\right)\right)\right)+$$

$$3\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]$$

$$\left(-2\left(a-8\,b\right)\left(\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\right.\right.\right.$$

$$\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]+2\left(a+b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2},\right.$$

$$\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}}{a+b}\right]\left(7\,a^{2}\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\right.$$

$$\left.7\,a\,b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)-$$

$$2\left(a-8b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\left(\left(a-b\right)\left(\frac{1}{21\left(a+b\right)}20\left(a-b\right)\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},\frac{7}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]+\frac{10}{21}\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\Bigg)+$$

$$2\left(a+b\right)\left(\frac{1}{21\left(a+b\right)}5\left(a-b\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]+\right.$$

$$\frac{25}{21}\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\Bigg)\Bigg)+15\left(\frac{1}{5\left(a+b\right)}\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\Bigg)$$

$$\left(8b^2-7ab\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)+a^2\left(-1+7\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(10\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}\right)^{1/3}$$

$$\left(9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]+\right.$$

$$2\left(\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)+$$

$$\left(\text{Cos}[c+d\,x]\,(a+b\,\text{Sec}[c+d\,x])^{5/3}\left(\frac{21}{10}\,a\,\text{Sin}[c+d\,x]+\frac{3}{5}\,b\,\text{Tan}[c+d\,x]\right)\right)\Big/\left(d\,(b+a\,\text{Cos}[c+d\,x])\right)$$

Problem 699: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^4}{(a+b\,\text{Sec}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 6, 313 leaves, 9 steps):

$$-\frac{9 a (a+b \operatorname{Sec}[c+d x])^{2/3} \operatorname{Tan}[c+d x]}{20 b^2 d}+\frac{3 \operatorname{Sec}[c+d x] (a+b \operatorname{Sec}[c+d x])^{2/3} \operatorname{Tan}[c+d x]}{8 b d}+$$
$$\left(\left(18 a^2+25 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}(1-\operatorname{Sec}[c+d x]),\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.(a+b \operatorname{Sec}[c+d x])^{2/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(20 \sqrt{2} b^3 d \sqrt{1+\operatorname{Sec}[c+d x]}\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3}\right)-$$
$$\left(a\left(9 a^2+11 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}(1-\operatorname{Sec}[c+d x]),\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(10 \sqrt{2} b^3 d \sqrt{1+\operatorname{Sec}[c+d x]}(a+b \operatorname{Sec}[c+d x])^{1/3}\right)$$

Result (type 6, 29 880 leaves) : Display of huge result suppressed!

Problem 700: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Sec}[c+d x]^3}{(a+b \operatorname{Sec}[c+d x])^{1/3}} \, dx$$

Optimal (type 6, 265 leaves, 8 steps) :

$$\frac{3 (a+b \operatorname{Sec}[c+d x])^{2/3} \operatorname{Tan}[c+d x]}{5 b d}-$$
$$\left(3 \sqrt{2} a \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}(1-\operatorname{Sec}[c+d x]),\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.(a+b \operatorname{Sec}[c+d x])^{2/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(5 b^2 d \sqrt{1+\operatorname{Sec}[c+d x]}\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3}\right)+$$
$$\left(\sqrt{2}\left(3 a^2+2 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}(1-\operatorname{Sec}[c+d x]),\frac{b(1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3} \operatorname{Tan}[c+d x]\right) \Big/ \left(5 b^2 d \sqrt{1+\operatorname{Sec}[c+d x]}(a+b \operatorname{Sec}[c+d x])^{1/3}\right)$$

Result (type 6, 18 777 leaves) :

$$\left(9 (b+a \operatorname{Cos}[c+d x])^{1/3}\left(\frac{3 a}{10 b (b+a \operatorname{Cos}[c+d x])^{1/3} \operatorname{Sec}[c+d x]^{1/3}}+\frac{2 \operatorname{Sec}[c+d x]^{2/3}}{5 (b+a \operatorname{Cos}[c+d x])^{1/3}}+\right.\right.$$
$$\left.\frac{9 a^2 \operatorname{Sec}[c+d x]^{2/3}}{20 b^2 (b+a \operatorname{Cos}[c+d x])^{1/3}}+\frac{9 a^2 \operatorname{Cos}[2(c+d x)] \operatorname{Sec}[c+d x]^{2/3}}{20 b^2 (b+a \operatorname{Cos}[c+d x])^{1/3}}\right)$$
$$\operatorname{Sec}[c+d x]^{1/3} \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{1}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$
$$\left(\frac{a+b-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\left(a-a \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2-\right.$$

$$\left(8 b^2 (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right) \Big/ \left(\left(a+b-a \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2+b \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right.$$

$$\left(-9 (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] -\right.$$

$$2 \left((a-b) \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] +\right.$$

$$\left.2 (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right) - \left(9 a^2 (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right) \Big/$$

$$\left(\left(9 (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] +\right.\right.$$

$$2 \left((a-b) \text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] +\right.$$

$$\left.2 (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right) \left(a \left(-1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right) - b \left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right)\right) +$$

$$\left(3 a b (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)\right) \Big/$$

$$\left(\left(9 (a+b) \text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2} (c+d x)\right]^2}{a+b}\right] +\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(10\,b^2\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^{1/3}\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\right.$$

$$\left(-\frac{1}{10\,b^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{4/3}}\right.$$

$$3\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(a-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2-\right.$$

$$\left(8\,b^2\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\left(9\,a^2\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Bigg/\Bigg(\Bigg(9(a+b)\,\text{AppellF1}\left[\frac{1}{2}, \frac{2}{3}, \frac{1}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{4}{3}, \frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{5}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Bigg/\Bigg(\Bigg(15(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{2}{3}, \frac{1}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\Bigg((a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.$$

$$\frac{2}{3}, \frac{4}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)$$

$$\text{AppellF1}\left[\frac{5}{2}, \frac{5}{3}, \frac{1}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)+$$

$$\frac{1}{20\,b^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}}\,9\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(a-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2-\right.$$

$$\left(8\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\left(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\right.$$

$$\left.\left.\left.\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)+$$

$$\left(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\right.$$

$$\left.\left.\left.\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)+$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Bigg)+$$

$$\frac{1}{5\,b^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}}\,3\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{5/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(a - a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2 - \right.$$

$$\left(8\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\left(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(\left(9(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left(5a^2(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(\left(15(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(5ab(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)$$

$$\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)+$$

$$\left(1\Bigg/\left(5\,b^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}\right)\right)$$

$$3$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$

$$\left(\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg/\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg/$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\left(a-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2-\right.$$

$$\left(8\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(5\,a^2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(5\,a\,b\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)+$$

$$\frac{1}{10\,b^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}}\,9\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\right.$$

$$\left(8\,b^2(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\left(8\,b^2(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big/$$

$$\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(8\,b^2\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{9}$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(-9\,(a+b)$$

$$\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-2$$

$$\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)-$$

$$\Bigg(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)-$$

$$\Bigg(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-b\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)+$$

$$\Bigg(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-b$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)-$$

$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\Bigg(3\,a\,b\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\Bigg(9\,a^2\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{2}{9}$$

$$\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(3\,a\,b\left(a+b\right)\left(\frac{1}{9\left(a+b\right)}\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{2}{9}$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/$$

$$\left(\left(9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(5\,a^2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^3\right)\Big/$$

$$\left(\left(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(5\,a\,b\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)+\Bigg(5\,a^2\left(a+b\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg(\frac{1}{5\left(a+b\right)}\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{2}{5}$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-\Bigg(5\,a\,b\,(a+b)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{5}$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(8\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(-2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-9\,(a+b)\left(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\right.\right.$$

$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)-2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((a-b)\left(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$2\,(a+b)\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(-9\,(a+b)\,\text{AppellF1}\left[\right.\right.\right.$$

$$\left.\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + 2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2\Bigg) +$$

$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg(2\Bigg((a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + 2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right] + 9\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{4}{3},$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right] + \frac{2}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg) + 2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\,\Bigg((a-b)\,\Bigg(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right] + \frac{2}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg) +$$

$$2\,(a+b)\,\Bigg(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right] +$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\,\Bigg(2\,\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+9\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\right.$$

$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left((a-b)\left(\frac{1}{5(a+b)}4(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+$$

$$2(a+b)\left(\frac{1}{5(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\Big/$$

$$\left(\left(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(5a^2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+15$$

$$(a+b)\,\left(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\left((a-b)\,\left(\frac{1}{21\,(a+b)}20\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3},\frac{7}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{10}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2\,(a+b)$$

$$\left(\frac{1}{21\,(a+b)}5\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{25}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+2\,(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(5\,a\,b\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(2\,\Bigg((a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15$$

$$(a+b)\,\Bigg(\frac{1}{5\,(a+b)}(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\Bigg((a-b)\,\Bigg(\frac{1}{21\,(a+b)}20\,(a-b)\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{2}{3},\frac{7}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{10}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+2\,(a+b)$$

$$\left(\frac{1}{21\,(a+b)}5\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{25}{21}\text{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)+$$

$$\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sec}[c+d\,x]\left(-\frac{9\,a\,\text{Sin}[c+d\,x]}{10\,b^2}+\frac{3\,\text{Tan}[c+d\,x]}{5\,b}\right)}{d\,(a+b\,\text{Sec}[c+d\,x])^{1/3}}$$

Problem 701: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^2}{(a+b\,\text{Sec}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 6, 219 leaves, 7 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\text{Sec}[c+d\,x]),\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}\right](a+b\,\text{Sec}[c+d\,x])^{2/3}\,\text{Tan}[c+d\,x]\right)\Bigg/\left(b\,d\,\sqrt{1+\text{Sec}[c+d\,x]}\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{2/3}\right)-$$

$$\left(\sqrt{2}\,a\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}\,(1-\text{Sec}[c+d\,x]),\frac{b\,(1-\text{Sec}[c+d\,x])}{a+b}\right]\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{1/3}\text{Tan}[c+d\,x]\right)\Bigg/\left(b\,d\,\sqrt{1+\text{Sec}[c+d\,x]}\,(a+b\,\text{Sec}[c+d\,x])^{1/3}\right)$$

Result (type 6, 10 665 leaves) :

$$\frac{3\,\left(b+a\,\text{Cos}[c+d\,x]\right)\,\text{Tan}[c+d\,x]}{2\,b\,d\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}}-$$

$$\left(\left(b+3\,a\,\text{Cos}[c+d\,x]\right)\,\left(3\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{2/3}\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{2/3}-\right.\right.$$

$$\left(6\,\left(a^2-b^2\right)\,\left(a+b\,\text{Sec}[c+d\,x]\right)\,\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\,\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\left(\left(a+b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\,\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\right)+$$

$$\left(16\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\right)\Big/$$

$$\left(5\,b\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{4/3}\left(-1+\mathrm{Sec}[c+d\,x]^2\right)\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(2\,b\,d\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{1/3}\Bigg(\frac{3\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{2/3}\mathrm{Sin}[c+d\,x]}{\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{1/3}}-$$

$$\frac{2\,a\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{2/3}\,\mathrm{Sin}[c+d\,x]}{\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}}+$$

$$2\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{2/3}\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{5/3}\,\mathrm{Sin}[c+d\,x]+$$

$$\left(1\Big/\left(5\,b\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\left(-1+\mathrm{Sec}[c+d\,x]^2\right)^2\right)\right)$$

$$12\left(a^2-b^2\right)\mathrm{Sec}[c+d\,x]^{5/3}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\left(1-\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(25\,a\,\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\Bigg)\Big/$$

$$\Bigg(\left(a+b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\Bigg(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\Bigg(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{5}{3},\frac{3}{2},\frac{1}{2},$$

$$\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\Bigg(10\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\Big/\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\Bigg)\Bigg)\Bigg)+$$

$$\left(16\,\mathrm{AppellF1}\Big[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right)\Big/$$

$$\Bigg(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\Bigg(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\frac{3}{2},\frac{1}{2},$$

$$\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\text{Sin}[c+d\,x]-$$

$$\left(1\middle/\left(5\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}\sqrt{1-\text{Cos}[c+d\,x]^2}\left(-1+\text{Sec}[c+d\,x]^2\right)\right)\right)$$

$$6\sqrt{\frac{1}{b^2}}\left(a^2-b^2\right)\text{Sec}[c+d\,x]^{2/3}$$

$$\left(a+b\,\text{Sec}[c+d\,x]\right)\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\right/\right.$$

$$\left(\left(a+b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Bigg]\Bigg)-$$

$$\Bigg(10\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{2}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{5}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\Big/\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)\Bigg)\Bigg)\Bigg)+$$

$$\left(16\,\mathrm{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{8}{3},\ -\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\ \frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\right)\Big/$$

$$\Bigg(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\,\Bigg(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{1}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},\ \frac{1}{2},$$

$$\frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\Bigg(16\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{5}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{8}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ \left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)\bigg/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\,\text{Sin}[c+d\,x]\,+$$

$$\left(1\Big/\left(5\,\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}\,\sqrt{1-\text{Cos}[c+d\,x]^2}\,\left(-1+\text{Sec}[c+d\,x]^2\right)\right)\right)$$

$$6\,\sqrt{\frac{1}{b^2}}\,\left(a^2-b^2\right)$$

$$\text{Sec}[c+d\,x]^{2/3}\,\left(a+b\,\text{Sec}[c+d\,x]\right)$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Bigg/\right.\right.$$

$$\left(\left(a+b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\,\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\text{AppellF1}\left[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)\,-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\Bigg)\Bigg)\Bigg)+$$

$$\left(16\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\text{Sin}[c+d\,x]-$$

$$\left(1\Big/\left(5\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}\sqrt{1-\text{Cos}[c+d\,x]^2}\left(-1+\text{Sec}[c+d\,x]^2\right)\right)\right)$$

$$6\left(a^2-b^2\right)\operatorname{Sec}[c+d\,x]^{2/3}\left(1-\sqrt{\frac{1}{b^2}}\;b\operatorname{Sec}[c+d\,x]\right)\left(1+\sqrt{\frac{1}{b^2}}\;b\operatorname{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\operatorname{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\operatorname{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$

$$\left(\left(a+b\operatorname{Sec}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\operatorname{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\operatorname{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\operatorname{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\operatorname{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\operatorname{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\right)\right)\right)+$$

$$\left(16\,\mathrm{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{8}{3},\,-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\left[\frac{8}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\left[\frac{8}{3},\,\frac{3}{2},\,\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\right)\right)\mathrm{Sin}[c+d\,x]+$$

$$\left(6\,\left(a^2-b^2\right)\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\,\left(1-\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)\,\left(1+\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)\right.$$

$$\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\right/\right.$$

$$\left((a+b\,\text{Sec}[c+d\,x])\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\right/(a+b\,\text{Sec}[c+d\,x])\right)\right)\right)+$$

$$\left(16\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\,(a^2-b^2)\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\text{Sin}[c+d\,x]\right)\Big/$$

$$\left(5\,b\,(b+a\,\text{Cos}[c+d\,x])^{1/3}\,\left(1-\text{Cos}[c+d\,x]^2\right)^{3/2}\,\text{Sec}[c+d\,x]^{7/3}\right.$$
$$\left.\left(-1+\text{Sec}[c+d\,x]^2\right)\right)-$$

$$\left(2\,a\,(a^2-b^2)\,(a+b\,\text{Sec}[c+d\,x])\,\left(1-\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\left(\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/\right.\right.$$

$$\left((a+b\,\mathrm{Sec}[c+d\,x])\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\,(a^2-b^2)\,\mathrm{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\,(a+b\,\mathrm{Sec}[c+d\,x])\right)\right)\right)+$$

$$\left(16\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\mathrm{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]+\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\,\mathrm{AppellF1}\Big[\frac{8}{3},\,\frac{3}{2},\,\frac{1}{2},$$

$$\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)-$$

$$\Bigg(16\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\Big[\frac{5}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\Big]\Bigg)\Bigg/\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\Bigg)\Bigg)\,\mathrm{Sin}[c+d\,x]\Bigg)\Bigg/$$

$$\left(5\,b\,\left(b+a\,\mathrm{Cos}[c+d\,x]\right)^{4/3}\,\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\,\mathrm{Sec}[c+d\,x]^{4/3}\,\left(-1+\mathrm{Sec}[c+d\,x]^2\right)\right)+$$

$$\Bigg(8\,\left(a^2-b^2\right)\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)\,\left(1-\sqrt{\frac{1}{b^2}}\,\,b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,\,b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(25\,a\,\mathrm{AppellF1}\Big[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\Big]\Bigg)\Bigg/$$

$$\Bigg(\left(a+b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\bigg/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)\right)+$$

$$\left(16\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right)\bigg/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\,(a^2-b^2)\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\ (a+b\,\mathrm{Sec}[c+d\,x])\right)\right)\mathrm{Sin}[c+d\,x]\right)\middle/$$

$$\left(5\,b\,(b+a\,\mathrm{Cos}[c+d\,x])^{1/3}\sqrt{1-\mathrm{Cos}[c+d\,x]^2}\,\mathrm{Sec}[c+d\,x]^{1/3}\,(-1+\mathrm{Sec}[c+d\,x]^2)\right)-$$

$$\left(6\,(a^2-b^2)\,(a+b\,\mathrm{Sec}[c+d\,x])\left(1-\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)\right.$$

$$\left(1+\sqrt{\frac{1}{b^2}}\,b\,\mathrm{Sec}[c+d\,x]\right)$$

$$\left(\left(25\,a\,b\,\mathrm{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\mathrm{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.\right.$$

$$\left.\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\middle/\left((a+b\,\mathrm{Sec}[c+d\,x])^2\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-\left(10\,(a^2-b^2)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\,(a+b\,\text{Sec}[c+d\,x])\right)\right)-$$

$$\left(25\,a\left(\frac{1}{5\left(a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)}b\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]-\right.\right.$$

$$\left(b\,\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.$$

$$\left.\left.\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\middle/\left(5\left(-a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)\right)\right)\middle/\left(a+b\,\text{Sec}[c+d\,x]\right)$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)\right)+$$

$$\left(16\left(\left(5\,b\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.\right.\right.$$

$$\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\middle/\left(16\left(a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)-$$

$$\left(5\,b\,\text{AppellF1}\left[\frac{8}{3},\,\frac{3}{2},\,\frac{1}{2},\,\frac{11}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.$$

$$\left.\left.\left.\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\middle/\left(16\left(-a+\frac{1}{\sqrt{\frac{1}{b^2}}}\right)\right)\right)\right)\right)\Big/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\,\frac{3}{2},\,\frac{1}{2},\right.$$

$$\left.\left.\frac{11}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{8}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)+$$

$$\left(25\,a\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\,\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.$$

$$\left(\left(10\,b\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{2}{3},\,\frac{1}{2},\,\frac{1}{2},\,\frac{5}{3},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(\left(a+b\,\text{Sec}[c+d\,x]\right)^2-\left(10\,\left(a^2-b^2\right)\,\left(\left(\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{2},\,\frac{3}{2},\,\frac{8}{3},\right.\right.\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]$$

$$\left.\text{Tan}[c+d\,x]\right)\Bigg/\left(5\,\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\right)+\left(\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{5}{3},\,\frac{3}{2},\,\frac{1}{2},\,\frac{8}{3},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\,\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]$$

$$\left.\left.\left.\left.\text{Tan}[c+d\,x]\right)\Bigg/\left(5\,\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\right)\right)\right)\Bigg/\left(a+b\,\text{Sec}[c+d\,x]\right)-$$

$$\frac{1}{\sqrt{\frac{1}{b^2}}}\,3\,\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\left(\left(15\,\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{8}{3},\,\frac{1}{2},\,\frac{5}{2},\,\frac{11}{3},\right.\right.\right.\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Bigg]\ \mathrm{Sec}[c+d\,x]$$

$$\mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\Bigg(5\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},$$

$$\frac{3}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\mathrm{Sec}[c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/\left(16\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)+\left(1+a\sqrt{\frac{1}{b^2}}\right)$$

$$\Bigg(\Bigg(5\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{3}{2},\ \frac{3}{2},\ \frac{11}{3},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[c+d\,x]\ \mathrm{Tan}[c+d\,x]\Bigg)\Bigg/$$

$$\left(16\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\Bigg(15\sqrt{\frac{1}{b^2}}\ b\,\mathrm{AppellF1}\Big[\frac{8}{3},\ \frac{5}{2},\ \frac{1}{2},\ \frac{11}{3},$$

$$\frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\ \frac{\sqrt{\frac{1}{b^2}}\ (a+b\,\mathrm{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\Big]\ \mathrm{Sec}[c+d\,x]$$

$$\left.\left.\left.\left.\left.\text{Tan}[c+d\,x]\right)\middle/\left(16\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\right)\right)\right)\right)\middle/\left(\left(a+b\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\right.$$

$$\left.\left.\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-$$

$$\left(10\left(a^2-b^2\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\left.\left.\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\middle/\left(a+b\,\text{Sec}[c+d\,x]\right)\right)^2\right)-$$

$$\left(16\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Sec}[c+d\,x]}{-a+\frac{1}{\sqrt{\frac{1}{b^2}}}},\frac{a+b\,\text{Sec}[c+d\,x]}{a+\frac{1}{\sqrt{\frac{1}{b^2}}}}\right]\right.$$

$$\left(\left(16\,b\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/$$

$$\left(a+b\,\text{Sec}[c+d\,x]\right)^2-\left(16\,\left(a^2-b^2\right)\,\left(\left(5\,\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\right.\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]$$

$$\left.\text{Tan}[c+d\,x]\right)\Big/\left(16\,\left(1+a\,\sqrt{\frac{1}{b^2}}\right)\right)+\left(5\,\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\right.\right.$$

$$\left.\frac{1}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[$$

$$\left.\left.\left.c+d\,x]\,\text{Tan}[c+d\,x]\right)\Big/\left(16\,\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\right)\right)\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)-$$

$$\frac{1}{\sqrt{\frac{1}{b^2}}}3\,\left(\left(-1+a\,\sqrt{\frac{1}{b^2}}\right)\,\left(\left(12\,\sqrt{\frac{1}{b^2}}\,b\,\text{AppellF1}\left[\frac{11}{3},\frac{1}{2},\frac{5}{2},\frac{14}{3},\right.\right.\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{-1+a\,\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,\left(a+b\,\text{Sec}[c+d\,x]\right)}{1+a\,\sqrt{\frac{1}{b^2}}}\right]\,\text{Sec}[c+d\,x]$$

$$\left.\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(11\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\left(4\sqrt{\frac{1}{b^2}}\;b\,\mathrm{AppellF1}\Big[\frac{11}{3},\right.$$

$$\frac{3}{2},\frac{3}{2},\frac{14}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\left.\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(11\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)+\left(1+a\sqrt{\frac{1}{b^2}}\right)$$

$$\left(\left(4\sqrt{\frac{1}{b^2}}\;b\,\mathrm{AppellF1}\Big[\frac{11}{3},\frac{3}{2},\frac{3}{2},\frac{14}{3},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\right.\right.$$

$$\left.\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left(11\left(1+a\sqrt{\frac{1}{b^2}}\right)\right)+\left(12\sqrt{\frac{1}{b^2}}\;b\,\mathrm{AppellF1}\Big[\frac{11}{3},\frac{5}{2},\frac{1}{2},\frac{14}{3},\right.$$

$$\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\left(a+b\,\mathrm{Sec}[c+d\,x]\right)}{1+a\sqrt{\frac{1}{b^2}}}\Big]$$

$$\left.\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\Bigg/\left(11\left(-1+a\sqrt{\frac{1}{b^2}}\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(-\frac{1}{\sqrt{\frac{1}{b^2}}}3\left(\left(-1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{2},\frac{3}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]+\left(1+a\sqrt{\frac{1}{b^2}}\right)\text{AppellF1}\left[\frac{8}{3},\frac{3}{2},\frac{1}{2},\frac{11}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)-\left(16\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{-1+a\sqrt{\frac{1}{b^2}}},\frac{\sqrt{\frac{1}{b^2}}\,(a+b\,\text{Sec}[c+d\,x])}{1+a\sqrt{\frac{1}{b^2}}}\right]\right)\Big/\left(a+b\,\text{Sec}[c+d\,x]\right)^2\right)\Big/$$

$$\left(5\,b\,(b+a\,\text{Cos}[c+d\,x])^{1/3}\sqrt{1-\text{Cos}[c+d\,x]^2}\,\text{Sec}[c+d\,x]^{4/3}\left(-1+\text{Sec}[c+d\,x]^2\right)\right)\right)$$

Problem 702: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]}{(a+b\,\text{Sec}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 6, 105 leaves, 3 steps):

$$\left(\sqrt{2}\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{3},\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[c+d\,x]\right),\frac{b\left(1-\text{Sec}[c+d\,x]\right)}{a+b}\right]\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{1/3}\text{Tan}[c+d\,x]\right)\Big/\left(d\sqrt{1+\text{Sec}[c+d\,x]}\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}\right)$$

Result (type 6, 310 leaves):

$$\left(15\,(a-b)^2\,(a+b)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right]\text{Cos}[c+d\,x]\,\text{Cot}[c+d\,x]^3\,(1+\text{Sec}[c+d\,x])\,(b-b\,\text{Sec}[c+d\,x])\,(a+b\,\text{Sec}[c+d\,x])^{2/3}\right)\Big/\left(b^2\,(-a+b)\,d\left(3\,(a-b)\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{3}{2},\frac{8}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right](b+a\,\text{Cos}[c+d\,x])+(a+b)\left(10\,(a-b)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right]\text{Cos}[c+d\,x]+3\,\text{AppellF1}\left[\frac{5}{3},\frac{3}{2},\frac{1}{2},\frac{8}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right](b+a\,\text{Cos}[c+d\,x])\right)\right)\right)$$

Problem 704: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{2/3}}\,dx$$

Optimal (type 6, 105 leaves, 3 steps):

$$\left(\sqrt{2}\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{2}{3},\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[c+d\,x]\right),\frac{b\left(1-\text{Sec}[c+d\,x]\right)}{a+b}\right]\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{2/3}\text{Tan}[c+d\,x]\right)\Big/\left(d\sqrt{1+\text{Sec}[c+d\,x]}\left(a+b\,\text{Sec}[c+d\,x]\right)^{2/3}\right)$$

Result (type 6, 310 leaves):

$$\left(24\,(a-b)^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right]\text{Cos}[c+d\,x]\,\text{Cot}[c+d\,x]^3\,(1+\text{Sec}[c+d\,x])\,(b-b\,\text{Sec}[c+d\,x])\,(a+b\,\text{Sec}[c+d\,x])^{1/3}\right)\Big/\left(b^2\,(-a+b)\,d\left(3\,(a-b)\,\text{AppellF1}\left[\frac{4}{3},\frac{1}{2},\frac{3}{2},\frac{7}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right](b+a\,\text{Cos}[c+d\,x])+(a+b)\left(8\,(a-b)\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right]\text{Cos}[c+d\,x]+3\,\text{AppellF1}\left[\frac{4}{3},\frac{3}{2},\frac{1}{2},\frac{7}{3},\frac{a+b\,\text{Sec}[c+d\,x]}{a-b},\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right](b+a\,\text{Cos}[c+d\,x])\right)\right)\right)$$

Problem 706: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{4/3}}\,dx$$

Optimal (type 6, 110 leaves, 3 steps):

$$\left(\sqrt{2}\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{4}{3},\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[c+d\,x]\right),\frac{b\left(1-\text{Sec}[c+d\,x]\right)}{a+b}\right]\left(\frac{a+b\,\text{Sec}[c+d\,x]}{a+b}\right)^{1/3}\text{Tan}[c+d\,x]\right)\bigg/\left((a+b)\,d\,\sqrt{1+\text{Sec}[c+d\,x]}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{1/3}\right)$$

Result (type 6, 12 814 leaves):

$$\frac{\left(b+a\,\text{Cos}[c+d\,x]\right)^2\text{Sec}[c+d\,x]^2\left(-\frac{3\,\text{Sin}[c+d\,x]}{-a^2+b^2}+\frac{3\,b\,\text{Sin}[c+d\,x]}{\left(-a^2+b^2\right)\left(b+a\,\text{Cos}[c+d\,x]\right)}\right)}{d\left(a+b\,\text{Sec}[c+d\,x]\right)^{4/3}}+$$

$$\left(\left(b+a\,\text{Cos}[c+d\,x]\right)^{4/3}\left(\frac{b}{\left(-a^2+b^2\right)\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Sec}[c+d\,x]^{1/3}}+\right.\right.$$

$$\left.\frac{a\,\text{Sec}[c+d\,x]^{2/3}}{2\left(-a^2+b^2\right)\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}}+\frac{3\,a\,\text{Cos}\left[2\left(c+d\,x\right)\right]\text{Sec}[c+d\,x]^{2/3}}{2\left(-a^2+b^2\right)\left(b+a\,\text{Cos}[c+d\,x]\right)^{1/3}}\right)\text{Sec}[c+d\,x]^{4/3}$$

$$\left(-\frac{3\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}}{\left(a^2-b^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}}+\left(3\,(a-b)\,(a+b)\right.\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\left.\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+2\,(a+b)$$

$$\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2+15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg((a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\right)^{1/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)$$

$$\Bigg(9(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]+$$

$$2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)$$

$$\Bigg(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]+$$

$$2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(d\,(a+b\,\text{Sec}[c+dx])^{4/3}\left(-\frac{3\,\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\right)^{2/3}}{2(a^2-b^2)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\right)^{1/3}}+\right.$$

$$\left(\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}\right.$$

$$\left(\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.\right.$$

$$\left.\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\right)\Big/$$

$$\left(\left(a^2-b^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{4/3}\right)-\left(2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.$$

$$\left(\left(-a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big/\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-\left(\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.$$

$$\left.\left.\left.\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)\right)\Big/$$

$$\left(\left(a^2-b^2\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{1/3}\right)-$$

$$\left(3\left(a-b\right)\left(a+b\right)\left(a\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\right.\right.$$

$$\left.b\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left(\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(-2\left(\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\frac{4}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+2\,(a+b)$$

$$\mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{5}{3},\ \frac{1}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{2}{3},\ \frac{1}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(a^2-b^2\right)\left(\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\Bigg(9\,(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\ \frac{2}{3},\ \frac{1}{3},\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{2}{3},\ \frac{4}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{5}{3},\ \frac{1}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{2}{3},\ \frac{1}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{2}{3},\ \frac{4}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{5}{3},\ \frac{1}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)^2\Bigg)+$$

$$\Bigg(2\,(a-b)\,(a+b)\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\,\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\left.\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Bigg/$$

$$\left((a^2-b^2)\,\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\,\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\,\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\left(3\,(a-b)\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\left.\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Bigg/$$

$$\left((a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left((a-b)\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\frac{4}{3},\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ \frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+2\left(a+b\right)$$

$$\left.\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+15\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(\left(a^2-b^2\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\left(9\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\right.\right.\right.$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+2\left(\left(a-b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\right.\right.$$

$$\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+2\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left(15\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$2\left(\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.2\left(a+b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(2\left(a-b\right)\left(a+b\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^{2/3}\right.$$

$$\left(\left(-a\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+b\,\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big/\right.$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-\left(\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right.$$

$$\left.\left.\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2\right)$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\right.\right.\right.$$

$$\left.\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left((a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\left(3\,(a-b)\,(a+b)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+9\,(a+b)$$

$$\left(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left((a-b)\left(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(c+d x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]\Bigg)+2(a+b)\Bigg(\frac{1}{5(a+b)}(a-b)\,\text{AppellF1}\Big[\frac{5}{2},$$

$$\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d x)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]+\text{AppellF1}\Big[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]\Bigg)\Bigg)\Bigg)$$

$$\Bigg(10\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]$$

$$\Bigg((a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]+$$

$$2(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^5+3\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]\Bigg(-2\Bigg((a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},$$

$$\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]+2(a+b)$$

$$\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2+15(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg((a^2-b^2)\left(\frac{1}{1-\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}\right)^{1/3}\left(-1+\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2\right)$$

$$\Bigg(9(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d x)\big]^2}{a+b}\Big]+$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2$$

$$\left(15(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)-$$

$$\left(3(a-b)(a+b)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$

$$\left(2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.2(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+15(a+b)\left(\frac{1}{5(a+b)}\right.$$

$$(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+$$

$$2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\Bigg((a-b)\,\Bigg(\frac{1}{21\,(a+b)}20\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\,\frac{2}{3},\,\frac{7}{3},\,\frac{9}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{10}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\,\frac{5}{3},\,\frac{4}{3},\,\frac{9}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)+$$

$$2\,(a+b)\,\Bigg(\frac{1}{21\,(a+b)}5\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\,\frac{5}{3},\,\frac{4}{3},\,\frac{9}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{25}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\,\frac{8}{3},\,\frac{1}{3},\,\frac{9}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Bigg)$$

$$\Bigg(10\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{4}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\Bigg(-2\,\Bigg((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{2}{3},\right.$$

$$\left.\frac{4}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\,(a+b)$$

$$\mathrm{AppellF1}\left[\frac{5}{2},\,\frac{5}{3},\,\frac{1}{3},\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+15\,(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,\frac{1}{3},\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left((a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+\left(3\,(a-b)\right.$$

$$(a+b)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}$$

$$\left(25\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4+$$

$$10\,\Bigg((a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]+$$

$$2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^5\,\Bigg(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+$$

$$\frac{2}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Bigg)+10\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},\frac{1}{3},$$

$$\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^5$$

$$\Bigg((a-b)\,\Bigg(\frac{1}{5\,(a+b)}4\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{2}{3},\frac{7}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+$$

$$\frac{2}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Bigg)+2\,(a+b)\,\Bigg(\frac{1}{5\,(a+b)}(a-b)\,\text{AppellF1}\Big[\frac{5}{2},$$

$$\frac{5}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\text{AppellF1}\Big[\frac{5}{2},\frac{8}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Bigg)\Bigg)+$$

$$\frac{3}{2}\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$

$$3\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{1}{9\,(a+b)}(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left(-2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\right.$$

$$\left.\left.\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$

$$3\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]-$$

$$2\left((a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$15\,(a+b)\left(\frac{1}{5\,(a+b)}(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{2}{5}\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-$$

$$2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((a-b)\left(\frac{1}{21\,(a+b)}20\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{2}{3},\frac{7}{3},\right.\right.\right.$$

$$\left.\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{10}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$2\,(a+b)\left(\frac{1}{21\,(a+b)}5\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{5}{3},\frac{4}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{25}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{8}{3},\frac{1}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left((a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},\frac{1}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{4}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},\frac{1}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},\frac{4}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.2\,(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},\frac{1}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)$$

Problem 708: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^4}{(a+b\,\text{Sec}[c+d\,x])^{5/3}}\,dx$$

Optimal (type 6, 378 leaves, 9 steps):

$$-\frac{3 a^2 \operatorname{Sec}[c+d x] \operatorname{Tan}[c+d x]}{2 b \left(a^2-b^2\right) d \left(a+b \operatorname{Sec}[c+d x]\right)^{2/3}}+\frac{3 \left(3 a^2-b^2\right) \left(a+b \operatorname{Sec}[c+d x]\right)^{1/3} \operatorname{Tan}[c+d x]}{4 b^2 \left(a^2-b^2\right) d}-$$
$$\left(a \left(9 a^2-7 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{1}{3},\frac{3}{2},\frac{1}{2} (1-\operatorname{Sec}[c+d x]),\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(a+b \operatorname{Sec}[c+d x]\right)^{1/3} \operatorname{Tan}[c+d x]\right)\Big/$$
$$\left(2 \sqrt{2} b^3 \left(a^2-b^2\right) d \sqrt{1+\operatorname{Sec}[c+d x]} \left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3}\right)+$$
$$\left(\left(9 a^4-10 a^2 b^2-b^4\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{2}{3},\frac{3}{2},\frac{1}{2} (1-\operatorname{Sec}[c+d x]),\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3} \operatorname{Tan}[c+d x]\right)\Big/$$
$$\left(2 \sqrt{2} b^3 \left(a^2-b^2\right) d \sqrt{1+\operatorname{Sec}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{2/3}\right)$$

Result (type 6, 33 538 leaves) : Display of huge result suppressed!

Problem 709: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Sec}[c+d x]^3}{\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3}} \, dx$$

Optimal (type 6, 307 leaves, 8 steps) :

$$-\frac{3 a^2 \operatorname{Tan}[c+d x]}{2 b \left(a^2-b^2\right) d \left(a+b \operatorname{Sec}[c+d x]\right)^{2/3}}+$$
$$\left(\left(3 a^2-2 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{1}{3},\frac{3}{2},\frac{1}{2} (1-\operatorname{Sec}[c+d x]),\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(a+b \operatorname{Sec}[c+d x]\right)^{1/3} \operatorname{Tan}[c+d x]\right)\Big/$$
$$\left(\sqrt{2} b^2 \left(a^2-b^2\right) d \sqrt{1+\operatorname{Sec}[c+d x]} \left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{1/3}\right)-$$
$$\left(a \left(3 a^2-4 b^2\right) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{2}{3},\frac{3}{2},\frac{1}{2} (1-\operatorname{Sec}[c+d x]),\frac{b (1-\operatorname{Sec}[c+d x])}{a+b}\right]\right.$$
$$\left.\left(\frac{a+b \operatorname{Sec}[c+d x]}{a+b}\right)^{2/3} \operatorname{Tan}[c+d x]\right)\Big/$$
$$\left(\sqrt{2} b^2 \left(a^2-b^2\right) d \sqrt{1+\operatorname{Sec}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{2/3}\right)$$

Result (type 6, 30 028 leaves) : Display of huge result suppressed!

Problem 710: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Sec}[c+d x]^2}{\left(a+b \operatorname{Sec}[c+d x]\right)^{5/3}} \, dx$$

Optimal (type 6, 289 leaves, 8 steps):

$$\frac{3\,a\,\mathrm{Tan}[c+d\,x]}{2\,(a^2-b^2)\,d\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}}-\left(a\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{1}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right](a+b\,\mathrm{Sec}[c+d\,x])^{1/3}\,\mathrm{Tan}[c+d\,x]\right)\bigg/\left(\sqrt{2}\,b\,(a^2-b^2)\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{1/3}\right)+\left((a^2-2\,b^2)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sec}[c+d\,x]),\frac{b\,(1-\mathrm{Sec}[c+d\,x])}{a+b}\right]\left(\frac{a+b\,\mathrm{Sec}[c+d\,x]}{a+b}\right)^{2/3}\mathrm{Tan}[c+d\,x]\right)\bigg/\left(\sqrt{2}\,b\,(a^2-b^2)\,d\,\sqrt{1+\mathrm{Sec}[c+d\,x]}\,(a+b\,\mathrm{Sec}[c+d\,x])^{2/3}\right)$$

Result (type 6, 18 901 leaves):

$$\frac{(b+a\,\mathrm{Cos}[c+d\,x])^2\,\mathrm{Sec}[c+d\,x]^2\left(\frac{3\,a\,\mathrm{Sin}[c+d\,x]}{2\,b\,(-a^2+b^2)}-\frac{3\,a\,\mathrm{Sin}[c+d\,x]}{2\,(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])}\right)}{d\,(a+b\,\mathrm{Sec}[c+d\,x])^{5/3}}+$$

$$\left(3\,(b+a\,\mathrm{Cos}[c+d\,x])^{5/3}\left(-\frac{a}{(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])^{2/3}\,\mathrm{Sec}[c+d\,x]^{2/3}}-\frac{3\,a^2\,\mathrm{Sec}[c+d\,x]^{1/3}}{4\,b\,(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])^{2/3}}+\frac{b\,\mathrm{Sec}[c+d\,x]^{1/3}}{(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])^{2/3}}-\frac{3\,a^2\,\mathrm{Cos}[2\,(c+d\,x)]\,\mathrm{Sec}[c+d\,x]^{1/3}}{4\,b\,(-a^2+b^2)\,(b+a\,\mathrm{Cos}[c+d\,x])^{2/3}}\right)\mathrm{Sec}[c+d\,x]^{5/3}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right.$$

$$\left(\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}\left(\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-\left(12\,b^2\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\bigg/\right.$$

$$\left(\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\left(-9\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]-2\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.\right.\right.$$

$$\frac{2}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\Big]\Bigg)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(9\,a^2\ (a+b)\ \mathrm{AppellF1}\left[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\ (a+b)\ \mathrm{AppellF1}\left[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]+$$

$$2\ \Bigg(2\ (a-b)\ \mathrm{AppellF1}\left[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\ \mathrm{AppellF1}\left[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\Bigg)\ \left(a\ \left(-1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)-b\ \left(1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(3\,a\,b\ (a+b)\ \mathrm{AppellF1}\left[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\ (a+b)\ \mathrm{AppellF1}\left[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]+$$

$$2\ \Bigg(2\ (a-b)\ \mathrm{AppellF1}\left[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\ \mathrm{AppellF1}\left[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\Bigg)\ \left(a\ \left(-1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)-b\ \left(1+\mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(5\,a^2\ (a+b)\ \mathrm{AppellF1}\left[\frac{3}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2,\ \frac{(a-b)\ \mathrm{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg) \Bigg/$$

$$\Bigg(\Bigg(15 (a+b) \,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$2 \Bigg(2 (a-b) \,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$(a+b) \,\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg) \left(a \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) - b \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg) +$$

$$\Bigg(5 a b (a+b) \,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg) \Bigg/$$

$$\Bigg(\Bigg(15 (a+b) \,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$2 \Bigg(2 (a-b) \,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$(a+b) \,\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg) \left(a \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right) - b \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg) \Bigg/$$

$$\Bigg(2 \left(-a^2 b+b^3\right) d \left(a+b \,\text{Sec}[c+d x]\right)^{5/3} \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}$$

$$\Bigg(-\frac{1}{\left(-a^2 b+b^3\right) \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{5/3}}$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-\right.$$

$$\left(12\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+$$

$$\left(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+2\left(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},$$

$$\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(15\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\right.\right.$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+2\left(2\,(a-b)\,\text{AppellF1}\Big[\right.$$

$$\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)$$

$$\left.\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left.\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)+$$

$$\frac{1}{4\left(-a^2 b+b^3\right)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{2/3}}3\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(\frac{1}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(12 b^2(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\right.\right.\right.$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(\left(a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(-9(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\right.\right.\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]-2\left(2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\right.\right.$$

$$\left.\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\left.\left.\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)+$$

$$\left(9 a^2(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(\left(9(a+b)\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+2\left(2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(3\,a\,b\,\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(\left(\left(9\,\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.\right.\right.$$

$$\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+2\left(2\,\left(a-b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\left.\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)-$$

$$\left(5\,a^2\,\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)+$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)+$$

$$\frac{1}{2\left(-a^2\,b+b^3\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}}\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{4/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\right.$$

$$\left(12\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)+$$
$$\left(9\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$
$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$
$$\left.\left.\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$
$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$
$$\left(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$
$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$
$$\left.\left.\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$
$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(5 a^2 (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right) \Big/$$

$$\left(\left(15 (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2 \left(2 (a-b) \text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b) \text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left(a \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left(5 a b (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right) \Big/$$

$$\left(\left(15 (a+b) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$2 \left(2 (a-b) \text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b) \text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left.\left.\left(a \left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b \left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)+$$

$$\left(\text{Tan}\left[\frac{1}{2}(c+d x)\right] \left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3} \left(\left(-a \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]+\right.\right.\right.$$

$$b\,\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big/\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2+\right.\right.$$

$$\left.\left.b\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Big)$$

$$\Bigg(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\Bigg(12\,b^2(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\left(a+b-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\Bigg(-9(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]-$$

$$2\Bigg(2(a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]+(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(9\,a^2(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Big/\Bigg(\Bigg(9(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]+2\Bigg(2(a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]+(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{4}{3},$$

$$\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)+$$

$$\left(3\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left.\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\right)\Big/\left(2\left(-a^2\,b+b^3\right)\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\right)+$$

$$\frac{1}{2\left(-a^2\,b+b^3\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}}$$

$$3$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\right.$$

$$\left(12\,b^2\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(-a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\left(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right.$$

$$\left(-9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]-\right.$$

$$2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Bigg)-$$

$$\left(12\,b^2\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big/$$

$$\Bigg(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg(-9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]-2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(12\,b^2\left(a+b\right)\Bigg(\frac{1}{9\left(a+b\right)}2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\left(a+b-a\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg(-9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]-2\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},$$

$$\frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big] + (a+b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{4}{3},$$

$$\frac{2}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\Bigg)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\Bigg)\Bigg) -$$

$$\Bigg(9\ a^2\ (a+b)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]$$

$$\left(a\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right] - b\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\ (a+b)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big] +$$

$$2\ \Bigg(2\ (a-b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big] + (a+b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]\Bigg)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\Bigg)$$

$$\left(a\ \left(-1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right) - b\ \left(1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)\right)^2\Bigg) -$$

$$\Bigg(3\ a\ b\ (a+b)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big]$$

$$\left(a\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right] - b\ \text{Sec}\left[\frac{1}{2}\ (c+d\ x)\right]^2\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\ (a+b)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{3},\ \frac{2}{3},\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,\ \frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big] +$$

$$2\ \Bigg(2\ (a-b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{3},\ \frac{5}{3},\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2,$$

$$\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\ (c+d\ x)\right]^2}{a+b}\Big] + (a+b)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{4}{3},\ \frac{2}{3},\ \frac{5}{2},$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)^2\right)+$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-b\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)^2\right)-$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]-b\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$
$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right) - b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg) +$$
$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Big/$$
$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$
$$2\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$
$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right) - b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg) +$$
$$\Bigg(3\,a\,b\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Big/$$
$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] +$$
$$2\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(9\,a^2\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{9}$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(3\,a\,b\,(a+b)\,\Bigg(\frac{1}{9\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{9}$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(5\,a^2\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left.\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)+$$

$$\left(5\,a\,b\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)\Bigg)-$$

$$\left(5\,a^2\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg/$$

$$\Bigg(\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)\Bigg)+$$

$$\left(5\,a\,b\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg/$$

$$\Bigg(\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-\Bigg(5\,a^2\,(a+b)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{5}$$

$$\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(\Bigg(15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big] + (a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+\Bigg(5\,a\,b\,(a+b)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{5}$$

$$\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(12\,b^2\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\Bigg(-2\Bigg(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\Bigg)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-9\left(a+b\right)\Bigg(\frac{1}{9\left(a+b\right)}2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\right.$$

$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{1}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg)-2$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg(2\left(a-b\right)\Bigg(\frac{1}{a+b}\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)+$$

$$(a+b)\,\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{4}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Big(a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big)\,\Bigg(-9\,(a+b)\,\text{AppellF1}\Big[$$

$$\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]-$$

$$2\,\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Bigg)^2\Bigg)-$$

$$\Bigg(9\,a^2\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]$$

$$\Big(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big)\,\Bigg(2\,\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+9\,(a+b)\,\left(\frac{1}{9\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\right.\right.$$

$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\left(2\,(a-b)\,\left(\frac{1}{a+b}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{8}{3},\,\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$(a+b)\,\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{4}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{7}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2$$

$$\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)\Bigg)-$$

$$\Bigg(3 a b (a+b) \operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg(2\Bigg(2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+9(a+b)\Bigg(\frac{1}{9(a+b)}2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\right.$$

$$\left.\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{9}\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+2$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg(2(a-b)\Bigg(\frac{1}{a+b}(a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{5}\operatorname{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$

$$(a+b)\Bigg(\frac{1}{5(a+b)}2(a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{4}{5}\operatorname{AppellF1}\left[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(9\left(a+b\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$2\left(2\left(a-b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^2$$

$$\left.\left.\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)\right)+$$

$$\left(5\,a^2\left(a+b\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right.$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left(2\left(2\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$\left(a+b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+15$$

$$\left(a+b\right)\left(\frac{1}{5\left(a+b\right)}2\left(a-b\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$\left.\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{1}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]$$

$$\left.\mathrm{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+2\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\left(2\left(a-b\right)\left(\frac{1}{21\left(a+b\right)}25\left(a-b\right)\mathrm{AppellF1}\left[\frac{7}{2},\frac{1}{3},\frac{8}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{5}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+(a+b)$$

$$\Bigg(\frac{1}{21\,(a+b)}10\,(a-b)\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{20}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)-$$

$$\Bigg(5\,a\,b\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(2\,\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+15$$

$$(a+b)\,\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\left(2\,(a-b)\,\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{1}{3},\,\frac{8}{3},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\,\frac{4}{3},\,\frac{5}{3},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+(a+b)$$

$$\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{4}{3},\,\frac{5}{3},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{20}{21}\,\text{AppellF1}\left[\frac{7}{2},\,\frac{7}{3},\,\frac{2}{3},\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 711: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]}{(a+b\,\text{Sec}[c+d x])^{5/3}}\,dx$$

Optimal (type 6, 110 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{5}{3},\frac{3}{2},\frac{1}{2}(1-\text{Sec}[c+d x]),\frac{b\,(1-\text{Sec}[c+d x])}{a+b}\right]\left(\frac{a+b\,\text{Sec}[c+d x]}{a+b}\right)^{2/3}\text{Tan}[c+d x]\right)\Big/\left((a+b)\,d\,\sqrt{1+\text{Sec}[c+d x]}\,(a+b\,\text{Sec}[c+d x])^{2/3}\right)$$

Result (type 6, 12 838 leaves):

$$\frac{(b+a\,\text{Cos}[c+d x])^2\,\text{Sec}[c+d x]^2\left(-\frac{3\,\text{Sin}[c+d x]}{2\,(-a^2+b^2)}+\frac{3\,b\,\text{Sin}[c+d x]}{2\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d x])}\right)}{d\,(a+b\,\text{Sec}[c+d x])^{5/3}}+$$

$$\Bigg((b+a\,\text{Cos}[c+d x])^{5/3}\left(\frac{b}{(-a^2+b^2)\,(b+a\,\text{Cos}[c+d x])^{2/3}\,\text{Sec}[c+d x]^{2/3}}-\right.$$

$$\left.\frac{a\,\text{Sec}[c+d x]^{1/3}}{4\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d x])^{2/3}}+\frac{3\,a\,\text{Cos}[2\,(c+d x)]\,\text{Sec}[c+d x]^{1/3}}{4\,(-a^2+b^2)\,(b+a\,\text{Cos}[c+d x])^{2/3}}\right)\text{Sec}[c+d x]^{5/3}$$

$$\left(-\frac{3\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}}{2\,(a^2-b^2)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}}+\Bigg(3\,(a-b)\,(a+b)\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\Bigg(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\,(a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(d\,(a+b\,\text{Sec}[c+d x])^{5/3}\Bigg(-\frac{3\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}}{4\,(a^2-b^2)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}}+$$

$$\Bigg(\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}+\Bigg(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Bigg/\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg)\Bigg/$$

$$\Bigg((a^2-b^2)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{5/3}\Bigg)-\Bigg(\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\Bigg(\Bigg(-a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\Bigg(\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\left(a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg)\Bigg/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg)\Bigg/\Bigg(2\,(a^2-b^2)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\Bigg)-\Bigg(3\,(a-b)\,(a+b)$$

$$\left(a\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-b\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\Bigg(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\left(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

$$\left(2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.\left(a+b\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2+15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(a^2-b^2\right)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{2/3}\left(-1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right.$$

$$\left(9\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)$$

$$\left(15\left(a+b\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\left(a-b\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}{a+b}\right]+\right.$$

$$\left.\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)^2\Bigg)+$$

$$\Bigg((a-b)\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\Bigg(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(2\,\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Bigg/$$

$$\Bigg(2\,(a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{2/3}$$

$$\Bigg(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(3\,(a-b)\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\,(a^2-b^2)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left((a-b)\,(a+b)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^5+3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left((a^2-b^2)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\right.\right.$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\right.$$

$$\left.\left.\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(a\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)+$$

$$\left((a-b)(a+b)\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\left(\left(\left(-a\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\right.\right.\right.\right.$$

$$\left.b\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\left(a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+\right.\right.$$

$$\left.\left.\left.b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)$$

$$\left(10\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right.$$

$$\left(2(a-b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^5+3\operatorname{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]$$

$$\left(2\left(2(a-b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\operatorname{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+15(a+b)\operatorname{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\left(a^2-b^2\right)\left(\frac{1}{1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}\left(-1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right.$$

$$\left(\frac{a+b-a\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{2/3}$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)-$$

$$\left(3\,(a-b)\,(a+b)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{1/3}$$

$$\left(2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\right)$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+9\,(a+b)\left(\frac{1}{9\,(a+b)}\right.$$

$$2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(2\,(a-b)\,\Bigg(\frac{1}{a+b}(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+(a+b)\,\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},$$

$$\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{4}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg)$$

$$\Bigg(10\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5+3\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(2\,\Bigg(2\,(a-b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(2\,(a^2-b^2)\,\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{2/3}\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\,\frac{2}{3},\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\,\left(a\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-b\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)-$$

$$\left(3\,(a-b)\,(a+b)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^{1/3}\right.$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{1/3}$$

$$\left(2\,\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,\frac{5}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]+\right.\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,\frac{2}{3},\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right] + 15\,(a+b)\left(\frac{1}{5\,(a+b)}\right.$$

$$2\,(a-b)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right] + \frac{1}{5}\mathrm{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right) +$$

$$2\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(2\,(a-b)\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{1}{3},\frac{8}{3},\right.\right.\right.$$

$$\left.\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right] + \frac{5}{21}\mathrm{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right) +$$

$$(a+b)\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right] +$$

$$\frac{20}{21}\mathrm{AppellF1}\left[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\mathrm{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)$$

$$\left(10\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\,(a-b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right] +\right.$$

$$\left.(a+b)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5 + 3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\Bigg(2\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(2\,(a^2-b^2)\left(\frac{1}{1-\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\Bigg(9\,(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)$$

$$\Bigg(15\,(a+b)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$2\Bigg(2\,(a-b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]+$$

$$(a+b)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\Bigg)\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2$$

$$\left(a\left(-1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg)+\Bigg(3\,(a-b)$$

$$(a+b)\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{1/3}$$

$$\left(\frac{a+b-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2+b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{1/3}$$

$$\Bigg(25\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4+$$

$$10\,\Bigg(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+$$

$$(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+$$

$$10\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^5\Bigg(2\,(a-b)\,\Bigg(\frac{1}{a+b}(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{8}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)+(a+b)\,\Bigg(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\right.$$

$$\frac{4}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right] + \frac{4}{5}\text{AppellF1}\left[\frac{5}{2}, \frac{7}{3}, \frac{2}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg) +$$

$$\frac{3}{2}\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\Bigg(2\Bigg(2(a-b)\,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$(a+b)\,\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 + 15(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Bigg) +$$

$$3\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg(\frac{1}{9(a+b)}2(a-b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{5}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right] +$$

$$\frac{1}{9}\text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)$$

$$\Bigg(2\Bigg(2(a-b)\,\text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, \frac{5}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right] +$$

$$(a+b)\,\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, \frac{2}{3}, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2 + 15(a+b)\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, \frac{2}{3}, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\Big]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)+$$

$$3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$15\,(a+b)\left(\frac{1}{5\,(a+b)}2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$

$$\frac{1}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg(2\,(a-b)\left(\frac{1}{21\,(a+b)}25\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3},\frac{8}{3},\right.\right.$$

$$\left.\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{21}\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$(a+b)\left(\frac{1}{21\,(a+b)}10\,(a-b)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},\frac{5}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$\left.\left.\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{20}{21}\text{AppellF1}\left[\frac{7}{2},\frac{7}{3},\frac{2}{3},\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\right)\right)\Bigg/$$

$$\left(2\left(a^2-b^2\right)\left(\frac{1}{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{2/3}\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(9\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},\frac{2}{3},\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{5}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.\left.(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

$$\left(15\,(a+b)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\frac{2}{3},\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(2\,(a-b)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},\frac{5}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]+\right.$$

$$\left.(a+b)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},\frac{2}{3},\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}\right]\right)$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\left(a\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-b\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\right)$$

Problem 713: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d\,x]^{2/3}}{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 6, 174 leaves, 6 steps):

$$\frac{a\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]\text{Sin}[c+d\,x]}{\left(a^2-b^2\right)d\left(\text{Cos}[c+d\,x]^2\right)^{1/6}\text{Sec}[c+d\,x]^{1/3}}-\frac{1}{\left(a^2-b^2\right)d}b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]\left(\text{Cos}[c+d\,x]^2\right)^{1/3}\text{Sec}[c+d\,x]^{2/3}\,\text{Sin}[c+d\,x]$$

Result (type 6, 4609 leaves):

$$\Bigg(9\left(a^2-b^2\right)\text{Sec}[c+d\,x]^{5/3}\,\text{Sin}[c+d\,x]\Bigg(\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\Big/$$
$$\Bigg(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\Bigg(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$
$$\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d\,x]^2\Bigg)+$$
$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$
$$\Bigg(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]-2\Bigg(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d\,x]^2\Bigg)\Bigg)\Bigg)\Big/$$
$$\Bigg(d\left(a+b\,\text{Sec}[c+d\,x]\right)\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)$$
$$\Bigg(-\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)^2}18\,b^2\left(a^2-b^2\right)\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^2$$
$$\Bigg(\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\Big/$$
$$\Bigg(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$
$$\Bigg(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d\,x]^2\Bigg)+$$
$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$
$$\Bigg(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]-$$

$$2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)\right)-$$

$$\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{5/3}\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)}\,12\left(a^2-b^2\right)\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^2$$

$$\left(\left(b\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\right/$$

$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{7}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)+$$

$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$

$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]-\right.$$

$$2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)\right)+$$

$$\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)}\,9\left(a^2-b^2\right)\text{Sec}[c+d\,x]^2$$

$$\left(\left(b\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\right/$$

$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{7}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)+$$

$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$

$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]-\right.$$

$$2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)\right)+$$

$$\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)}\,9\left(a^2-b^2\right)\text{Tan}[c+d\,x]$$

$$\Bigg(\Bigg(b\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)\Big/$$

$$\Bigg(\sqrt{1+\text{Tan}[c+d\,x]^2}$$

$$\Bigg(9\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+\left(-a^2+b^2\right)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)\Bigg)+$$

$$\Bigg(b\,\Bigg(\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{1}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)\,\sqrt{1+\text{Tan}[c+d\,x]^2}\Bigg)\Big/$$

$$\Bigg(9\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+\left(-a^2+b^2\right)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)+$$

$$\Bigg(a\,\Bigg(\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{4}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},$$

$$-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)\Bigg)\Big/$$

$$\Bigg(-9\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]-$$

$$2\,\Bigg(3\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+2\,\left(-a^2+b^2\right)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)-$$

$$\Bigg(b\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\sqrt{1+\text{Tan}[c+d\,x]^2}$$

$$\Bigg(2\,\Bigg(6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]+9\,\left(a^2-b^2\right)\,\Bigg(\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,$$

$$\frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-\frac{1}{9}\ \text{AppellF1}\Big[$$

$$\frac{3}{2},\ \frac{7}{6},\ 1,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]\Bigg)+$$

$$\text{Tan}[c+d\,x]^2\ \Bigg(6\,b^2\ \Bigg(\frac{1}{5\,\left(a^2-b^2\right)}12\,b^2\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{1}{6},\ 3,\ \frac{7}{2},\ -\text{Tan}[c+d\,x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-\frac{1}{5}\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{7}{6},\ 2,$$

$$\frac{7}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]\Bigg)+$$

$$\left(-a^2+b^2\right)\ \Bigg(\frac{1}{5\,\left(a^2-b^2\right)}6\,b^2\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{7}{6},\ 2,\ \frac{7}{2},\ -\text{Tan}[c+d\,x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-\frac{7}{5}\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{13}{6},\ 1,$$

$$\frac{7}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(9\,\left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{6},\ 1,\ \frac{3}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(6\,b^2\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{6},\ 2,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+\left(-a^2+b^2\right)$$

$$\text{AppellF1}\Big[\frac{3}{2},\ \frac{7}{6},\ 1,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\ \text{Tan}[c+d\,x]^2\Bigg)^2-$$

$$\Bigg(a\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{2}{3},\ 1,\ \frac{3}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$

$$\Bigg(-4\ \Bigg(3\,b^2\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{2}{3},\ 2,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$2\ \left(-a^2+b^2\right)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{5}{3},\ 1,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-9\ \left(a^2-b^2\right)\ \Bigg(\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{2}{3},\ 2,$$

$$\frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-\frac{4}{9}\ \text{AppellF1}\Big[$$

$$\frac{3}{2},\ \frac{5}{3},\ 1,\ \frac{5}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]\Bigg)-$$

$$2\ \text{Tan}[c+d\,x]^2\ \Bigg(3\,b^2\ \Bigg(\frac{1}{5\,\left(a^2-b^2\right)}12\,b^2\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{2}{3},\ 3,\ \frac{7}{2},\ -\text{Tan}[c+d\,x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]-\frac{4}{5}\ \text{AppellF1}\Big[\frac{5}{2},\ \frac{5}{3},\ 2,$$

$$\frac{7}{2},\ -\text{Tan}[c+d\,x]^2,\ \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[c+d\,x]^2\ \text{Tan}[c+d\,x]\Bigg)+$$

$$2\left(-a^2+b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-2\,\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\right)\Bigg/$$

$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]-2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)^2\right)\right)\right)$$

Problem 714: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[c+d\,x]^{1/3}}{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 6, 174 leaves, 6 steps):

$$\frac{a\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{3},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]\text{Sin}[c+d\,x]}{\left(a^2-b^2\right)d\left(\text{Cos}[c+d\,x]^2\right)^{1/3}\text{Sec}[c+d\,x]^{2/3}}-\frac{1}{\left(a^2-b^2\right)d}b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]\left(\text{Cos}[c+d\,x]^2\right)^{1/6}\text{Sec}[c+d\,x]^{1/3}\,\text{Sin}[c+d\,x]$$

Result (type 6, 4610 leaves):

$$\left(9\left(a^2-b^2\right)\text{Sec}[c+d\,x]^{4/3}\,\text{Sin}[c+d\,x]\right.$$

$$\left(\left(\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\Bigg/\right.\right.$$

$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)+$$

$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Bigg/$$

$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+5\left(a^2-b^2\right)\right.$$

$$\text{AppellF1}\left[\frac{3}{2}, \frac{11}{6}, 1, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(d\,\left(a+b\,\text{Sec}[c+d\,x]\right)\,\left(1+\text{Tan}[c+d\,x]^2\right)^{5/6}\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)$$

$$\Bigg(-\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{5/6}\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)^2}\,18\,b^2\,\left(a^2-b^2\right)\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^2$$

$$\Bigg(\Bigg(b\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\sqrt{1+\text{Tan}[c+d\,x]^2}\Bigg)\Bigg/$$

$$\Bigg(9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$

$$2\,\Bigg(3\,b^2\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 2, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)$$

$$\text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, 1, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)+$$

$$\Bigg(a\,\text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\Bigg/$$

$$\Bigg(-9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, 2, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+5\,\left(a^2-b^2\right)$$

$$\text{AppellF1}\left[\frac{3}{2}, \frac{11}{6}, 1, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)\Bigg)-$$

$$\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{11/6}\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)}\,15\,\left(a^2-b^2\right)\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^2$$

$$\Bigg(\Bigg(b\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\sqrt{1+\text{Tan}[c+d\,x]^2}\Bigg)\Bigg/$$

$$\Bigg(9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$

$$2\,\Bigg(3\,b^2\,\text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 2, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)$$

$$\text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, 1, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)+$$

$$\Bigg(a\,\text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\Bigg/$$

$$\Bigg(-9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, 2, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+5\,\left(a^2-b^2\right)$$

$$\text{AppellF1}\left[\frac{3}{2}, \frac{11}{6}, 1, \frac{5}{2}, -\text{Tan}[c+d\,x]^2, \frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)\Bigg)+$$

$$\frac{1}{\left(1+\operatorname{Tan}[c+d x]^2\right)^{5/6}\left(-a^2+b^2\left(1+\operatorname{Tan}[c+d x]^2\right)\right)} 9\left(a^2-b^2\right)\operatorname{Sec}[c+d x]^2$$
$$\left(\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\sqrt{1+\operatorname{Tan}[c+d x]^2}\right)\right/$$
$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$2\left(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$
$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\operatorname{Tan}[c+d x]^2\right)+$$
$$\left(a\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\Big/$$
$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$\left(-6 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+5\left(a^2-b^2\right)\right.$$
$$\left.\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\operatorname{Tan}[c+d x]^2\right)\right)+$$
$$\frac{1}{\left(1+\operatorname{Tan}[c+d x]^2\right)^{5/6}\left(-a^2+b^2\left(1+\operatorname{Tan}[c+d x]^2\right)\right)} 9\left(a^2-b^2\right)\operatorname{Tan}[c+d x]$$
$$\left(\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\operatorname{Sec}[c+d x]^2\operatorname{Tan}[c+d x]\right)\right/$$
$$\left(\sqrt{1+\operatorname{Tan}[c+d x]^2}\right.$$
$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$2\left(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$
$$\left.\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\operatorname{Tan}[c+d x]^2\right)\right)+$$
$$\left(b\left(\frac{1}{3\left(a^2-b^2\right)}2 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right.\right.$$
$$\operatorname{Sec}[c+d x]^2\operatorname{Tan}[c+d x]-\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\right.$$
$$\left.\left.\left.\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\operatorname{Sec}[c+d x]^2\operatorname{Tan}[c+d x]\right)\sqrt{1+\operatorname{Tan}[c+d x]^2}\right)\Big/$$
$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$2\left(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\operatorname{Tan}[c+d x]^2,\frac{b^2\operatorname{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\operatorname{Tan}[c+d x]^2\Big)+$$

$$\left(a\left(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right.\right.$$
$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{5}{9}\,\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},\right.$$
$$\left.\left.\left.-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\Big/$$
$$\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$
$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+5\left(a^2-b^2\right)\right.$$
$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d\,x]^2\right)-$$
$$\left(b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right.$$
$$\left(4\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left.\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$
$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]+9\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\right.\right.$$
$$\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{2}{9}\,\text{AppellF1}\left[$$
$$\left.\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)+$$
$$2\,\text{Tan}[c+d\,x]^2\left(3\,b^2\left(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},3,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\right.\right.\right.$$
$$\left.\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{2}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\right.$$
$$\left.\left.\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)+$$
$$\left(-a^2+b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\right.\right.$$
$$\left.\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{8}{5}\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},1,\right.$$
$$\left.\left.\left.\left.\left.\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\right)\right)\Big/$$
$$\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$
$$2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Big)\,\text{Tan}[c+d x]^2\Big)^2-$$

$$\Big(a\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]$$

$$\Big(2\,\Big(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+$$

$$5\,(a^2-b^2)\,\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Big)\Big)$$

$$\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-9\,(a^2-b^2)\,\Big(\frac{1}{3\,(a^2-b^2)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{6},2,$$

$$\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{5}{9}\,\text{AppellF1}\Big[$$

$$\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Big)+$$

$$\text{Tan}[c+d x]^2\,\Big(-6\,b^2\,\Big(\frac{1}{5\,(a^2-b^2)}12\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{5}{6},3,\frac{7}{2},-\text{Tan}[c+d x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\text{AppellF1}\Big[\frac{5}{2},\frac{11}{6},2,$$

$$\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Big)+$$

$$5\,(a^2-b^2)\,\Big(\frac{1}{5\,(a^2-b^2)}6\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{11}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{11}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{17}{6},1,$$

$$\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(-9\,(a^2-b^2)\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+$$

$$\Big(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+5\,(a^2-b^2)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Big)\,\text{Tan}[c+d x]^2\Big)^2\Big)\Big)\Big)$$

Problem 715: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Sec}[c+d x]^{1/3}\,(a+b\,\text{Sec}[c+d x])}\,dx$$

Optimal (type 6, 174 leaves, 6 steps):

$$-\frac{b\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{6},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]\text{Sin}[c+d\,x]}{\left(a^2-b^2\right)d\,\left(\text{Cos}[c+d\,x]^2\right)^{1/6}\text{Sec}[c+d\,x]^{1/3}}+$$

$$\frac{1}{\left(a^2-b^2\right)d}a\,\text{AppellF1}\left[\frac{1}{2},-\frac{2}{3},1,\frac{3}{2},\text{Sin}[c+d\,x]^2,\frac{a^2\,\text{Sin}[c+d\,x]^2}{a^2-b^2}\right]$$
$$\left(\text{Cos}[c+d\,x]^2\right)^{1/3}\text{Sec}[c+d\,x]^{2/3}\,\text{Sin}[c+d\,x]$$

Result (type 6, 9174 leaves):

$$\left(\left(\frac{\text{Sec}[c+d\,x]^{2/3}}{2\,(b+a\,\text{Cos}[c+d\,x])}+\frac{\text{Cos}[2\,(c+d\,x)]\,\text{Sec}[c+d\,x]^{2/3}}{2\,(b+a\,\text{Cos}[c+d\,x])}\right)\right.$$
$$\text{Tan}[c+d\,x]\left(\left(9\left(2\,a^4-5\,a^2\,b^2+3\,b^4\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\right.\right.\right.$$
$$\left.\left.\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\Big/$$
$$\left(a\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$
$$\left.\left.\text{Tan}[c+d\,x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)-$$
$$\left(9\,b\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$
$$\left(\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$
$$2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$
$$\left.2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$
$$\left.\text{Tan}[c+d\,x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)-$$
$$\left(\sqrt{1+\text{Tan}[c+d\,x]^2}\left(3\left(-6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.\right.$$
$$\left.\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$
$$\text{Tan}[c+d\,x]^2\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)+5\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\right.$$
$$\left.\left.\left.\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\left(9\,a^2-b^2\left(9+7\,\text{Tan}[c+d\,x]^2\right)\right)\right)\right)\Big/$$
$$\left(a\left(-15\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[c+d\,x]^2\Big)$$

$$\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)\Big)\Big)\Big/\,\left(d\,\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}\right.$$

$$\left(-\frac{1}{3\,\left(1+\text{Tan}[c+d\,x]^2\right)^{5/3}}\,4\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]^2\,\left(\left(\left(9\,\left(2\,a^4-5\,a^2\,b^2+3\,b^4\right)\right.\right.\right.\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\sqrt{1+\text{Tan}[c+d\,x]^2}\right)\Big/$$

$$\left(a\,\left(-9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{7}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\text{Tan}[c+d\,x]^2\right)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)-$$

$$\left(9\,b\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\Big/$$

$$\left(\left(9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+2\right.\right.$$

$$\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.2\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\text{Tan}[c+d\,x]^2\right)\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)-$$

$$\left(\sqrt{1+\text{Tan}[c+d\,x]^2}\,\left(3\,\left(-6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.\right.$$

$$\left.\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\text{Tan}[c+d\,x]^2\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)+5\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{6},\right.$$

$$\left.\left.\left.1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\left(9\,a^2-b^2\,\left(9+7\,\text{Tan}[c+d\,x]^2\right)\right)\right)\right)\Big/$$

$$\left(a\,\left(-15\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(-6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\text{Tan}[c+d\,x]^2\Big)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)\Big)\Big)+$$

$$\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}}\,\text{Sec}[c+d\,x]^2\,\Bigg(\Bigg(9\,\left(2\,a^4-5\,a^2\,b^2+3\,b^4\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{6},\,1,$$

$$\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\sqrt{1+\text{Tan}[c+d\,x]^2}\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(-9\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{1}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{7}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[c+d\,x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Bigg)-$$

$$\Bigg(9\,b\,\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{2}{3},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$2\,\Bigg(3\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{2}{3},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$2\,\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{5}{3},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[c+d\,x]^2\Bigg)\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Bigg)-$$

$$\Bigg(\sqrt{1+\text{Tan}[c+d\,x]^2}\,\Bigg(3\,\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[c+d\,x]^2\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)+5\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{1}{6},$$

$$1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\left(9\,a^2-b^2\,\left(9+7\,\text{Tan}[c+d\,x]^2\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(-15\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{1}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+\left(a^2-b^2\right)$$

$$\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)$$

$$\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Bigg)\Bigg)+\frac{1}{\left(1+\text{Tan}[c+d\,x]^2\right)^{2/3}}\,\text{Tan}[c+d\,x]$$

$$\Bigg(\Bigg(18\,b^2\,\left(2\,a^4-5\,a^2\,b^2+3\,b^4\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\,\sqrt{1+\text{Tan}[c+d x]^2}\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(-9\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+(a^2-b^2)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d x]^2\right)\right)^2\Bigg)+\Bigg(9\,(2\,a^4-5\,a^2\,b^2+3\,b^4)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Bigg)\Bigg/$$

$$\Bigg(a\,\sqrt{1+\text{Tan}[c+d x]^2}\,\Bigg(-9\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+(a^2-b^2)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)+$$

$$\Bigg(9\,(2\,a^4-5\,a^2\,b^2+3\,b^4)\,\Bigg(\frac{1}{3\,(a^2-b^2)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{1}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Bigg)\,\sqrt{1+\text{Tan}[c+d x]^2}\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(-9\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+(a^2-b^2)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)+\Bigg(18\,b^3\,(-a^2+b^2)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+2\,\Bigg(3\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]+2\,(-a^2+b^2)\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[c+d\,x]^2\Big)\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)^2\Big)-$$

$$\Bigg(9\,b\left(-a^2+b^2\right)\Bigg(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{4}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Bigg(9\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+2\Bigg(3\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+2\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[c+d\,x]^2\Bigg)$$

$$\left(-a^2+b^2\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Bigg)-\Bigg(9\left(2\,a^4-5\,a^2\,b^2+3\,b^4\right)\text{AppellF1}\Big[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\sqrt{1+\text{Tan}[c+d\,x]^2}$$

$$\Bigg(2\Bigg(-6\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-9\left(a^2-b^2\right)\Bigg(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{1}{9}\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)+$$

$$\text{Tan}[c+d\,x]^2\Bigg(-6\,b^2\Bigg(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{6},3,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{1}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{6},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)+$$

$$\left(a^2-b^2\right)\Bigg(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{6},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{7}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{13}{6},1,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(a\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-6 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)^2\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)+$$

$$\left(9 b\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right.$$

$$\left(4\left(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\right.$$

$$\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]+9\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)}2 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{4}{9}\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)+$$

$$2\,\text{Tan}[c+d x]^2\left(3 b^2\left(\frac{1}{5\left(a^2-b^2\right)}12 b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3},3,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{4}{5}\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)+\right.$$

$$\left.\left.\left.2\left(-a^2+b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)}6 b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-2\,\text{AppellF1}\left[\frac{5}{2},\frac{8}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)\right)\right)\right)\Big/$$

$$\left(\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+2\left(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)^2\right.$$

$$\left.\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-\left(2 b^2\,\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\sqrt{1+\text{Tan}[c+d x]^2}\right.$$

$$\left(3\left(-6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2 \left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\left(9 a^2-b^2\left(9+7 \text{Tan}[c+d x]^2\right)\right)\right)\right)\Big/$$

$$\left(a\left(-15\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)^2\right)-\left(\text{Sec}[c+d x]^2 \text{Tan}[c+d x]\right.$$

$$\left(3\left(-6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2 \left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\left(9 a^2-b^2\left(9+7 \text{Tan}[c+d x]^2\right)\right)\right)\right)\Big/$$

$$\left(a\sqrt{1+\text{Tan}[c+d x]^2}\left(-15\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)+$$

$$\left(\sqrt{1+\text{Tan}[c+d x]^2}\left(2\left(-6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\right.\right.$$

$$\text{Sec}[c+d x]^2 \text{Tan}[c+d x]-15\left(a^2-b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)} 6 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \text{Sec}[c+d x]^2 \text{Tan}[c+d x]-\frac{1}{5} \text{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \text{Sec}[c+d x]^2 \text{Tan}[c+d x]\right)+$$

$$\mathrm{Tan}[c+d\,x]^2\left(-6\,b^2\left(\frac{1}{7\left(a^2-b^2\right)}20\,b^2\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{1}{6},3,\frac{9}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]-\frac{5}{21}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{7}{6},2,\frac{9}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\right)+\left(a^2-b^2\right)\left(\frac{1}{7\left(a^2-b^2\right)}10\,b^2\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{7}{6},2,\frac{9}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]-\frac{5}{3}\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{13}{6},1,\frac{9}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\right)\right)\Bigg)\Bigg)$$

$$\Bigg(3\left(-6\,b^2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\mathrm{Tan}[c+d\,x]^2\left(-a^2+b^2\left(1+\mathrm{Tan}[c+d\,x]^2\right)\right)+5\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\left(9\,a^2-b^2\left(9+7\,\mathrm{Tan}[c+d\,x]^2\right)\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(a\left(-15\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(-6\,b^2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\mathrm{Tan}[c+d\,x]^2\right)^2\left(a^2-b^2\left(1+\mathrm{Tan}[c+d\,x]^2\right)\right)\Bigg)-$$

$$\Bigg(\sqrt{1+\mathrm{Tan}[c+d\,x]^2}\,\Bigg(-70\,b^2\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{6},1,\frac{5}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]+6\,b^2\left(-6\,b^2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]^3+6\left(-6\,b^2\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{1}{6},2,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{5}{2},\frac{7}{6},1,\frac{7}{2},-\mathrm{Tan}[c+d\,x]^2,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\left(-a^2+b^2\left(1+\mathrm{Tan}[c+d\,x]^2\right)\right)+$$

$$3\,\mathrm{Tan}[c+d\,x]^2\,\Bigg(-6\,b^2\,\Bigg(\frac{1}{7\,(a^2-b^2)}20\,b^2\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{1}{6},\,3,\,\frac{9}{2},\,-\mathrm{Tan}[c+d\,x]^2,$$
$$\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]-\frac{5}{21}\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{7}{6},\,2,$$
$$\frac{9}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\Bigg)+$$
$$(a^2-b^2)\,\Bigg(\frac{1}{7\,(a^2-b^2)}10\,b^2\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{7}{6},\,2,\,\frac{9}{2},\,-\mathrm{Tan}[c+d\,x]^2,$$
$$\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]-\frac{5}{3}\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{13}{6},\,1,$$
$$\frac{9}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\Bigg)\Bigg)$$
$$\left(-a^2+b^2\,\left(1+\mathrm{Tan}[c+d\,x]^2\right)\right)+5\,(a^2-b^2)\,\Bigg(\frac{1}{5\,(a^2-b^2)}6\,b^2\,\mathrm{AppellF1}\Big[$$
$$\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]-$$
$$\frac{1}{5}\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$
$$\mathrm{Sec}[c+d\,x]^2\,\mathrm{Tan}[c+d\,x]\Bigg)\,\left(9\,a^2-b^2\,\left(9+7\,\mathrm{Tan}[c+d\,x]^2\right)\right)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(a\,\Bigg(-15\,(a^2-b^2)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{1}{6},\,1,\,\frac{5}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$
$$\Bigg(-6\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{1}{6},\,2,\,\frac{7}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$
$$(a^2-b^2)\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{7}{6},\,1,\,\frac{7}{2},\,-\mathrm{Tan}[c+d\,x]^2,\,\frac{b^2\,\mathrm{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Bigg)$$
$$\mathrm{Tan}[c+d\,x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\mathrm{Tan}[c+d\,x]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 716: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\mathrm{Sec}[c+d\,x]^{2/3}\,(a+b\,\mathrm{Sec}[c+d\,x])}\,dx$$

Optimal (type 6, 174 leaves, 6 steps):

$$-\frac{b\,\mathrm{AppellF1}\Big[\frac{1}{2},\,-\frac{1}{3},\,1,\,\frac{3}{2},\,\mathrm{Sin}[c+d\,x]^2,\,\frac{a^2\,\mathrm{Sin}[c+d\,x]^2}{a^2-b^2}\Big]\,\mathrm{Sin}[c+d\,x]}{(a^2-b^2)\,d\,\left(\mathrm{Cos}[c+d\,x]^2\right)^{1/3}\,\mathrm{Sec}[c+d\,x]^{2/3}}+$$
$$\frac{1}{(a^2-b^2)\,d}a\,\mathrm{AppellF1}\Big[\frac{1}{2},\,-\frac{5}{6},\,1,\,\frac{3}{2},\,\mathrm{Sin}[c+d\,x]^2,\,\frac{a^2\,\mathrm{Sin}[c+d\,x]^2}{a^2-b^2}\Big]$$
$$\left(\mathrm{Cos}[c+d\,x]^2\right)^{1/6}\,\mathrm{Sec}[c+d\,x]^{1/3}\,\mathrm{Sin}[c+d\,x]$$

Result (type 6, 9178 leaves):

$$\left(\left(\frac{\text{Sec}[c+d x]^{1/3}}{2\left(b+a \text{Cos}[c+d x]\right)}+\frac{\text{Cos}\left[2\left(c+d x\right)\right] \text{Sec}[c+d x]^{1/3}}{2\left(b+a \text{Cos}[c+d x]\right)}\right)\right.$$
$$\text{Tan}[c+d x]\left(\left(\left(9\left(a^4-4 a^2 b^2+3 b^4\right) \text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\right.\right.\right.\right.$$
$$\left.\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \sqrt{1+\text{Tan}[c+d x]^2}\Bigg)\Bigg/$$
$$\left(a\left(-9\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-\right.\right.$$
$$2\left(3 b^2 \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$
$$\left.\left.\text{Tan}[c+d x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-$$
$$\left(18 b\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\Bigg/$$
$$\left(\left(9\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(6 b^2 \text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$\left.5\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$
$$\left.\left.\text{Tan}[c+d x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-$$
$$\left(\sqrt{1+\text{Tan}[c+d x]^2}\left(6\left(-3 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.\right.$$
$$\left.\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$
$$\text{Tan}[c+d x]^2\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\right.$$
$$\left.\left.\left.\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\left(9 a^2-b^2\left(9+8 \text{Tan}[c+d x]^2\right)\right)\right)\right)\Bigg/$$
$$\left(a\left(-15\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-\right.\right.$$
$$2\left(3 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2\Bigg)$$
$$\left.\left.\left.\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)\right)\right)\Bigg/\left(2 d\left(1+\text{Tan}[c+d x]^2\right)^{5/6}\right.$$
$$\left(-\frac{1}{6\left(1+\text{Tan}[c+d x]^2\right)^{11/6}} 5 \text{Sec}[c+d x]^2 \text{Tan}[c+d x]^2\left(\left(\left(9\left(a^4-4 a^2 b^2+3 b^4\right)\right.\right.\right.\right.$$

$$\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \sqrt{1+\text{Tan}[c+d x]^2}\Bigg) \Bigg/ \Bigg(a \Bigg(-9 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-2 \Bigg(3 b^2 \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg) \text{Tan}[c+d x]^2\Bigg) \left(a^2-b^2 \left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)-$$

$$\Bigg(18 b \left(-a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg) \Bigg/ \Bigg(\Bigg(9 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\Bigg(6 b^2 \text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+5 \left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg) \text{Tan}[c+d x]^2\Bigg) \left(-a^2+b^2 \left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)-$$

$$\Bigg(\sqrt{1+\text{Tan}[c+d x]^2} \Bigg(6 \Bigg(-3 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg) \text{Tan}[c+d x]^2 \left(-a^2+b^2 \left(1+\text{Tan}[c+d x]^2\right)\right)+5 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \left(9 a^2-b^2 \left(9+8 \text{Tan}[c+d x]^2\right)\right)\Bigg)\Bigg) \Bigg/ \Bigg(a \Bigg(-15 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-2 \Bigg(3 b^2 \text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg) \text{Tan}[c+d x]^2\Bigg) \left(a^2-b^2 \left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)\Bigg)+$$

$$\frac{1}{2 \left(1+\text{Tan}[c+d x]^2\right)^{5/6}} \text{Sec}[c+d x]^2 \Bigg(\Bigg(9 \left(a^4-4 a^2 b^2+3 b^4\right) \text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right] \sqrt{1+\text{Tan}[c+d x]^2}\Bigg) \Bigg/ \Bigg(a \Bigg(-9 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-$$

$$2\left(3 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 2, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, 1, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$

$$\left.\left.\text{Tan}[c+d x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-$$

$$\left(18 b\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \Big/$$

$$\left(\left(9\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{5}{6}, 1, \frac{3}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(6 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{5}{6}, 2, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.$$

$$\left.5\left(-a^2+b^2\right) \text{AppellF1}\left[\frac{3}{2}, \frac{11}{6}, 1, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$

$$\left.\left.\text{Tan}[c+d x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-$$

$$\left(\sqrt{1+\text{Tan}[c+d x]^2}\left(6\left(-3 b^2 \text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.\right.$$

$$\left.\left(a^2-b^2\right) \text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$

$$\text{Tan}[c+d x]^2\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3},\right.$$

$$\left.\left.\left.1, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\left(9 a^2-b^2\left(9+8 \text{Tan}[c+d x]^2\right)\right)\right)\right) \Big/$$

$$\left(a\left(-15\left(a^2-b^2\right) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-\right.\right.$$

$$2\left(3 b^2 \text{AppellF1}\left[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2\right)$$

$$\left.\left.\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)\right)+\frac{1}{2\left(1+\text{Tan}[c+d x]^2\right)^{5/6}} \text{Tan}[c+d x]$$

$$\left(\left(18 b^2\left(a^4-4 a^2 b^2+3 b^4\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right.\right.$$

$$\left.\text{Sec}[c+d x]^2 \text{Tan}[c+d x] \sqrt{1+\text{Tan}[c+d x]^2}\right) \Big/$$

$$\left(a\left(-9\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{3}, 1, \frac{3}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]-\right.\right.$$

$$2\left(3 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{3}, 2, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2}, \frac{4}{3}, 1, \frac{5}{2}, -\text{Tan}[c+d x]^2, \frac{b^2 \text{Tan}[c+d x]^2}{a^2-b^2}\right]\right) \text{Tan}[c+d x]^2\right)$$

$$\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)^2\Big)+\left(9\left(a^4-4 a^2 b^2+3 b^4\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)\Big/$$

$$\Bigg(a\sqrt{1+\text{Tan}[c+d x]^2}\,\Bigg(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]-2\Bigg(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d x]^2\Bigg)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)+$$

$$\Bigg(9\left(a^4-4 a^2 b^2+3 b^4\right)\Bigg(\frac{1}{3\left(a^2-b^2\right)}2 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Bigg)\sqrt{1+\text{Tan}[c+d x]^2}\Bigg)\Big/$$

$$\Bigg(a\Bigg(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]-2\Bigg(3 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\Bigg)+\left(36 b^3\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)\Big/$$

$$\Bigg(\Bigg(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\Bigg(6 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+5\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[c+d x]^2\Bigg)\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)^2\Bigg)-$$

$$\Bigg(18 b\left(-a^2+b^2\right)\Bigg(\frac{1}{3\left(a^2-b^2\right)}2 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{5}{9}\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\Bigg)\Bigg)\Big/$$

$$\left(\left(9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{5}{6},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{6},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+5\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{11}{6},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)-\left(9\left(a^4-4\,a^2\,b^2+3\,b^4\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\sqrt{1+\text{Tan}[c+d x]^2}\left(-4\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-9\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{2}{9}\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)-2\,\text{Tan}[c+d x]^2\left(3\,b^2\left(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},3,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{2}{5}\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)+\left(-a^2+b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]-\frac{8}{5}\text{AppellF1}\left[\frac{5}{2},\frac{7}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\,\text{Tan}[c+d x]\right)\right)\right)\right)\Big/$$

$$\left(a\left(-9\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3},1,\frac{3}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]-2\left(3\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},2,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\,\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)^2\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)+$$

$$\left(18\,b\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{5}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right.$$

$$\left(2\left(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left.5\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{11}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]+9\,\left(a^2-b^2\right)\,\left(\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{6},\,2,\right.\right.$$

$$\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{5}{9}\,\text{AppellF1}\Big[$$

$$\left.\frac{3}{2},\,\frac{11}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)+$$

$$\text{Tan}[c+d\,x]^2\,\left(6\,b^2\,\left(\frac{1}{5\,\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{6},\,3,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\right.\right.\right.$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\text{AppellF1}\Big[\frac{5}{2},\,\frac{11}{6},\,2,$$

$$\left.\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Bigg)+$$

$$5\,\left(-a^2+b^2\right)\,\left(\frac{1}{5\,\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{11}{6},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\right.\right.$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{11}{5}\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{17}{6},\,1,$$

$$\left.\left.\left.\left.\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\right)\right)\right)\right)\Bigg/$$

$$\left(\left(9\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{5}{6},\,1,\,\frac{3}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(6\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{6},\,2,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+5\,\left(-a^2+b^2\right)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\,\frac{11}{6},\,1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[c+d\,x]^2\right)^2$$

$$\left.\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\right)-\left(2\,b^2\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\,\sqrt{1+\text{Tan}[c+d\,x]^2}\right.$$

$$\left(6\,\left(-3\,b^2\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{3},\,2,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left.\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{4}{3},\,1,\,\frac{7}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\right)$$

$$\text{Tan}[c+d\,x]^2\,\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)+5\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{3},\right.$$

$$\left.\left.\left.1,\,\frac{5}{2},\,-\text{Tan}[c+d\,x]^2,\,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\right]\,\left(9\,a^2-b^2\,\left(9+8\,\text{Tan}[c+d\,x]^2\right)\right)\right)\right)\Bigg/$$

$$\left(a\left(-15\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]-\right.\right.$$
$$2\left(3 b^2\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\right.$$
$$\left.\left.\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)$$
$$\left.\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)^2\right)-\left(\text{Sec}[c+d x]^2\text{Tan}[c+d x]\right.$$
$$\left(6\left(-3 b^2\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left.\left(a^2-b^2\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$
$$\text{Tan}[c+d x]^2\left(-a^2+b^2\left(1+\text{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},\right.$$
$$\left.\left.\left.1,\frac{5}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\left(9 a^2-b^2\left(9+8\text{Tan}[c+d x]^2\right)\right)\right)\right)\Big/$$
$$\left(a\sqrt{1+\text{Tan}[c+d x]^2}\left(-15\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d x]^2,\right.\right.\right.$$
$$\left.\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]-2\left(3 b^2\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\right.\right.$$
$$\left.\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\right.$$
$$\left.\left.\left.\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)\text{Tan}[c+d x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[c+d x]^2\right)\right)\right)+$$
$$\left(\sqrt{1+\text{Tan}[c+d x]^2}\left(-4\left(3 b^2\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]+\right.\right.\right.$$
$$\left.\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\right)$$
$$\text{Sec}[c+d x]^2\text{Tan}[c+d x]-15\left(a^2-b^2\right)\left(\frac{1}{5\left(a^2-b^2\right)}6 b^2\text{AppellF1}\left[\frac{5}{2},\frac{1}{3},2,\right.\right.$$
$$\left.\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\text{Tan}[c+d x]-\frac{2}{5}\text{AppellF1}\left[\right.$$
$$\left.\left.\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\text{Tan}[c+d x]\right)-$$
$$2\text{Tan}[c+d x]^2\left(3 b^2\left(\frac{1}{7\left(a^2-b^2\right)}20 b^2\text{AppellF1}\left[\frac{7}{2},\frac{1}{3},3,\frac{9}{2},-\text{Tan}[c+d x]^2,\right.\right.\right.$$
$$\left.\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\text{Tan}[c+d x]-\frac{10}{21}\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},2,\right.$$
$$\left.\left.\frac{9}{2},-\text{Tan}[c+d x]^2,\frac{b^2\text{Tan}[c+d x]^2}{a^2-b^2}\right]\text{Sec}[c+d x]^2\text{Tan}[c+d x]\right)+$$
$$\left(-a^2+b^2\right)\left(\frac{1}{7\left(a^2-b^2\right)}10 b^2\text{AppellF1}\left[\frac{7}{2},\frac{4}{3},2,\frac{9}{2},-\text{Tan}[c+d x]^2,\right.\right.$$

$$\frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big] \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]-\frac{40}{21} \operatorname{AppellF1}\Big[\frac{7}{2}, \frac{7}{3}, 1,$$

$$\frac{9}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big] \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]\Big)\Big)\Big)\Big)$$

$$\Big(6\Big(-3 b^2 \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]\Big)$$

$$\operatorname{Tan}[c+d x]^2\left(-a^2+b^2\left(1+\operatorname{Tan}[c+d x]^2\right)\right)+5\left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{3}{2}, \frac{1}{3},$$

$$1, \frac{5}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]\left(9 a^2-b^2\left(9+8 \operatorname{Tan}[c+d x]^2\right)\right)\Big)\Big)\Big/$$

$$\Big(a\Big(-15\left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]-$$

$$2\Big(3 b^2 \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]+$$

$$\left(-a^2+b^2\right) \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]\Big)$$

$$\operatorname{Tan}[c+d x]^2\Big)^2\left(a^2-b^2\left(1+\operatorname{Tan}[c+d x]^2\right)\right)\Big)-$$

$$\Big(\sqrt{1+\operatorname{Tan}[c+d x]^2}\Big(-80 b^2\left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{3}{2}, \frac{1}{3}, 1, \frac{5}{2}, -\operatorname{Tan}[c+d x]^2,$$

$$\frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big] \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]+12 b^2\Big(-3 b^2$$

$$\operatorname{AppellF1}\Big[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]+\left(a^2-b^2\right) \operatorname{AppellF1}\Big[$$

$$\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]\Big) \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]^3+$$

$$12\Big(-3 b^2 \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{1}{3}, 2, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{5}{2}, \frac{4}{3}, 1, \frac{7}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big]\Big)$$

$$\operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]\left(-a^2+b^2\left(1+\operatorname{Tan}[c+d x]^2\right)\right)+$$

$$6 \operatorname{Tan}[c+d x]^2\Big(-3 b^2\Big(\frac{1}{7\left(a^2-b^2\right)} 20 b^2 \operatorname{AppellF1}\Big[\frac{7}{2}, \frac{1}{3}, 3, \frac{9}{2}, -\operatorname{Tan}[c+d x]^2,$$

$$\frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big] \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]-\frac{10}{21} \operatorname{AppellF1}\Big[\frac{7}{2}, \frac{4}{3}, 2,$$

$$\frac{9}{2}, -\operatorname{Tan}[c+d x]^2, \frac{b^2 \operatorname{Tan}[c+d x]^2}{a^2-b^2}\Big] \operatorname{Sec}[c+d x]^2 \operatorname{Tan}[c+d x]\Big)+$$

$$\left(a^2-b^2\right)\Big(\frac{1}{7\left(a^2-b^2\right)} 10 b^2 \operatorname{AppellF1}\Big[\frac{7}{2}, \frac{4}{3}, 2, \frac{9}{2}, -\operatorname{Tan}[c+d x]^2,$$

$$\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-\frac{40}{21}\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3},1,$$
$$\frac{9}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Big)\Big)$$
$$\left(-a^2+b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)+5\,\left(a^2-b^2\right)\,\Big(\frac{1}{5\,\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\Big[$$
$$\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]-$$
$$\frac{2}{5}\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]$$
$$\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]\Big)\,\left(9\,a^2-b^2\,\left(9+8\,\text{Tan}[c+d\,x]^2\right)\right)\Big)\Big)\Big/$$
$$\Big(a\,\Big(-15\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{3},1,\frac{5}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]-$$
$$2\,\Big(3\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{1}{3},2,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]+$$
$$\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3},1,\frac{7}{2},-\text{Tan}[c+d\,x]^2,\frac{b^2\,\text{Tan}[c+d\,x]^2}{a^2-b^2}\Big]\Big)$$
$$\text{Tan}[c+d\,x]^2\Big)\,\left(a^2-b^2\,\left(1+\text{Tan}[c+d\,x]^2\right)\right)\Big)\Big)\Big)\Big)$$

Problem 718: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^{5/3}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\text{Sec}[c+d\,x]^{5/3}\,\sqrt{a+b\,\text{Sec}[c+d\,x]},x\right]$$

Result (type 1, 1 leaves):

???

Problem 720: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^{2/3}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\text{Sec}[c+d\,x]^{2/3}\,\sqrt{a+b\,\text{Sec}[c+d\,x]},x\right]$$

Result (type 1, 1 leaves):

???

Problem 726: Attempted integration timed out after 120 seconds.

$$\int \frac{\sqrt{a + b\,\mathrm{Sec}[c + d\,x]}}{\mathrm{Sec}[c + d\,x]^{7/3}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\frac{\sqrt{a + b\,\mathrm{Sec}[c + d\,x]}}{\mathrm{Sec}[c + d\,x]^{7/3}},\ x\right]$$

Result (type 1, 1 leaves):

???

Problem 727: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c + d\,x]^{7/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c + d\,x]^{7/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2},\ x\right]$$

Result (type 1, 1 leaves):

???

Problem 728: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c + d\,x]^{5/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c + d\,x]^{5/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2},\ x\right]$$

Result (type 1, 1 leaves):

???

Problem 729: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c + d\,x]^{4/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c + d\,x]^{4/3}\,\left(a + b\,\mathrm{Sec}[c + d\,x]\right)^{3/2},\ x\right]$$

Result (type 1, 1 leaves):

???

Problem 730: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^{2/3}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\text{Sec}[c+d\,x]^{2/3}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 732: Attempted integration timed out after 120 seconds.

$$\int \frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\text{Sec}[c+d\,x]^{1/3}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\text{Sec}[c+d\,x]^{1/3}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 736: Attempted integration timed out after 120 seconds.

$$\int \frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\text{Sec}[c+d\,x]^{7/3}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\text{Sec}[c+d\,x]^{7/3}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 737: Attempted integration timed out after 120 seconds.

$$\int \text{Sec}[c+d\,x]^{7/3}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\text{Sec}[c+d\,x]^{7/3}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{5/2},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 738: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c+d x]^{5/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2} dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c+d x]^{5/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 739: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c+d x]^{4/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2} dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c+d x]^{4/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 740: Attempted integration timed out after 120 seconds.

$$\int \mathrm{Sec}[c+d x]^{2/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2} dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\mathrm{Sec}[c+d x]^{2/3} \left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 742: Attempted integration timed out after 120 seconds.

$$\int \frac{\left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2}}{\mathrm{Sec}[c+d x]^{1/3}} dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\mathrm{Int}\left[\frac{\left(a+b\,\mathrm{Sec}[c+d x]\right)^{5/2}}{\mathrm{Sec}[c+d x]^{1/3}}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 744: Attempted integration timed out after 120 seconds.

$$\int \frac{(a+b\,\text{Sec}[c+d\,x])^{5/2}}{\text{Sec}[c+d\,x]^{4/3}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{(a+b\,\text{Sec}[c+d\,x])^{5/2}}{\text{Sec}[c+d\,x]^{4/3}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 746: Attempted integration timed out after 120 seconds.

$$\int \frac{(a+b\,\text{Sec}[c+d\,x])^{5/2}}{\text{Sec}[c+d\,x]^{7/3}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{(a+b\,\text{Sec}[c+d\,x])^{5/2}}{\text{Sec}[c+d\,x]^{7/3}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 756: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d\,x]^{7/3}\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d\,x]^{7/3}\sqrt{a+b\,\text{Sec}[c+d\,x]}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 758: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sec}[c+d\,x]^{5/3}}{(a+b\,\text{Sec}[c+d\,x])^{3/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sec}[c+d\,x]^{5/3}}{(a+b\,\text{Sec}[c+d\,x])^{3/2}},\,x\right]$$

Result (type 1, 1 leaves):
???

Problem 760: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sec}[c+d\,x]^{2/3}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sec}[c+d\,x]^{2/3}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}},\,x\right]$$

Result (type 1, 1 leaves):
???

Problem 762: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d\,x]^{1/3}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d\,x]^{1/3}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}},\,x\right]$$

Result (type 1, 1 leaves):
???

Problem 764: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d\,x]^{4/3}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d\,x]^{4/3}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}},\,x\right]$$

Result (type 1, 1 leaves):
???

Problem 766: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d\,x]^{7/3}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d\,x]^{7/3}\,(a+b\,\text{Sec}[c+d\,x])^{3/2}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 768: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sec}[c+d\,x]^{5/3}}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sec}[c+d\,x]^{5/3}}{(a+b\,\text{Sec}[c+d\,x])^{5/2}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 770: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sec}[c+d\,x]^{2/3}}{(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sec}[c+d\,x]^{2/3}}{(a+b\,\text{Sec}[c+d\,x])^{5/2}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 772: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d\,x]^{1/3}\,(a+b\,\text{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d\,x]^{1/3}\,(a+b\,\text{Sec}[c+d\,x])^{5/2}},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 774: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d x]^{4/3} (a+b \,\text{Sec}[c+d x])^{5/2}} \, dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d x]^{4/3} (a+b \,\text{Sec}[c+d x])^{5/2}}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 776: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Sec}[c+d x]^{7/3} (a+b \,\text{Sec}[c+d x])^{5/2}} \, dx$$

Optimal (type 8, 28 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{\text{Sec}[c+d x]^{7/3} (a+b \,\text{Sec}[c+d x])^{5/2}}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 780: Result more than twice size of optimal antiderivative.

$$\int \frac{(d \,\text{Sec}[e+f x])^n}{a+b \,\text{Sec}[e+f x]} \, dx$$

Optimal (type 6, 192 leaves, 6 steps):

$$\frac{1}{(a^2-b^2) f} a \,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, \text{Sin}[e+f x]^2, \frac{a^2 \,\text{Sin}[e+f x]^2}{a^2-b^2}\right] \text{Cos}[e+f x] \left(\text{Cos}[e+f x]^2\right)^{\frac{1}{2}(-1+n)} (d \,\text{Sec}[e+f x])^n \,\text{Sin}[e+f x] - \frac{1}{(a^2-b^2) f} b \,\text{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2}, \text{Sin}[e+f x]^2, \frac{a^2 \,\text{Sin}[e+f x]^2}{a^2-b^2}\right] \left(\text{Cos}[e+f x]^2\right)^{n/2} (d \,\text{Sec}[e+f x])^n \,\text{Sin}[e+f x]$$

Result (type 6, 5280 leaves):

$$\Bigg((d \,\text{Sec}[e+f x])^n \,\text{Tan}[e+f x] \Bigg(-b \,\text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}-\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right] + a \,\text{Hypergeometric2F1}\left[\frac{1}{2}, 1-\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right] + \Bigg(3 a b^2 (a^2-b^2) \,\text{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \left(1+\text{Tan}[e+f x]^2\right)^{n/2}\Bigg) \Bigg/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+2b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\left(3b^3\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(2b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right)\Big/\left(a^2 f\left(a+b\,\text{Sec}[e+f x]\right)\right.$$

$$\left(\frac{1}{a^2}\text{Sec}[e+f x]^2\left(-b\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f x]^2\right]+a\,\text{Hypergeometric2F1}\left[\frac{1}{2},1-\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f x]^2\right]+\left(3ab^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+2b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\left(3b^3\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(2b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right)+$$

$$\frac{1}{a^2}\text{Tan}[e+f x]\left(\left(\left(6 a b^4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right.\right.\right.$$

$$\left.\text{Sec}[e+f x]^2\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left.2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)$$

$$\left.\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(3 a b^2\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{n}{2}}\right)\Big/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left.2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)$$

$$\left.\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)+\left(3 a b^2\left(a^2-b^2\right)\left(\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},\right.\right.\right.$$

$$\left.1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\text{Tan}[e+f x]+$$

$$\frac{1}{3\left(a^2-b^2\right)}2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\left.\left.\text{Sec}[e+f x]^2\text{Tan}[e+f x]\right)\left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left.2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)$$

$$\left.\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)+\left(6 b^5\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\ \left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)^2\Bigg)-\Bigg(3\,b^3\ \left(-a^2+b^2\right)$$

$$\Bigg(\frac{1}{3\ \left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{2}{3}\ \left(-\frac{1}{2}-\frac{n}{2}\right)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\ \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\left[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\ \left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)-$$

$$\Bigg(3\,b^3\ \left(-a^2+b^2\right)\ (1+n)\ \text{AppellF1}\left[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\ \left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\left[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\ \left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+a\,\text{Csc}[e+f x]\ \text{Sec}[e+f x]$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2},\ 1-\frac{n}{2},\ \frac{3}{2},\ -\text{Tan}[e+f x]^2\right]+\left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{n}{2}}\right)-b$$

$$\text{Csc}[e+f x]\ \text{Sec}[e+f x]$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2},\ \frac{1}{2}-\frac{n}{2},\ \frac{3}{2},\ -\text{Tan}[e+f x]^2\right]+\left(1+\text{Tan}[e+f x]^2\right)^{-\frac{1}{2}+\frac{n}{2}}\right)+$$

$$\Bigg(3\,b^3\ \left(-a^2+b^2\right)\ \text{AppellF1}\left[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}$$

$$\Bigg(2\ \Bigg(2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] + 3\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)} 2\, b^2\, \text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}-\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] - \frac{2}{3}\left(-\frac{1}{2}-\frac{n}{2}\right) \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]\right) + \text{Tan}[e+f x]^2 \left(2\, b^2 \left(\frac{1}{5\left(a^2-b^2\right)} 12\, b^2\, \text{AppellF1}\left[\frac{5}{2}, -\frac{1}{2}-\frac{n}{2}, 3, \frac{7}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] - \frac{6}{5}\left(-\frac{1}{2}-\frac{n}{2}\right) \text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}-\frac{n}{2}, 2, \frac{7}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]\right) + \left(a^2-b^2\right)(1+n) \left(\frac{1}{5\left(a^2-b^2\right)} 6\, b^2\, \text{AppellF1}\left[\frac{5}{2}, \frac{1}{2}-\frac{n}{2}, 2, \frac{7}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] - \frac{6}{5}\left(\frac{1}{2}-\frac{n}{2}\right) \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-\frac{n}{2}, 1, \frac{7}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]\right)\right)\Bigg)\Bigg)\Bigg) \Big/$$

$$\Bigg(\Bigg(3\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}-\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(2\, b^2\, \text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}-\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(a^2-b^2\right)(1+n)\, \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\Bigg)^2 \left(-a^2+b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg) -$$

$$\Bigg(3\, a\, b^2\left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \left(1+\text{Tan}[e+f x]^2\right)^{n/2} \Bigg(2\left(\left(a^2-b^2\right) n\, \text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] + 2\, b^2\, \text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] + 3\left(a^2-b^2\right)\left(\frac{1}{3} n\, \text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x] + \frac{1}{3\left(a^2-b^2\right)} 2\, b^2\, \text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]\right) +$$

$$\mathrm{Tan}[e+f x]^2 \left(\left(a^2-b^2\right) n \left(\frac{1}{5 \left(a^2-b^2\right)} 6 b^2 \,\mathrm{AppellF1}\left[\frac{5}{2}, 1-\frac{n}{2}, 2, \frac{7}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] \mathrm{Sec}[e+f x]^2 \,\mathrm{Tan}[e+f x] - \frac{6}{5} \left(1-\frac{n}{2}\right) \mathrm{AppellF1}\left[\frac{5}{2}, 2-\frac{n}{2}, 1, \frac{7}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] \mathrm{Sec}[e+f x]^2 \,\mathrm{Tan}[e+f x]\right) + 2 b^2 \left(\frac{3}{5} n \,\mathrm{AppellF1}\left[\frac{5}{2}, 1-\frac{n}{2}, 2, \frac{7}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] \mathrm{Sec}[e+f x]^2 \,\mathrm{Tan}[e+f x] + \frac{1}{5 \left(a^2-b^2\right)} 12 b^2 \,\mathrm{AppellF1}\left[\frac{5}{2}, -\frac{n}{2}, 3, \frac{7}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] \mathrm{Sec}[e+f x]^2 \,\mathrm{Tan}[e+f x]\right)\right)\Bigg)\Bigg) \Bigg/ \left(\left(3 \left(a^2-b^2\right) \mathrm{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(\left(a^2-b^2\right) n \,\mathrm{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right] + 2 b^2 \,\mathrm{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\mathrm{Tan}[e+f x]^2, \frac{b^2 \,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \mathrm{Tan}[e+f x]^2\right)^2 \left(a^2-b^2 \left(1+\mathrm{Tan}[e+f x]^2\right)\right)\right)\Bigg)\Bigg)$$

Problem 781: Result more than twice size of optimal antiderivative.

$$\int \frac{(d \,\mathrm{Sec}[e+f x])^n}{(a+b \,\mathrm{Sec}[e+f x])^2} \, dx$$

Optimal (type 6, 299 leaves, 9 steps):

$$\frac{1}{\left(a^2-b^2\right)^2 f} a^2 \,\mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-3+n), 2, \frac{3}{2}, \mathrm{Sin}[e+f x]^2, \frac{a^2 \,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\right] \mathrm{Cos}[e+f x] \left(\mathrm{Cos}[e+f x]^2\right)^{\frac{1}{2} (-1+n)} (d \,\mathrm{Sec}[e+f x])^n \,\mathrm{Sin}[e+f x] + \frac{1}{\left(a^2-b^2\right)^2 f} b^2 \,\mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-1+n), 2, \frac{3}{2}, \mathrm{Sin}[e+f x]^2, \frac{a^2 \,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\right] \mathrm{Cos}[e+f x] \left(\mathrm{Cos}[e+f x]^2\right)^{\frac{1}{2} (-1+n)} (d \,\mathrm{Sec}[e+f x])^n \,\mathrm{Sin}[e+f x] - \frac{1}{\left(a^2-b^2\right)^2 f} 2 a b \,\mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-2+n), 2, \frac{3}{2}, \mathrm{Sin}[e+f x]^2, \frac{a^2 \,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\right] \left(\mathrm{Cos}[e+f x]^2\right)^{n/2} (d \,\mathrm{Sec}[e+f x])^n \,\mathrm{Sin}[e+f x]$$

Result (type 6, 10 428 leaves):

$$\Bigg((d \,\mathrm{Sec}[e+f x])^n \Bigg(-\frac{1}{a^3} 2 b \,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}-\frac{n}{2}, \frac{3}{2}, -\mathrm{Tan}[e+f x]^2\right] \mathrm{Tan}[e+f x] +$$

$$\frac{\text{Hypergeometric2F1}\left[\frac{1}{2},1-\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f x]^2\right]\text{Tan}[e+f x]}{a^2}-$$

$$\left(6 b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/$$

$$\left(a\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(4 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(6 b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+4 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(6 b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/$$

$$\left(a^3\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\left(3 b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$

$$\left(a^2\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]+2 b^2\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)\right.$$

$$\left(-a^2+b^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/\Bigg(f\left(a+b\,\mathrm{Sec}[e+f x]\right)^2$$

$$\Bigg(-\frac{1}{a^3}2\,b\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-\frac{n}{2},\frac{3}{2},-\mathrm{Tan}[e+f x]^2\right]\mathrm{Sec}[e+f x]^2+$$

$$\frac{\mathrm{Hypergeometric2F1}\left[\frac{1}{2},1-\frac{n}{2},\frac{3}{2},-\mathrm{Tan}[e+f x]^2\right]\mathrm{Sec}[e+f x]^2}{a^2}-$$

$$\Bigg(24\,b^5\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]^2\left(1+\mathrm{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a\Bigg(3\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\Bigg(4\,b^2\,\mathrm{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)(1+n)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)$$

$$\mathrm{Tan}[e+f x]^2\Bigg)\left(a^2-b^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)^3\Bigg)+$$

$$\Bigg(24\,b^4\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]^2\left(1+\mathrm{Tan}[e+f x]^2\right)^{n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(3\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\Bigg(\left(a^2-b^2\right)n\,\mathrm{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$4\,b^2\,\mathrm{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)\mathrm{Tan}[e+f x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)^3\Bigg)-\Bigg(6\,b^3\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},\right.$$

$$\left.-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]\mathrm{Sec}[e+f x]^2\left(1+\mathrm{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a\Bigg(3\left(a^2-b^2\right)\mathrm{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\Bigg(4\,b^2\,\mathrm{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)$$

$$\mathrm{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\mathrm{Tan}[e+f x]^2,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\right]\Bigg)\mathrm{Tan}[e+f x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)^2\Bigg)-\Bigg(6\,b^3\left(a^2-b^2\right)\mathrm{Tan}[e+f x]$$

$$\left(\frac{1}{3\left(a^2-b^2\right)}4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{2}{3}\left(-\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\right.$$

$$\left.\left.\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\left(a\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)(1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\text{Tan}[e+f\,x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)-$$

$$\left(6\,b^3\left(a^2-b^2\right)(1+n)\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{-1+\frac{1+n}{2}}\right)\Bigg/$$

$$\left(a\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)(1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\text{Tan}[e+f\,x]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)+$$

$$\left(6\,b^2\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{-1+\frac{n}{2}}\right)\Bigg/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left.4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\right)+\left(6\,b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Sec}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{n/2}\right)\Bigg/$$

$$\left(\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left.4 b^2 \,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$
$$\left.\left(a^2-b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(6 b^2 \left(a^2-b^2\right) \text{Tan}[e+f x]\right.$$
$$\left(\frac{1}{3} n \,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2\right.$$
$$\text{Tan}[e+f x]+\frac{1}{3 \left(a^2-b^2\right)}4 b^2 \,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\right.$$
$$\left.\left.\left.\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]\right) \left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$
$$\left(\left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left.4 b^2 \,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$
$$\left.\left(a^2-b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)-\left(12 b^5 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},\right.\right.$$
$$\left.\left.-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]^2 \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\right)\Big/$$
$$\left(a^3 \left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(2 b^2 \,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left(a^2-b^2\right) (1+n) \,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)$$
$$\left.\left.\text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+$$
$$\left(6 b^4 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right.$$
$$\left.\text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]^2 \left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right)\Big/$$
$$\left(a^2 \left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2},1-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$
$$\left.\left.2 b^2 \,\text{AppellF1}\left[\frac{3}{2},-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2 \,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$
$$\left.\left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(6 b^3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},\right.\right.$$

$$-\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\ \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a^3\ \Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+\left(a^2-b^2\right)\ (1+n)$$

$$\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Bigg)\ \text{Tan}[e+f x]^2\Bigg)$$

$$\left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+\Bigg(6\,b^3\ \left(a^2-b^2\right)\ \text{Tan}[e+f x]$$

$$\Bigg(\frac{1}{3\ \left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\ -\ \frac{2}{3}\ \left(-\frac{1}{2}-\frac{n}{2}\right)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\ \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a^3\ \Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\ \left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+$$

$$\Bigg(6\,b^3\ \left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]^2\ \left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{1+n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a^3\ \Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{1}{2}-\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{1}{2}-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\left(a^2-b^2\right)\ (1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\ \left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)-$$

$$\Bigg(3\,b^2\ \left(a^2-b^2\right)\ n\,\text{AppellF1}\Big[\frac{1}{2},\ -\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]^2\ \left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a^2\ \Bigg(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\left(\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left.\left. 2 b^2 \,\text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$

$$\left.\left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\left(3 b^2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right) \Big/$$

$$\left(a^2 \left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left. 2 b^2 \,\text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$

$$\left.\left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\left(3 b^2 \left(a^2-b^2\right) \text{Tan}[e+f x]\right.$$

$$\left(\frac{1}{3} n \,\text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2\right.$$

$$\text{Tan}[e+f x]+\frac{1}{3 \left(a^2-b^2\right)} 2 b^2 \,\text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2,\right.$$

$$\left.\left.\left.\frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\right) \left(1+\text{Tan}[e+f x]^2\right)^{n/2}\right) \Big/$$

$$\left(a^2 \left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right) n \,\text{AppellF1}\left[\frac{3}{2}, 1-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left. 2 b^2 \,\text{AppellF1}\left[\frac{3}{2}, -\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right)$$

$$\left.\left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)+\frac{1}{a^2} \text{Sec}[e+f x]^2$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2}, 1-\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right]+\left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{n}{2}}\right)-\frac{1}{a^3} 2$$

$$b \,\text{Sec}[e+f x]^2$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}-\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right]+\left(1+\text{Tan}[e+f x]^2\right)^{-\frac{1}{2}+\frac{n}{2}}\right)-$$

$$\left(6 b^3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}-\frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right.$$

$$\text{Tan}[e+f x] \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1+n}{2}}$$

$$\left(2 \left(2 b^2 \,\text{AppellF1}\left[\frac{3}{2}, -\frac{1}{2}-\frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right) (1+n)\right.\right.$$

$$\left.\text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}-\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Sec}[e+f x]^2$$

$$\text{Tan}[e+fx]+3\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-\frac{2}{3}\left(-\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\right.$$

$$\left.\left.\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+$$

$$\text{Tan}[e+fx]^2\left(2\,b^2\left(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{7}{2},-\text{Tan}[e+fx]^2,\right.\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-\frac{6}{5}\left(-\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.\left.\frac{1}{2}-\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+$$

$$\left(a^2-b^2\right)(1+n)\left(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+fx]^2,\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-\frac{6}{5}\left(\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-\frac{n}{2},\right.$$

$$\left.\left.\left.\left.\left.1,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)\right)\right)\right)\right)\Big/$$

$$\left(a^3\left(3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(2\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(1+n)\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)\text{Tan}[e+fx]^2\right)^2$$

$$\left.\left(-a^2+b^2\left(1+\text{Tan}[e+fx]^2\right)\right)\right)+\left(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2}-\frac{n}{2},2,\frac{3}{2},\right.\right.$$

$$\left.-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Tan}[e+fx]\left(1+\text{Tan}[e+fx]^2\right)^{\frac{1+n}{2}}$$

$$\left(2\left(4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\right.\right.$$

$$\left.(1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)\text{Sec}[e+fx]^2$$

$$\text{Tan}[e+fx]+3\left(a^2-b^2\right)\left(\frac{1}{3\left(a^2-b^2\right)}4\,b^2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2}-\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+fx]^2,\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-\frac{2}{3}\left(-\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-\right.$$

$$\left.\left.\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+$$

$$\text{Tan}[e+fx]^2\left(4\,b^2\left(\frac{1}{5\left(a^2-b^2\right)}18\,b^2\,\text{AppellF1}\left[\frac{5}{2},-\frac{1}{2}-\frac{n}{2},4,\frac{7}{2},-\text{Tan}[e+fx]^2,\right.\right.\right.$$

$$\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]-\frac{6}{5}\left(-\frac{1}{2}-\frac{n}{2}\right)\mathrm{AppellF1}\Big[\frac{5}{2},$$

$$\frac{1}{2}-\frac{n}{2},\,3,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\Bigg)+$$

$$\left(a^2-b^2\right)\,(1+n)\,\Bigg(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{1}{2}-\frac{n}{2},\,3,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,$$

$$\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]-\frac{6}{5}\left(\frac{1}{2}-\frac{n}{2}\right)\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{3}{2}-\frac{n}{2},$$

$$2,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(3\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2},\,-\frac{1}{2}-\frac{n}{2},\,2,\,\frac{3}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(4\,b^2\,\mathrm{AppellF1}\Big[\frac{3}{2},\,-\frac{1}{2}-\frac{n}{2},\,3,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]+\left(a^2-b^2\right)\,(1+n)$$

$$\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{1}{2}-\frac{n}{2},\,2,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\Bigg)\,\mathrm{Tan}[e+f x]^2\Bigg)^2$$

$$\left(a^2-b^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)^2\Bigg)+\Bigg(3\,b^2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2},\,-\frac{n}{2},\,1,\,\frac{3}{2},$$

$$-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Tan}[e+f x]\,\left(1+\mathrm{Tan}[e+f x]^2\right)^{n/2}$$

$$\Bigg(2\,\Bigg(\left(a^2-b^2\right)n\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-\frac{n}{2},\,1,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$2\,b^2\,\mathrm{AppellF1}\Big[\frac{3}{2},\,-\frac{n}{2},\,2,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\Bigg)\,\mathrm{Sec}[e+f x]^2$$

$$\mathrm{Tan}[e+f x]+3\left(a^2-b^2\right)\Bigg(\frac{1}{3}n\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-\frac{n}{2},\,1,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,$$

$$\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]+\frac{1}{3\left(a^2-b^2\right)}2\,b^2\,\mathrm{AppellF1}\Big[\frac{3}{2},$$

$$-\frac{n}{2},\,2,\,\frac{5}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\Bigg)+$$

$$\mathrm{Tan}[e+f x]^2\,\Bigg(\left(a^2-b^2\right)n\,\Bigg(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\,1-\frac{n}{2},\,2,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,$$

$$\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]-\frac{6}{5}\left(1-\frac{n}{2}\right)\mathrm{AppellF1}\Big[\frac{5}{2},$$

$$2-\frac{n}{2},\,1,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\;\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\Bigg)+$$

$$2\,b^2\,\Bigg(\frac{3}{5}n\,\mathrm{AppellF1}\Big[\frac{5}{2},\,1-\frac{n}{2},\,2,\,\frac{7}{2},\,-\mathrm{Tan}[e+f x]^2,\,\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]$$

$$\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]+\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\,-\frac{n}{2},\,3,\,\frac{7}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Big(a^2\ \Big(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Big(\left(a^2-b^2\right)\ n\ \text{AppellF1}\Big[\frac{3}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+2\,b^2$$

$$\text{AppellF1}\Big[\frac{3}{2},\ -\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Big)\ \text{Tan}[e+f x]^2\Big)^2$$

$$\left(-a^2+b^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Big)-\Big(6\,b^2\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{n}{2},\ 2,\ \frac{3}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Tan}[e+f x]\ \left(1+\text{Tan}[e+f x]^2\right)^{n/2}$$

$$\Big(2\ \Big(\left(a^2-b^2\right)\ n\ \text{AppellF1}\Big[\frac{3}{2},\ 1-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$4\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{n}{2},\ 3,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Big)\ \text{Sec}[e+f x]^2$$

$$\text{Tan}[e+f x]+3\ \left(a^2-b^2\right)\ \Big(\frac{1}{3}\,n\,\text{AppellF1}\Big[\frac{3}{2},\ 1-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{3\ \left(a^2-b^2\right)}4\,b^2\,\text{AppellF1}\Big[\frac{3}{2},$$

$$-\frac{n}{2},\ 3,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)+$$

$$\text{Tan}[e+f x]^2\ \Big(\left(a^2-b^2\right)\ n\ \Big(\frac{1}{5\ \left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\ 1-\frac{n}{2},\ 3,\ \frac{7}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{6}{5}\ \left(1-\frac{n}{2}\right)\ \text{AppellF1}\Big[\frac{5}{2},$$

$$2-\frac{n}{2},\ 2,\ \frac{7}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)+$$

$$4\,b^2\ \Big(\frac{3}{5}\,n\,\text{AppellF1}\Big[\frac{5}{2},\ 1-\frac{n}{2},\ 3,\ \frac{7}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{5\ \left(a^2-b^2\right)}18\,b^2\,\text{AppellF1}\Big[\frac{5}{2},\ -\frac{n}{2},\ 4,\ \frac{7}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Big(\Big(3\ \left(a^2-b^2\right)\ \text{AppellF1}\Big[\frac{1}{2},\ -\frac{n}{2},\ 2,\ \frac{3}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+$$

$$\Big(\left(a^2-b^2\right)\ n\ \text{AppellF1}\Big[\frac{3}{2},\ 1-\frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]+4$$

$$b^2\,\text{AppellF1}\Big[\frac{3}{2},\ -\frac{n}{2},\ 3,\ \frac{5}{2},\ -\text{Tan}[e+f x]^2,\ \frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\Big)$$

$$\left.\left.\left.\text{Tan}[e+f x]^2\right)^2 \left(a^2-b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)\right)\right)$$

Problem 788: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x]^3 \left(a+b\,\text{Sec}[e+f x]\right)^m dx$$

Optimal (type 6, 273 leaves, 8 steps):

$$\frac{\left(a+b\,\text{Sec}[e+f x]\right)^{1+m}\,\text{Tan}[e+f x]}{b f (2+m)}-$$
$$\left(\sqrt{2}\, a (a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-m,\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[e+f x]\right),\frac{b\left(1-\text{Sec}[e+f x]\right)}{a+b}\right]\right.$$
$$\left.\left(a+b\,\text{Sec}[e+f x]\right)^m \left(\frac{a+b\,\text{Sec}[e+f x]}{a+b}\right)^{-m}\text{Tan}[e+f x]\right)\Big/\left(b^2 f (2+m)\sqrt{1+\text{Sec}[e+f x]}\right)+$$
$$\left(\sqrt{2}\left(a^2+b^2 (1+m)\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-m,\frac{3}{2},\frac{1}{2}\left(1-\text{Sec}[e+f x]\right),\frac{b\left(1-\text{Sec}[e+f x]\right)}{a+b}\right]\right.$$
$$\left.\left(a+b\,\text{Sec}[e+f x]\right)^m \left(\frac{a+b\,\text{Sec}[e+f x]}{a+b}\right)^{-m}\text{Tan}[e+f x]\right)\Big/\left(b^2 f (2+m)\sqrt{1+\text{Sec}[e+f x]}\right)$$

Result (type 6, 8908 leaves):

$$-\left(\left(6 (a+b)\,\text{Sec}[e+f x]^3 \left(a+b\,\text{Sec}[e+f x]\right)^m\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m\left(b+\frac{a-a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$
$$\left(\left(\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.\right.$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$
$$\left(3 (a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$
$$2\left((a-b)\, m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$
$$(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/$$

$$\left(-3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$

$$(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$

$$(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right)\Big/$$

$$\left(f\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3\left(-\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}6\,(a+b)\,m\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right.\right.$$

$$\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m\left(-\frac{a\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}-\right.$$

$$\left.\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(a-a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right/$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\left(b+\frac{a-a\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}\right)^{-1+m}$$

$$\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Bigg/\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-2\,\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,\right.$$

$$\left.1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(1+m)$$

$$\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+\Bigg(4\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\left(1-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg)\Bigg/\Bigg(-3\,(a+b)$$

$$\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+2$$

$$\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(4\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-2\,\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,\right.$$

$$1-m,\ \frac{5}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]-$$

$$\left(a+b\right)\left(3+m\right)\operatorname{AppellF1}\left[\frac{3}{2},\ 4+m,\ -m,\ \frac{5}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

$$\left.\left.\left.\frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\right)+$$

$$\frac{1}{\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^4}\,18\left(a+b\right)\operatorname{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2$$

$$\left(\frac{1+\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{1-\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}\right)^m\left(b+\frac{a-a\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}\right)^m$$

$$\left(\left(\operatorname{AppellF1}\left[\frac{1}{2},\ 1+m,\ -m,\ \frac{3}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\right.\right.$$

$$\left.\left(-1+\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^2\right)\Big/$$

$$\left(3\left(a+b\right)\operatorname{AppellF1}\left[\frac{1}{2},\ 1+m,\ -m,\ \frac{3}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]-\right.$$

$$2\left(\left(a-b\right)m\operatorname{AppellF1}\left[\frac{3}{2},\ 1+m,\ 1-m,\ \frac{5}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.\right.$$

$$\left.\frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]-\left(a+b\right)\left(1+m\right)\operatorname{AppellF1}\left[\frac{3}{2},\ 2+m,\ -m,\ \frac{5}{2},\right.$$

$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)+$$

$$\left(4\operatorname{AppellF1}\left[\frac{1}{2},\ 2+m,\ -m,\ \frac{3}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1-\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\right)\Big/\left(-3\left(a+b\right)\operatorname{AppellF1}\left[\frac{1}{2},\ 2+m,\right.\right.$$

$$\left.-m,\ \frac{3}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]+$$

$$2\left(\left(a-b\right)m\operatorname{AppellF1}\left[\frac{3}{2},\ 2+m,\ 1-m,\ \frac{5}{2},\ \operatorname{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) +$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] -$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(3+m)\,\text{AppellF1}\Big[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg) -$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}\,3\,(a+b)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\left(b+\frac{a-a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] -$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) +$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/\left(-3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)-$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}\,6\,(a+b)\,m\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^{-1+m}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}+\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\left(b+\frac{a-a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\left(\left(\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.\right.$$

$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]-(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2}, 2+m, -m, \frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/\left(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 2+m,\right.\right.$$

$$-m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]+$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]-(a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2}, 3+m, -m, \frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)+$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2}, 3+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 3+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 3+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(3+m)\,\text{AppellF1}\Big[\frac{3}{2}, 4+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big) -$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}\,6\,(a+b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\left(b+\frac{a-a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\Bigg(\Bigg(2\,\text{AppellF1}\Big[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/$$

$$\Big(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] -$$

$$2\,\Big((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big) +$$

$$\Bigg(\Bigg(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3}(1+m)$$

$$\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Big/$$

$$\Big(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] -$$

$$2\left((a-b)\, m\, \text{AppellF1}\left[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] - (a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2}, 2+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) -$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Big/\Bigg(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] + 2\left((a-b)\, m\, \text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] - (a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2}, 3+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) +$$

$$\Bigg(4\Bigg(-\frac{1}{3(a+b)}(a-b)\, m\, \text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3}(2+m)\,\text{AppellF1}\left[\frac{3}{2}, 3+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/\Bigg(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] + 2\Bigg((a-b)\, m\, \text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] - (a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2}, 3+m, -m, \frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Bigg)+$$

$$\Bigg(4\,\Bigg(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+$$

$$\frac{1}{3}\,(3+m)\,\text{AppellF1}\Big[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\Bigg)\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]-$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]-(a+b)\,(3+m)\,\text{AppellF1}\Big[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Bigg)-$$

$$\Bigg(\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^2\,\Bigg(-2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,$$

$$1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]-$$

$$(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\Bigg)\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+$$

$$3\,(a+b)\,\Bigg(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{1}{3}\,(1+m)$$

$$\text{AppellF1}\left[\frac{3}{2}, 2+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) - 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$

$$\left((a-b)\,m\left(\frac{1}{5(a+b)} 3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2}, 1+m, 2-m, \frac{7}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}\right.$$

$$\left.(e+f x)\right] + \frac{3}{5}(1+m)\,\text{AppellF1}\left[\frac{5}{2}, 2+m, 1-m, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) -$$

$$(a+b)\,(1+m)\left(-\frac{1}{5(a+b)} 3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2}, 2+m, 1-m, \frac{7}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\right.$$

$$\left.\frac{1}{2}(e+f x)\right] + \frac{3}{5}(2+m)\,\text{AppellF1}\left[\frac{5}{2}, 3+m, -m, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right) \Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] -\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] - (a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2}, 2+m, -m, \frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)^2 -$$

$$\left(4\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.$$

$$\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m,\right.\right.\right.$$

$$\frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big] -$$

$$(a+b)(2+m)\,\mathrm{AppellF1}\Big[\frac{3}{2}, 3+m, -m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right] -$$

$$3(a+b)\Bigg(-\frac{1}{3(a+b)}(a-b)\,m\,\mathrm{AppellF1}\Big[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right] + \frac{1}{3}(2+m)$$

$$\mathrm{AppellF1}\Big[\frac{3}{2}, 3+m, -m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg) + 2\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\Bigg((a-b)\,m\Bigg(\frac{1}{5(a+b)}3(a-b)(1-m)\,\mathrm{AppellF1}\Big[\frac{5}{2}, 2+m, 2-m, \frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\Big[\frac{1}{2}$$

$$(e+fx)\Big] + \frac{3}{5}(2+m)\,\mathrm{AppellF1}\Big[\frac{5}{2}, 3+m, 1-m, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg) -$$

$$(a+b)(2+m)\Bigg(-\frac{1}{5(a+b)}3(a-b)\,m\,\mathrm{AppellF1}\Big[\frac{5}{2}, 3+m, 1-m, \frac{7}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2, \frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\Big[$$

$$\frac{1}{2}(e+fx)\Big] + \frac{3}{5}(3+m)\,\mathrm{AppellF1}\Big[\frac{5}{2}, 4+m, -m, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(-3(a+b)\,\mathrm{AppellF1}\Big[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big] +$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2-$$

$$\Bigg(4\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\Bigg(-2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]+3\,(a+b)\left(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)-$$

$$2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg((a-b)\,m\left(\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2},3+m,2-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right.$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{3}{5}(3+m)\,\text{AppellF1}\left[\frac{5}{2},4+m,1-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)-(a+b)\,(3+m)$$

$$\left(-\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},\,4+m,\,1-m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{3}{5}\,(4+m)\,\text{AppellF1}\left[\frac{5}{2},\,5+m,\,-m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 789: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f\,x]^2\,(a+b\,\text{Sec}[e+f\,x])^m\,dx$$

Optimal (type 6, 220 leaves, 7 steps):

$$\left(\sqrt{2}\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2},\,-1-m,\,\frac{3}{2},\,\frac{1}{2}\,(1-\text{Sec}[e+f\,x]),\,\frac{b\,(1-\text{Sec}[e+f\,x])}{a+b}\right]\,(a+b\,\text{Sec}[e+f\,x])^m\left(\frac{a+b\,\text{Sec}[e+f\,x]}{a+b}\right)^{-m}\text{Tan}[e+f\,x]\right)\Big/\left(b\,f\,\sqrt{1+\text{Sec}[e+f\,x]}\right)-\left(\sqrt{2}\,a\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2},\,-m,\,\frac{3}{2},\,\frac{1}{2}\,(1-\text{Sec}[e+f\,x]),\,\frac{b\,(1-\text{Sec}[e+f\,x])}{a+b}\right]\,(a+b\,\text{Sec}[e+f\,x])^m\left(\frac{a+b\,\text{Sec}[e+f\,x]}{a+b}\right)^{-m}\text{Tan}[e+f\,x]\right)\Big/\left(b\,f\,\sqrt{1+\text{Sec}[e+f\,x]}\right)$$

Result (type 6, 5564 leaves):

$$\Bigg(6\,(a+b)\,(b+a\,\text{Cos}[e+f\,x])^m\,\text{Sec}[e+f\,x]^{2+m}\,(a+b\,\text{Sec}[e+f\,x])^m\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2}, 2+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\Bigg(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-$$

$$(a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2}, 3+m, -m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(f\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg(-\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}12(a+b)(b+a\,\text{Cos}[e+f x])^m$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Sec}[e+f x]^m\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2}\,3(a+b)\,(b+a\,\text{Cos}[e+f x])^m\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$

$$\text{Sec}[e+f x]^m\left(\left(\left(\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/\right.\right.$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(-3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)-$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2}\,6\,a\,(a+b)\,m\,(b+a\,\text{Cos}[e+f x])^{-1+m}\,\text{Sec}[e+f x]^m$$

$$\text{Sin}[e+f x]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

$$\left(\left(\left(\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.\right.\right.$$

$$\left.\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/\right.$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(-3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2}\,6\,(a+b)\,m\,(b+a\,\text{Cos}[e+f x])^m\,\text{Sec}[e+f x]^{1+m}$$

$$\text{Sin}[e+f x]\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

$$\left(\left(\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.\right.$$

$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(-3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)+$$

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2}\,6\,(a+b)\,\left(b+a\,\text{Cos}[e+f\,x]\right)^m\,\text{Sec}[e+f\,x]^m$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\left(\left(\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+$$

$$\left(\left(-\frac{1}{3\,(a+b)}\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$

$$\frac{1}{3}\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,\left(-1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Bigg]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(2\left(-\frac{1}{3(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$\frac{1}{3}(2+m)\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$

$$\left(-3(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

$$\left(\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(-1+\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\left(2\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}(e+f x)\Big]+3(a+b)\left(-\frac{1}{3(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\right.\right.$$

$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left((-a+b)\,m\left(\frac{1}{5(a+b)}3(a-b)(1-m)\,\text{AppellF1}\left[\frac{5}{2},1+m,2-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(1+m)\,\text{AppellF1}\left[\frac{5}{2},2+m,1-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+\right.$$

$$\left.\left.\left.\left.(a+b)(1+m)\left(-\frac{1}{5(a+b)}3(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},2+m,1-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(2+m)\,\text{AppellF1}\left[\frac{5}{2},3+m,-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+2\left((-a+b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right.$$

$$\left(2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\ \frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\Bigg)\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(e+f x\right)\Big]-3\left(a+b\right)\left(-\frac{1}{3\left(a+b\right)}\left(a-b\right)m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\right.$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+\frac{1}{3}\left(2+m\right)\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(\left(a-b\right)m\left(\frac{1}{5\left(a+b\right)}3\left(a-b\right)\left(1-m\right)\text{AppellF1}\Big[\frac{5}{2},2+m,2-m,\right.\right.$$

$$\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(e+f x\right)\Big]+\frac{3}{5}\left(2+m\right)\text{AppellF1}\Big[\frac{5}{2},3+m,1-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)-$$

$$\left(a+b\right)\left(2+m\right)\left(-\frac{1}{5\left(a+b\right)}3\left(a-b\right)m\,\text{AppellF1}\Big[\frac{5}{2},3+m,1-m,\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(e+f x\right)\Big]+\frac{3}{5}\left(3+m\right)\text{AppellF1}\Big[\frac{5}{2},4+m,-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,$$

$$\left.\left.\left.\left.\left.\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]\ \text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(-3\left(a+b\right)\text{AppellF1}\Big[\frac{1}{2},2+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]+\right.$$

$$2\left(\left(a-b\right)m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

$$\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\Big]-\left(a+b\right)\left(2+m\right)\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Problem 790: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+fx]\,(a+b\,\text{Sec}[e+fx])^m\,dx$$

Optimal (type 6, 103 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-m,\frac{3}{2},\frac{1}{2}(1-\text{Sec}[e+fx]),\frac{b\,(1-\text{Sec}[e+fx])}{a+b}\right]\right.$$
$$\left.(a+b\,\text{Sec}[e+fx])^m\left(\frac{a+b\,\text{Sec}[e+fx]}{a+b}\right)^{-m}\text{Tan}[e+fx]\right)\Big/\left(f\sqrt{1+\text{Sec}[e+fx]}\right)$$

Result (type 6, 2828 leaves):

$$-\Bigg(\Bigg(\Bigg(6\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$
$$(b+a\,\text{Cos}[e+fx])^m\,\text{Sec}[e+fx]^{1+m}\,(a+b\,\text{Sec}[e+fx])^m$$
$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Big/\left(f\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right.$$
$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$
$$2\Bigg(-(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$
$$(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)$$
$$\Bigg(\Bigg(6\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$
$$(b+a\,\text{Cos}[e+fx])^m\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Sec}[e+fx]^m\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Big/$$
$$\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+2\left(-(a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\right.\right.\right.$$

$$\left.(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+(a+b)\,(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,\right.$$

$$\left.\left.\left.-m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)-$$

$$\left(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$

$$\left.(b+a\,\mathrm{Cos}[e+f\,x])^m\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\mathrm{Sec}[e+f\,x]^m\right)\Big/\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right.$$

$$\left(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(-(a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+(a+b)\,(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)+$$

$$\left(6\,a\,(a+b)\,m\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$

$$(b+a\,\mathrm{Cos}[e+f\,x])^{-1+m}\,\mathrm{Sec}[e+f\,x]^m\,\mathrm{Sin}[e+f\,x]$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/\left(\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right.$$

$$\left(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left(-(a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+(a+b)\,(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(6\,(a+b)\,m\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$(b+a\,\text{Cos}[e+fx])^m\,\text{Sec}[e+fx]^{1+m}\,\text{Sin}[e+fx]$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg(-(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]+(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},2+m,-m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)-$$

$$\Bigg(6\,(a+b)\,(b+a\,\text{Cos}[e+fx])^m\,\text{Sec}[e+fx]^m\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\Bigg(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]+$$

$$\frac{1}{3}(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Bigg/\Bigg(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg(-(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]+(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},2+m,-m,\frac{5}{2},$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\ \frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(6\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$(b+a\,\text{Cos}[e+f\,x])^m\,\text{Sec}[e+f\,x]^m\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]$$

$$\Bigg(2\,\Bigg(-(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\right.$$

$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+3\,(a+b)\,\Bigg(-\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\right.$$

$$\left.\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{1}{3}\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)+$$

$$2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Bigg(-(a-b)\,m\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2},\,1+m,\right.$$

$$\left.2-m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{3}{5}\,(1+m)\,\text{AppellF1}\left[\frac{5}{2},\,2+m,\,1-m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)+(a+b)$$

$$(1+m)\,\Bigg(-\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},\,2+m,\,1-m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+\frac{3}{5}\,(2+m)$$

$$\text{AppellF1}\left[\frac{5}{2},3+m,-m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\right)\right)\Big/\left(\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right.$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+\right.$$

$$2\left(-(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$\left.\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\right)\right)\right)$$

Problem 822: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\text{Cos}[c+dx]^{5/2}\,(a+b\,\text{Sec}[c+dx])}\,dx$$

Optimal (type 4, 77 leaves, 7 steps):

$$-\frac{2\,\text{EllipticE}\left[\frac{1}{2}(c+dx),2\right]}{b\,d}-\frac{2\,a\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+dx),2\right]}{b\,(a+b)\,d}+\frac{2\,\text{Sin}[c+dx]}{b\,d\,\sqrt{\text{Cos}[c+dx]}}$$

Result (type 4, 197 leaves):

$$\frac{1}{2\,b\,d}\left(-\frac{6\,a\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+dx),2\right]}{a+b}-\right.$$

$$\frac{2\,b\left(2\,\text{EllipticF}\left[\frac{1}{2}(c+dx),2\right]-\frac{2\,b\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+dx),2\right]}{a+b}\right)}{a}+$$

$$\frac{4\,\text{Sin}[c+dx]}{\sqrt{\text{Cos}[c+dx]}}+\left(2\left(2\,a\,b\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Cos}[c+dx]}\right],-1\right]-\right.\right.$$

$$2\,b\,(a+b)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Cos}[c+dx]}\right],-1\right]+\left(a^2-2\,b^2\right)$$

$$\left.\left.\left.\text{EllipticPi}\left[-\frac{a}{b},-\text{ArcSin}\left[\sqrt{\text{Cos}[c+dx]}\right],-1\right]\right)\text{Sin}[c+dx]\right)\Big/\left(a\,b\,\sqrt{\text{Sin}[c+dx]^2}\right)\right)$$

Problem 823: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Cos}[c+d x]^{7/2}\,(a+b\,\text{Sec}[c+d x])}\,dx$$

Optimal (type 4, 128 leaves, 11 steps):

$$\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}(c+d x),2\right]}{b^2 d}+\frac{2\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]}{3\,b\,d}+\frac{2\,a^2\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+d x),2\right]}{b^2\,(a+b)\,d}+\frac{2\,\text{Sin}[c+d x]}{3\,b\,d\,\text{Cos}[c+d x]^{3/2}}-\frac{2\,a\,\text{Sin}[c+d x]}{b^2\,d\,\sqrt{\text{Cos}[c+d x]}}$$

Result (type 4, 257 leaves):

$$\frac{1}{6\,b^2\,d}\left(\frac{2\,(9 a^2+2 b^2)\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+d x),2\right]}{a+b}+8\,b\left(2\,\text{EllipticF}\left[\frac{1}{2}(c+d x),2\right]-\frac{2\,b\,\text{EllipticPi}\left[\frac{2a}{a+b},\frac{1}{2}(c+d x),2\right]}{a+b}\right)+\left(3\,\text{Cos}[2(c+d x)]\left(-4\,a\,b\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\text{Cos}[c+d x]}\right],-1\right]+4\,b\,(a+b)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\text{Cos}[c+d x]}\right],-1\right]-2\,(a^2-2 b^2)\,\text{EllipticPi}\left[-\frac{a}{b},-\text{ArcSin}\left[\sqrt{\text{Cos}[c+d x]}\right],-1\right]\right)\text{Sin}[c+d x]\right)\Big/\left(b\sqrt{1-\text{Cos}[c+d x]^2}\,\left(-1+2\,\text{Cos}[c+d x]^2\right)\right)\right)+\frac{\sqrt{\text{Cos}[c+d x]}\left(-\frac{2\,a\,\text{Tan}[c+d x]}{b^2}+\frac{2\,\text{Sec}[c+d x]\,\text{Tan}[c+d x]}{3\,b}\right)}{d}$$

Problem 837: Unable to integrate problem.

$$\int \text{Cos}[c+d x]^{5/2}\sqrt{a+b\,\text{Sec}[c+d x]}\,dx$$

Optimal (type 4, 244 leaves, 10 steps):

$$-\frac{4\,b\,\left(a^2-b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{15\,a^2\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$

$$\left(2\,\left(9\,a^2-2\,b^2\right)\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(15\,a^2\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\right)+\frac{2\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{15\,a\,d}+$$

$$\frac{2\,\mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{5\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{5/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,dx$$

Problem 838: Unable to integrate problem.

$$\int \mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 192 leaves, 9 steps):

$$\frac{2\,\left(a^2-b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{3\,a\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$

$$\frac{2\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{3\,a\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}}+$$

$$\frac{2\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{3\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,dx$$

Problem 839: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\,dx$$

Optimal (type 4, 67 leaves, 4 steps):

$$\frac{2\sqrt{\text{Cos}[c+d\,x]}\ \text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\ \frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}$$

Result (type 4, 198 leaves):

$$\left(\sqrt{\text{Cos}[c+d\,x]}\ \text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2 \sqrt{a+b\,\text{Sec}[c+d\,x]}\left(\text{i}\ \text{EllipticE}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]-\text{i}\ \text{EllipticF}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]+\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\ \text{Sin}[c+d\,x]\right)\right)\Bigg/\left(d\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)$$

Problem 840: Unable to integrate problem.

$$\int\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 138 leaves, 8 steps):

$$\frac{2\,a\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\ \frac{2\,a}{a+b}\right]}{d\sqrt{\text{Cos}[c+d\,x]}\ \sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,b\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\ \text{EllipticPi}\left[2,\ \frac{1}{2}\,(c+d\,x),\ \frac{2\,a}{a+b}\right]}{d\sqrt{\text{Cos}[c+d\,x]}\ \sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\sqrt{\text{Cos}[c+d\,x]}}\,dx$$

Problem 841: Attempted integration timed out after 120 seconds.

$$\int\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}}{\text{Cos}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 4, 237 leaves, 13 steps):

$$\frac{b\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{a\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}}-$$
$$\frac{\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}+\frac{\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 1, 1 leaves):

???

Problem 842: Unable to integrate problem.

$$\int \text{Cos}[c+d\,x]^{7/2}\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,dx$$

Optimal (type 4, 303 leaves, 11 steps):

$$\frac{2\,(25\,a^4-31\,a^2\,b^2+6\,b^4)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{105\,a^2\,d\,\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$
$$\left(4\,b\,(41\,a^2-3\,b^2)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)\Big/$$
$$\left(105\,a^2\,d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\right)+\frac{2\,(25\,a^2+3\,b^2)\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{105\,a\,d}+$$
$$\frac{16\,b\,\text{Cos}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{35\,d}+$$
$$\frac{2\,a\,\text{Cos}[c+d\,x]^{5/2}\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{7\,d}$$

Result (type 8, 27 leaves):

$$\int \text{Cos}[c+d\,x]^{7/2}\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,dx$$

Problem 843: Unable to integrate problem.

$$\int \text{Cos}[c+d\,x]^{5/2}\,(a+b\,\text{Sec}[c+d\,x])^{3/2}\,dx$$

Optimal (type 4, 240 leaves, 10 steps):

$$\frac{2\,b\,\left(a^2-b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]}{5\,a\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$

$$\left(2\,\left(3\,a^2+b^2\right)\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)\Big/$$

$$\left(5\,a\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\right)+\frac{4\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{5\,d}+$$

$$\frac{2\,a\,\mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{5\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{5/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Problem 844: Unable to integrate problem.

$$\int \mathrm{Cos}[c+d\,x]^{3/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 4, 187 leaves, 9 steps):

$$\frac{2\,\left(a^2-b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]}{3\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$

$$\frac{8\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,\left(c+d\,x\right),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{3\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}}+$$

$$\frac{2\,a\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{3\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{3/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Problem 845: Unable to integrate problem.

$$\int \sqrt{\mathrm{Cos}[c+d\,x]}\;\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Optimal (type 4, 209 leaves, 12 steps):

$$\frac{2\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$
$$\frac{2\,b^2\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$
$$\frac{2\,a\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}{d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}$$

Result (type 8, 27 leaves):

$$\int\sqrt{\text{Cos}[c+d\,x]}\,\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}\,dx$$

Problem 846: Unable to integrate problem.

$$\int\frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\sqrt{\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 249 leaves, 13 steps):

$$\frac{\left(2\,a^2+b^2\right)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+$$
$$\frac{3\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-$$
$$\frac{b\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}{d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}+$$
$$\frac{b\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int\frac{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}{\sqrt{\text{Cos}[c+d\,x]}}\,dx$$

Problem 847: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Sec}[c+d\,x])^{3/2}}{\text{Cos}[c+d\,x]^{3/2}}\,dx$$

Optimal (type 4, 299 leaves, 14 steps):

$$\frac{7\,a\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]}{4\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{\left(3\,a^2+4\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]}{4\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\frac{5\,a\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{4\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}+\frac{b\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{2\,d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{5\,a\,\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{4\,d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{(a+b\,\text{Sec}[c+d\,x])^{3/2}}{\text{Cos}[c+d\,x]^{3/2}}\,dx$$

Problem 848: Unable to integrate problem.

$$\int \text{Cos}[c+d\,x]^{9/2}\,(a+b\,\text{Sec}[c+d\,x])^{5/2}\,dx$$

Optimal (type 4, 363 leaves, 12 steps):

$$\frac{4\,b\,\left(57\,a^4-62\,a^2\,b^2+5\,b^4\right)\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{315\,a^2\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$
$$\left(2\,\left(147\,a^4+279\,a^2\,b^2-10\,b^4\right)\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)\Big/$$
$$\left(315\,a^2\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\right)+$$
$$\frac{2\,b\,\left(163\,a^2+5\,b^2\right)\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{315\,a\,d}+$$
$$\frac{2\,\left(49\,a^2+75\,b^2\right)\mathrm{Cos}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{315\,d}+$$
$$\frac{38\,a\,b\,\mathrm{Cos}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{63\,d}+$$
$$\frac{2\,a^2\,\mathrm{Cos}[c+d\,x]^{7/2}\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{9\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{9/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Problem 849: Unable to integrate problem.

$$\int \mathrm{Cos}[c+d\,x]^{7/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Optimal (type 4, 303 leaves, 11 steps):

$$\frac{2\,\left(5\,a^4-2\,a^2\,b^2-3\,b^4\right)\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{21\,a\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$
$$\left(2\,b\,\left(29\,a^2+3\,b^2\right)\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)\Big/$$
$$\left(21\,a\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\right)+\frac{2\,\left(5\,a^2+9\,b^2\right)\sqrt{\mathrm{Cos}[c+d\,x]}\;\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{21\,d}+$$
$$\frac{6\,a\,b\,\mathrm{Cos}[c+d\,x]^{3/2}\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{7\,d}+$$
$$\frac{2\,a^2\,\mathrm{Cos}[c+d\,x]^{5/2}\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{7\,d}$$

Result (type 8, 27 leaves):

$$\int \mathrm{Cos}[c+d\,x]^{7/2}\,\left(a+b\,\mathrm{Sec}[c+d\,x]\right)^{5/2}\,dx$$

Problem 850: Unable to integrate problem.

$$\int \text{Cos}[c+d x]^{5/2} (a+b \text{Sec}[c+d x])^{5/2} \, dx$$

Optimal (type 4, 239 leaves, 10 steps):

$$\frac{16 b (a^2-b^2) \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticF}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{15 d \sqrt{\text{Cos}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]}} + \left(2 (9 a^2+23 b^2) \sqrt{\text{Cos}[c+d x]} \text{EllipticE}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \text{Sec}[c+d x]}\right) \Big/ \left(15 d \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}}\right) + \frac{22 a b \sqrt{\text{Cos}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]} \text{Sin}[c+d x]}{15 d} + \frac{2 a^2 \text{Cos}[c+d x]^{3/2} \sqrt{a+b \text{Sec}[c+d x]} \text{Sin}[c+d x]}{5 d}$$

Result (type 8, 27 leaves):

$$\int \text{Cos}[c+d x]^{5/2} (a+b \text{Sec}[c+d x])^{5/2} \, dx$$

Problem 851: Unable to integrate problem.

$$\int \text{Cos}[c+d x]^{3/2} (a+b \text{Sec}[c+d x])^{5/2} \, dx$$

Optimal (type 4, 262 leaves, 13 steps):

$$\frac{2 a (a^2+2 b^2) \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticF}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{3 d \sqrt{\text{Cos}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]}} + \frac{2 b^3 \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}} \text{EllipticPi}\left[2, \frac{1}{2} (c+d x), \frac{2 a}{a+b}\right]}{d \sqrt{\text{Cos}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]}} + \frac{14 a b \sqrt{\text{Cos}[c+d x]} \text{EllipticE}\left[\frac{1}{2} (c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \text{Sec}[c+d x]}}{3 d \sqrt{\frac{b+a \text{Cos}[c+d x]}{a+b}}} + \frac{2 a^2 \sqrt{\text{Cos}[c+d x]} \sqrt{a+b \text{Sec}[c+d x]} \text{Sin}[c+d x]}{3 d}$$

Result (type 8, 27 leaves):

$$\int \text{Cos}[c+d x]^{3/2} (a+b \text{Sec}[c+d x])^{5/2} \, dx$$

Problem 852: Unable to integrate problem.

$$\int \sqrt{\text{Cos}[c+d x]}\,(a+b\,\text{Sec}[c+d x])^{5/2}\,dx$$

Optimal (type 4, 263 leaves, 13 steps):

$$\frac{b\,(4 a^2+b^2)\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{d\sqrt{\text{Cos}[c+d x]}\,\sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{5 a b^2\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{d\sqrt{\text{Cos}[c+d x]}\,\sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{1}{d\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}}\left(2 a^2-b^2\right)\sqrt{\text{Cos}[c+d x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d x]}+\frac{b^2\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{d\sqrt{\text{Cos}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \sqrt{\text{Cos}[c+d x]}\,(a+b\,\text{Sec}[c+d x])^{5/2}\,dx$$

Problem 853: Unable to integrate problem.

$$\int \frac{(a+b\,\text{Sec}[c+d x])^{5/2}}{\sqrt{\text{Cos}[c+d x]}}\,dx$$

Optimal (type 4, 314 leaves, 14 steps):

$$\frac{a\,(8 a^2+11 b^2)\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{4 d\sqrt{\text{Cos}[c+d x]}\,\sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{b\,(15 a^2+4 b^2)\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{4 d\sqrt{\text{Cos}[c+d x]}\,\sqrt{a+b\,\text{Sec}[c+d x]}}-\frac{9 a b\sqrt{\text{Cos}[c+d x]}\,\text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d x]}}{4 d\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}}+\frac{b^2\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{2 d\,\text{Cos}[c+d x]^{3/2}}+\frac{9 a b\sqrt{a+b\,\text{Sec}[c+d x]}\,\text{Sin}[c+d x]}{4 d\sqrt{\text{Cos}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{(a + b \operatorname{Sec}[c + d x])^{5/2}}{\sqrt{\operatorname{Cos}[c + d x]}} \, dx$$

Problem 854: Unable to integrate problem.

$$\int \frac{(a + b \operatorname{Sec}[c + d x])^{5/2}}{\operatorname{Cos}[c + d x]^{3/2}} \, dx$$

Optimal (type 4, 369 leaves, 15 steps):

$$\frac{b \left(59 a^2 + 16 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2} (c + d x), \frac{2 a}{a+b}\right]}{24 d \sqrt{\operatorname{Cos}[c + d x]} \sqrt{a + b \operatorname{Sec}[c + d x]}} +$$

$$\frac{5 a \left(a^2 + 4 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticPi}\left[2, \frac{1}{2} (c + d x), \frac{2 a}{a+b}\right]}{8 d \sqrt{\operatorname{Cos}[c + d x]} \sqrt{a + b \operatorname{Sec}[c + d x]}} -$$

$$\left(\left(33 a^2 + 16 b^2\right) \sqrt{\operatorname{Cos}[c + d x]} \operatorname{EllipticE}\left[\frac{1}{2} (c + d x), \frac{2 a}{a + b}\right] \sqrt{a + b \operatorname{Sec}[c + d x]}\right) \Big/$$

$$\left(24 d \sqrt{\frac{b + a \operatorname{Cos}[c + d x]}{a + b}}\right) + \frac{b^2 \sqrt{a + b \operatorname{Sec}[c + d x]} \operatorname{Sin}[c + d x]}{3 d \operatorname{Cos}[c + d x]^{5/2}} +$$

$$\frac{13 a b \sqrt{a + b \operatorname{Sec}[c + d x]} \operatorname{Sin}[c + d x]}{12 d \operatorname{Cos}[c + d x]^{3/2}} + \frac{\left(33 a^2 + 16 b^2\right) \sqrt{a + b \operatorname{Sec}[c + d x]} \operatorname{Sin}[c + d x]}{24 d \sqrt{\operatorname{Cos}[c + d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{(a + b \operatorname{Sec}[c + d x])^{5/2}}{\operatorname{Cos}[c + d x]^{3/2}} \, dx$$

Problem 855: Unable to integrate problem.

$$\int \frac{\operatorname{Cos}[c + d x]^{5/2}}{\sqrt{a + b \operatorname{Sec}[c + d x]}} \, dx$$

Optimal (type 4, 249 leaves, 10 steps):

$$-\frac{2\,b\,\left(7\,a^2+8\,b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{15\,a^3\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}+$$
$$\left(2\,\left(9\,a^2+8\,b^2\right)\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\right)\Bigg/$$
$$\left(15\,a^3\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\right)-\frac{8\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{15\,a^2\,d}+$$
$$\frac{2\,\mathrm{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{5\,a\,d}$$

Result (type 8, 27 leaves):

$$\int\frac{\mathrm{Cos}[c+d\,x]^{5/2}}{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Problem 856: Unable to integrate problem.

$$\int\frac{\mathrm{Cos}[c+d\,x]^{3/2}}{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 195 leaves, 9 steps):

$$\frac{2\,\left(a^2+2\,b^2\right)\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}\;\mathrm{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]}{3\,a^2\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}-$$
$$\frac{4\,b\,\sqrt{\mathrm{Cos}[c+d\,x]}\;\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}{3\,a^2\,d\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{a+b}}}+$$
$$\frac{2\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}\;\mathrm{Sin}[c+d\,x]}{3\,a\,d}$$

Result (type 8, 27 leaves):

$$\int\frac{\mathrm{Cos}[c+d\,x]^{3/2}}{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Problem 857: Attempted integration timed out after 120 seconds.

$$\int\frac{\sqrt{\mathrm{Cos}[c+d\,x]}}{\sqrt{a+b\,\mathrm{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 142 leaves, 8 steps):

$$-\frac{2\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{a\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}{a\,d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}$$

Result (type 1, 1 leaves):

???

Problem 858: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 67 leaves, 4 steps):

$$\frac{2\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 4, 102 leaves):

$$-\frac{2\,i\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\;\text{EllipticF}\left[i\,\text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{-a+b}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Problem 859: Unable to integrate problem.

$$\int \frac{1}{\text{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Optimal (type 4, 68 leaves, 4 steps):

$$\frac{2\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticPi}\left[2,\,\frac{1}{2}\,(c+d\,x),\,\frac{2\,a}{a+b}\right]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\text{Cos}[c+d\,x]^{3/2}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}\,dx$$

Problem 860: Unable to integrate problem.

$$\int \frac{1}{\text{Cos}[c+d x]^{5/2} \sqrt{a+b\,\text{Sec}[c+d x]}}\,dx$$

Optimal (type 4, 246 leaves, 13 steps):

$$\frac{\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{d \sqrt{\text{Cos}[c+d x]}\ \sqrt{a+b\,\text{Sec}[c+d x]}}-\frac{a \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\ \text{EllipticPi}\left[2,\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{b\,d \sqrt{\text{Cos}[c+d x]}\ \sqrt{a+b\,\text{Sec}[c+d x]}}-\frac{\sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right] \sqrt{a+b\,\text{Sec}[c+d x]}}{b\,d \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}}+\frac{\sqrt{a+b\,\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{b\,d \sqrt{\text{Cos}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\text{Cos}[c+d x]^{5/2} \sqrt{a+b\,\text{Sec}[c+d x]}}\,dx$$

Problem 861: Unable to integrate problem.

$$\int \frac{1}{\text{Cos}[c+d x]^{7/2} \sqrt{a+b\,\text{Sec}[c+d x]}}\,dx$$

Optimal (type 4, 312 leaves, 14 steps):

$$-\frac{a \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\ \text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{4\,b\,d \sqrt{\text{Cos}[c+d x]}\ \sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{\left(3 a^2+4 b^2\right) \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\ \text{EllipticPi}\left[2,\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{4\,b^2\,d \sqrt{\text{Cos}[c+d x]}\ \sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{3 a \sqrt{\text{Cos}[c+d x]}\ \text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right] \sqrt{a+b\,\text{Sec}[c+d x]}}{4\,b^2\,d \sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}}+\frac{\sqrt{a+b\,\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{2\,b\,d\,\text{Cos}[c+d x]^{3/2}}-\frac{3 a \sqrt{a+b\,\text{Sec}[c+d x]}\ \text{Sin}[c+d x]}{4\,b^2\,d \sqrt{\text{Cos}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\text{Cos}[c+d x]^{7/2} \sqrt{a+b\,\text{Sec}[c+d x]}}\,dx$$

Problem 862: Unable to integrate problem.

$$\int \frac{\text{Cos}[c+d\,x]^{5/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 360 leaves, 11 steps):

$$-\frac{8\,b\,\left(a^2+4\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{5\,a^4\,d\,\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\left(2\left(3\,a^4+8\,a^2\,b^2-16\,b^4\right)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)\Bigg/\left(5\,a^4\left(a^2-b^2\right)d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\right)+\frac{2\,b^2\,\text{Cos}[c+d\,x]^{3/2}\,\text{Sin}[c+d\,x]}{a\left(a^2-b^2\right)d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\frac{2\,b\left(3\,a^2-8\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{5\,a^3\left(a^2-b^2\right)d}+\frac{2\left(a^2-6\,b^2\right)\text{Cos}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{5\,a^2\left(a^2-b^2\right)d}$$

Result (type 8, 27 leaves):

$$\int \frac{\text{Cos}[c+d\,x]^{5/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Problem 863: Unable to integrate problem.

$$\int \frac{\text{Cos}[c+d\,x]^{3/2}}{\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 289 leaves, 10 steps):

$$\frac{2\left(a^2+8\,b^2\right)\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{3\,a^3\,d\,\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\left(2\,b\left(5\,a^2-8\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\;\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)\Bigg/\left(3\,a^3\left(a^2-b^2\right)d\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\right)+\frac{2\,b^2\sqrt{\text{Cos}[c+d\,x]}\;\text{Sin}[c+d\,x]}{a\left(a^2-b^2\right)d\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\left(a^2-4\,b^2\right)\sqrt{\text{Cos}[c+d\,x]}\;\sqrt{a+b\,\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]}{3\,a^2\left(a^2-b^2\right)d}$$

Result (type 8, 27 leaves):

$$\int \frac{\text{Cos}[c+d x]^{3/2}}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Problem 864: Unable to integrate problem.

$$\int \frac{\sqrt{\text{Cos}[c+d x]}}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 214 leaves, 9 steps):

$$-\frac{4\,b\,\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{a^2\,d\,\sqrt{\text{Cos}[c+d x]}\;\sqrt{a+b\,\text{Sec}[c+d x]}}+\left(2\left(a^2-2 b^2\right)\sqrt{\text{Cos}[c+d x]}\;\text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d x]}\right)\Big/\left(a^2\left(a^2-b^2\right)d\,\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\right)+\frac{2\,b^2\,\text{Sin}[c+d x]}{a\left(a^2-b^2\right)d\,\sqrt{\text{Cos}[c+d x]}\;\sqrt{a+b\,\text{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{\sqrt{\text{Cos}[c+d x]}}{(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Problem 865: Unable to integrate problem.

$$\int \frac{1}{\sqrt{\text{Cos}[c+d x]}\;(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 200 leaves, 9 steps):

$$\frac{2\,\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}\;\text{EllipticF}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]}{a\,d\,\sqrt{\text{Cos}[c+d x]}\;\sqrt{a+b\,\text{Sec}[c+d x]}}+\frac{2\,b\,\sqrt{\text{Cos}[c+d x]}\;\text{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d x]}}{a\left(a^2-b^2\right)d\,\sqrt{\frac{b+a\,\text{Cos}[c+d x]}{a+b}}}-\frac{2\,b\,\text{Sin}[c+d x]}{\left(a^2-b^2\right)d\,\sqrt{\text{Cos}[c+d x]}\;\sqrt{a+b\,\text{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\sqrt{\text{Cos}[c+d x]}\;(a+b\,\text{Sec}[c+d x])^{3/2}}\,dx$$

Problem 866: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\mathrm{Cos}[c+d x]^{3/2}\,(a+b\,\mathrm{Sec}[c+d x])^{3/2}}\,dx$$

Optimal (type 4, 126 leaves, 6 steps):

$$-\frac{2\sqrt{\mathrm{Cos}[c+d x]}\ \mathrm{EllipticE}\left[\frac{1}{2}(c+d x),\frac{2 a}{a+b}\right]\sqrt{a+b\,\mathrm{Sec}[c+d x]}}{\left(a^2-b^2\right) d\sqrt{\frac{b+a\,\mathrm{Cos}[c+d x]}{a+b}}}+\frac{2 a\,\mathrm{Sin}[c+d x]}{\left(a^2-b^2\right) d\sqrt{\mathrm{Cos}[c+d x]}\ \sqrt{a+b\,\mathrm{Sec}[c+d x]}}$$

Result (type 4, 1845 leaves):

$$\frac{2 a\left(b+a\,\mathrm{Cos}[c+d x]\right)\mathrm{Sin}[c+d x]}{\left(a^2-b^2\right) d\,\mathrm{Cos}[c+d x]^{3/2}\left(a+b\,\mathrm{Sec}[c+d x]\right)^{3/2}}-$$

$$\left(\left(b+a\,\mathrm{Cos}[c+d x]\right)^{5/2}\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Sec}[c+d x]\right.$$

$$\sqrt{1+\mathrm{Sec}[c+d x]}\ \left(\mathrm{i}\ \mathrm{EllipticE}\left[\mathrm{i}\ \mathrm{ArcSinh}\left[\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\frac{-a+b}{a+b}\right]-\right.$$

$$\mathrm{i}\ \mathrm{EllipticF}\left[\mathrm{i}\ \mathrm{ArcSinh}\left[\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\frac{-a+b}{a+b}\right]+$$

$$\left.\left.\sqrt{\frac{1}{1+\mathrm{Cos}[c+d x]}}\ \sqrt{\frac{b+a\,\mathrm{Cos}[c+d x]}{(a+b)\,(1+\mathrm{Cos}[c+d x])}}\ \mathrm{Sin}[c+d x]\right)\right)\Bigg/$$

$$\left(\left(a^2-b^2\right)\left(-a^2+b^2\right) d\sqrt{\frac{b+a\,\mathrm{Cos}[c+d x]}{(a+b)\,(1+\mathrm{Cos}[c+d x])}}\ \left(a+b\,\mathrm{Sec}[c+d x]\right)^{3/2}\right.$$

$$\left(-\left(\left(\sqrt{b+a\,\mathrm{Cos}[c+d x]}\ \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Sin}[c+d x]\ \left(\mathrm{i}\ \mathrm{EllipticE}\left[\mathrm{i}\ \mathrm{ArcSinh}\left[\mathrm{Tan}\left[\right.\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{1}{2}(c+d x)\right]\right],\frac{-a+b}{a+b}\right]-\mathrm{i}\ \mathrm{EllipticF}\left[\mathrm{i}\ \mathrm{ArcSinh}\left[\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right],\frac{-a+b}{a+b}\right]+$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\ \text{Sin}[c+d\,x]\Bigg)\Bigg)\Bigg/$$

$$\left(2\ \left(a^2-b^2\right)\ \text{Cos}[c+d\,x]^{3/2}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\ \sqrt{1+\text{Sec}[c+d\,x]}\right)\Bigg)+$$

$$\Bigg(a\,\sqrt{\text{Cos}[c+d\,x]}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]$$

$$\Bigg(\text{i}\ \text{EllipticE}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]-$$

$$\text{i}\ \text{EllipticF}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]+$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\ \text{Sin}[c+d\,x]\Bigg)\Bigg)\Bigg/$$

$$\left(2\ \left(a^2-b^2\right)\ \sqrt{b+a\,\text{Cos}[c+d\,x]}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\right)+$$

$$\Bigg(\sqrt{b+a\,\text{Cos}[c+d\,x]}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\text{Sec}[c+d\,x]}\ \text{Sin}[c+d\,x]$$

$$\Bigg(\text{i}\ \text{EllipticE}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]-$$

$$\text{i}\ \text{EllipticF}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]+$$

$$\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\ \text{Sin}[c+d\,x]\Bigg)\Bigg)\Bigg/$$

$$\left(2\ \left(a^2-b^2\right)\ \sqrt{\text{Cos}[c+d\,x]}\ \sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}}\right)+$$

$$\Bigg(\sqrt{\text{Cos}[c+d\,x]}\ \sqrt{b+a\,\text{Cos}[c+d\,x]}\ \text{Sec}\left[\frac{1}{2}\ (c+d\,x)\right]^2\sqrt{1+\text{Sec}[c+d\,x]}$$

$$\left(-\frac{a\,\text{Sin}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])}+\frac{(b+a\,\text{Cos}[c+d\,x])\ \text{Sin}[c+d\,x]}{(a+b)\ (1+\text{Cos}[c+d\,x])^2}\right)$$

$$\Bigg(\text{i}\ \text{EllipticE}\left[\text{i}\ \text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\ (c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]-$$

$$\left.\left.\mathbb{i}\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]+\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\,\text{Sin}[c+d\,x]\right)\right)\Big/$$

$$\left(2\,(a^2-b^2)\,\left(\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}\right)^{3/2}\right)-$$

$$\left(\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\text{Sec}[c+d\,x]}\right.$$

$$\left(\mathbb{i}\,\text{EllipticE}\left[\mathbb{i}\,\text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]-\right.$$

$$\mathbb{i}\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\ \frac{-a+b}{a+b}\right]+$$

$$\left.\left.\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\,\text{Sin}[c+d\,x]\right)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Big/$$

$$\left((a^2-b^2)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)-\frac{1}{(a^2-b^2)\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}}$$

$$\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{b+a\,\text{Cos}[c+d\,x]}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\sqrt{1+\text{Sec}[c+d\,x]}$$

$$\left(\text{Cos}[c+d\,x]\,\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right.+$$

$$\frac{1}{2}\left(\frac{1}{1+\text{Cos}[c+d\,x]}\right)^{3/2}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\,\text{Sin}[c+d\,x]^2+\left(\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\right.$$

$$\left.\left.\text{Sin}[c+d\,x]\,\left(-\frac{a\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}+\frac{(b+a\,\text{Cos}[c+d\,x])\,\text{Sin}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])^2}\right)\right)\right/$$

$$\left(2\,\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)+\frac{\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{2\,\sqrt{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\,\sqrt{1+\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}}-$$

$$\left.\left.\left.\frac{\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\sqrt{1+\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{a+b}}}{2\sqrt{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}}\right)\right)\right)$$

Problem 867: Unable to integrate problem.

$$\int\frac{1}{\text{Cos}[c+d\,x]^{5/2}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 206 leaves, 10 steps):

$$\frac{2\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{b\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{2\,a\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}}{b\left(a^2-b^2\right)d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}}-\frac{2\,a^2\,\text{Sin}[c+d\,x]}{b\left(a^2-b^2\right)d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int\frac{1}{\text{Cos}[c+d\,x]^{5/2}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Problem 868: Unable to integrate problem.

$$\int\frac{1}{\text{Cos}[c+d\,x]^{7/2}\left(a+b\,\text{Sec}[c+d\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 345 leaves, 14 steps):

$$\frac{\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{b\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\frac{3\,a\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\,\text{EllipticPi}\left[2,\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]}{b^2\,d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{a+b\,\text{Sec}[c+d\,x]}}-\left(\left(3\,a^2-b^2\right)\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x\right),\frac{2\,a}{a+b}\right]\sqrt{a+b\,\text{Sec}[c+d\,x]}\right)\Bigg/\left(b^2\left(a^2-b^2\right)d\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{a+b}}\right)-\frac{2\,a^2\,\text{Sin}[c+d\,x]}{b\left(a^2-b^2\right)d\,\text{Cos}[c+d\,x]^{3/2}\sqrt{a+b\,\text{Sec}[c+d\,x]}}+\frac{\left(3\,a^2-b^2\right)\sqrt{a+b\,\text{Sec}[c+d\,x]}\,\text{Sin}[c+d\,x]}{b^2\left(a^2-b^2\right)d\,\sqrt{\text{Cos}[c+d\,x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\operatorname{Cos}[c+d\,x]^{7/2}\,(a+b\operatorname{Sec}[c+d\,x])^{3/2}}\,dx$$

Problem 869: Unable to integrate problem.

$$\int \frac{\operatorname{Cos}[c+d\,x]^{3/2}}{(a+b\operatorname{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 391 leaves, 11 steps):

$$\frac{2\left(a^4+16a^2b^2-16b^4\right)\sqrt{\frac{b+a\operatorname{Cos}[c+d\,x]}{a+b}}\operatorname{EllipticF}\left[\frac{1}{2}(c+d\,x),\frac{2a}{a+b}\right]}{3a^4\left(a^2-b^2\right)d\sqrt{\operatorname{Cos}[c+d\,x]}\sqrt{a+b\operatorname{Sec}[c+d\,x]}}-\left(8b\left(2a^4-7a^2b^2+4b^4\right)\sqrt{\operatorname{Cos}[c+d\,x]}\operatorname{EllipticE}\left[\frac{1}{2}(c+d\,x),\frac{2a}{a+b}\right]\sqrt{a+b\operatorname{Sec}[c+d\,x]}\right)\Big/\left(3a^4\left(a^2-b^2\right)^2d\sqrt{\frac{b+a\operatorname{Cos}[c+d\,x]}{a+b}}\right)+\frac{2b^2\sqrt{\operatorname{Cos}[c+d\,x]}\operatorname{Sin}[c+d\,x]}{3a\left(a^2-b^2\right)d\left(a+b\operatorname{Sec}[c+d\,x]\right)^{3/2}}+\frac{4b^2\left(5a^2-3b^2\right)\sqrt{\operatorname{Cos}[c+d\,x]}\operatorname{Sin}[c+d\,x]}{3a^2\left(a^2-b^2\right)^2d\sqrt{a+b\operatorname{Sec}[c+d\,x]}}+\frac{2\left(a^4-13a^2b^2+8b^4\right)\sqrt{\operatorname{Cos}[c+d\,x]}\sqrt{a+b\operatorname{Sec}[c+d\,x]}\operatorname{Sin}[c+d\,x]}{3a^3\left(a^2-b^2\right)^2d}$$

Result (type 8, 27 leaves):

$$\int \frac{\operatorname{Cos}[c+d\,x]^{3/2}}{(a+b\operatorname{Sec}[c+d\,x])^{5/2}}\,dx$$

Problem 870: Unable to integrate problem.

$$\int \frac{\sqrt{\operatorname{Cos}[c+d\,x]}}{(a+b\operatorname{Sec}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 317 leaves, 10 steps):

$$-\frac{2 b \left(9 a^2-8 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{3 a^3 \left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}+$$

$$\left(2 \left(3 a^4-15 a^2 b^2+8 b^4\right) \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}\right) \Bigg/$$

$$\left(3 a^3 \left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\right)+\frac{2 b^2 \operatorname{Sin}[c+d x]}{3 a \left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{3/2}}+$$

$$\frac{8 b^2 \left(2 a^2-b^2\right) \operatorname{Sin}[c+d x]}{3 a^2 \left(a^2-b^2\right)^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{\sqrt{\operatorname{Cos}[c+d x]}}{\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Problem 871: Unable to integrate problem.

$$\int \frac{1}{\sqrt{\operatorname{Cos}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 4, 302 leaves, 10 steps):

$$\frac{2 \left(3 a^2-2 b^2\right) \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{3 a^2 \left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}+$$

$$\left(4 b \left(3 a^2-b^2\right) \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}\right) \Bigg/$$

$$\left(3 a^2 \left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\right)-\frac{2 b \operatorname{Sin}[c+d x]}{3 \left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{3/2}}-$$

$$\frac{2 b \left(5 a^2-b^2\right) \operatorname{Sin}[c+d x]}{3 a \left(a^2-b^2\right)^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\sqrt{\operatorname{Cos}[c+d x]} \left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Problem 872: Unable to integrate problem.

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{3/2} \left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 4, 281 leaves, 10 steps):

$$-\frac{2 b \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{3 a\left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}-$$

$$\left(2\left(3 a^2+b^2\right) \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}\right) \Big/$$

$$\left(3 a\left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\right)+\frac{2 a \operatorname{Sin}[c+d x]}{3\left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]}\left(a+b \operatorname{Sec}[c+d x]\right)^{3/2}}+$$

$$\frac{4\left(a^2+b^2\right) \operatorname{Sin}[c+d x]}{3\left(a^2-b^2\right)^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{3/2}\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Problem 873: Unable to integrate problem.

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{5/2}\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 4, 277 leaves, 10 steps):

$$\frac{2 \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{3\left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}+$$

$$\frac{8 b \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}}{3\left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}}-$$

$$\frac{2 a^2 \operatorname{Sin}[c+d x]}{3 b\left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]}\left(a+b \operatorname{Sec}[c+d x]\right)^{3/2}}+$$

$$\frac{2 a\left(a^2-5 b^2\right) \operatorname{Sin}[c+d x]}{3 b\left(a^2-b^2\right)^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{5/2}\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Problem 874: Unable to integrate problem.

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{7/2}\left(a+b \operatorname{Sec}[c+d x]\right)^{5/2}} \, dx$$

Optimal (type 4, 370 leaves, 14 steps):

$$-\frac{2 a \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticF}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{3 b\left(a^2-b^2\right) d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}+\frac{2 \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}} \operatorname{EllipticPi}\left[2, \frac{1}{2}(c+d x), \frac{2 a}{a+b}\right]}{b^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}+$$
$$\left(2 a\left(3 a^2-7 b^2\right) \sqrt{\operatorname{Cos}[c+d x]} \operatorname{EllipticE}\left[\frac{1}{2}(c+d x), \frac{2 a}{a+b}\right] \sqrt{a+b \operatorname{Sec}[c+d x]}\right) \Big/$$
$$\left(3 b^2\left(a^2-b^2\right)^2 d \sqrt{\frac{b+a \operatorname{Cos}[c+d x]}{a+b}}\right)-\frac{2 a^2 \operatorname{Sin}[c+d x]}{3 b\left(a^2-b^2\right) d \operatorname{Cos}[c+d x]^{3/2}(a+b \operatorname{Sec}[c+d x])^{3/2}}-$$
$$\frac{2 a^2\left(3 a^2-7 b^2\right) \operatorname{Sin}[c+d x]}{3 b^2\left(a^2-b^2\right)^2 d \sqrt{\operatorname{Cos}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}}$$

Result (type 8, 27 leaves):

$$\int \frac{1}{\operatorname{Cos}[c+d x]^{7/2}(a+b \operatorname{Sec}[c+d x])^{5/2}} \, dx$$

Problem 878: Result more than twice size of optimal antiderivative.

$$\int \frac{(d \operatorname{Cos}[e+f x])^n}{a+b \operatorname{Sec}[e+f x]} \, dx$$

Optimal (type 6, 196 leaves, 7 steps):

$$\frac{1}{\left(a^2-b^2\right) f} a \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1-n), 1, \frac{3}{2}, \operatorname{Sin}[e+f x]^2, \frac{a^2 \operatorname{Sin}[e+f x]^2}{a^2-b^2}\right]$$
$$\operatorname{Cos}[e+f x](d \operatorname{Cos}[e+f x])^n\left(\operatorname{Cos}[e+f x]^2\right)^{\frac{1}{2}(-1-n)} \operatorname{Sin}[e+f x]-$$
$$\frac{1}{\left(a^2-b^2\right) f} b \operatorname{AppellF1}\left[\frac{1}{2},-\frac{n}{2}, 1, \frac{3}{2}, \operatorname{Sin}[e+f x]^2, \frac{a^2 \operatorname{Sin}[e+f x]^2}{a^2-b^2}\right]$$
$$(d \operatorname{Cos}[e+f x])^n\left(\operatorname{Cos}[e+f x]^2\right)^{-n/2} \operatorname{Sin}[e+f x]$$

Result (type 6, 5216 leaves):

$$\left((d \operatorname{Cos}[e+f x])^n \operatorname{Tan}[e+f x]\left(a \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, 1+\frac{n}{2}, \frac{3}{2},-\operatorname{Tan}[e+f x]^2\right]-\right.\right.$$
$$b \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+n}{2}, \frac{3}{2},-\operatorname{Tan}[e+f x]^2\right]-\left(3 a b^2\left(a^2-b^2\right)\right.$$
$$\left.\operatorname{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2},-\operatorname{Tan}[e+f x]^2, \frac{b^2 \operatorname{Tan}[e+f x]^2}{a^2-b^2}\right]\left(1+\operatorname{Tan}[e+f x]^2\right)^{-n/2}\right) \Big/$$
$$\left(\left(-3\left(a^2-b^2\right) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2},-\operatorname{Tan}[e+f x]^2, \frac{b^2 \operatorname{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right) n \text{AppellF1}\left[\frac{3}{2}, 1+\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] - 2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\Big) \left(a^2-b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\Big) - \left(3 b^3 \left(-a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right) \Big/ \left(\left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2} (-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] - \left(a^2-b^2\right) (-1+n) \text{AppellF1}\left[\frac{3}{2}, \frac{1+n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)\Big)\Big) \Big/$$

$$\Big(a^2 f \left(a+b \text{Sec}[e+f x]\right) \Big(\frac{1}{a^2} \text{Sec}[e+f x]^2 \Big(a \text{Hypergeometric2F1}\left[\frac{1}{2}, 1+\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right] - b \text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right] - \left(3 a b^2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \left(1+\text{Tan}[e+f x]^2\right)^{-n/2}\right) \Big/ \left(\left(-3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(\left(a^2-b^2\right) n \text{AppellF1}\left[\frac{3}{2}, 1+\frac{n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] - 2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{n}{2}, 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(a^2-b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) - \left(3 b^3 \left(-a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right) \Big/ \left(\left(3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2} (-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2} (-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] - \left(a^2-b^2\right) (-1+n) \text{AppellF1}\left[\frac{3}{2}, \frac{1+n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)\Big) +$$

$$\frac{1}{a^2} \text{Tan}[e+f x] \Big(-\Big(\Big(\Big(6 a b^4 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{n}{2}, 1, \frac{3}{2}, -\text{Tan}[e+f x]^2,\right.$$

$$\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{n}{2},\,1,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(\left(a^2-b^2\right)\,n\,\text{AppellF1}\Big[\frac{3}{2},\,1+\frac{n}{2},\,1,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]-$$

$$2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(3\,a\,b^2\,\left(a^2-b^2\right)\,n\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{n}{2},\,1,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-1-\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{n}{2},\,1,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(\left(a^2-b^2\right)\,n\,\text{AppellF1}\Big[\frac{3}{2},\,1+\frac{n}{2},\,1,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]-$$

$$2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\,\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)-$$

$$\Bigg(3\,a\,b^2\,\left(a^2-b^2\right)\,\Bigg(-\frac{1}{3}\,n\,\text{AppellF1}\Big[\frac{3}{2},\,1+\frac{n}{2},\,1,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{n}{2},\,1,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(\left(a^2-b^2\right)\,n\,\text{AppellF1}\Big[\frac{3}{2},\,1+\frac{n}{2},\,1,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]-$$

$$2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)+\Bigg(6\,b^5\,\left(-a^2+b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}\,\left(-1+n\right),\,1,\,\frac{3}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(3\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}\,\left(-1+n\right),\,1,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]+$$

$$\Bigg(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{1}{2}\,\left(-1+n\right),\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]-$$

$$(a^2-b^2)\ (-1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1+n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Big)$$

$$\text{Tan}[e+f\,x]^2\Big)\ \big(-a^2+b^2\ (1+\text{Tan}[e+f\,x]^2)\big)^2\Big)\ -$$

$$\Big(6\,b^3\ (-a^2+b^2)\ \Big(\frac{1}{2}-\frac{n}{2}\Big)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\ (-1+n),\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ (1+\text{Tan}[e+f\,x]^2)^{-\frac{1}{2}-\frac{n}{2}}\Big)\Big/$$

$$\Big(\Big(3\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\ (-1+n),\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ +$$

$$\Big(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}\ (-1+n),\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ -$$

$$(a^2-b^2)\ (-1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1+n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Big)$$

$$\text{Tan}[e+f\,x]^2\Big)\ \big(-a^2+b^2\ (1+\text{Tan}[e+f\,x]^2)\big)\Big)\ -$$

$$\Big(3\,b^3\ (-a^2+b^2)\ \Big(-\frac{1}{3}\ (-1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ 1+\frac{1}{2}\ (-1+n),\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,$$

$$\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ +\ \frac{1}{3\ (a^2-b^2)}$$

$$2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}\ (-1+n),\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]$$

$$\text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\Big)\ (1+\text{Tan}[e+f\,x]^2)^{\frac{1}{2}-\frac{n}{2}}\Big)\Big/$$

$$\Big(\Big(3\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\ (-1+n),\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ +$$

$$\Big(2\,b^2\,\text{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}\ (-1+n),\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ -$$

$$(a^2-b^2)\ (-1+n)\ \text{AppellF1}\Big[\frac{3}{2},\ \frac{1+n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\Big)$$

$$\text{Tan}[e+f\,x]^2\Big)\ \big(-a^2+b^2\ (1+\text{Tan}[e+f\,x]^2)\big)\Big)\ -\ b\,\text{Csc}[e+f\,x]\ \text{Sec}[e+f\,x]$$

$$\Big(-\text{Hypergeometric2F1}\Big[\frac{1}{2},\ \frac{1+n}{2},\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2\Big]\ +\ (1+\text{Tan}[e+f\,x]^2)^{\frac{1}{2}\ (-1-n)}\Big)\ +\ a$$

$$\text{Csc}[e+f\,x]\ \text{Sec}[e+f\,x]$$

$$\Big(-\text{Hypergeometric2F1}\Big[\frac{1}{2},\ 1+\frac{n}{2},\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2\Big]\ +\ (1+\text{Tan}[e+f\,x]^2)^{-1-\frac{n}{2}}\Big)\ +$$

$$\Big(3\,a\,b^2\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]$$

$$(1+\text{Tan}[e+f\,x]^2)^{-n/2}$$

$$\Big(2\ \Big((a^2-b^2)\ n\,\text{AppellF1}\Big[\frac{3}{2},\ 1+\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\Big]\ -$$

$$2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]-3\,\left(a^2-b^2\right)\,\left(-\frac{1}{3}\,n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\left.\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)+$$

$$\text{Tan}[e+f\,x]^2\,\left(\left(a^2-b^2\right)\,n\,\left(\frac{1}{5\,\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{6}{5}\,\left(1+\frac{n}{2}\right)\,\text{AppellF1}\left[\frac{5}{2},2+\right.$$

$$\left.\left.\frac{n}{2},1,\frac{7}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)-$$

$$2\,b^2\,\left(-\frac{3}{5}\,n\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+\frac{1}{5\,\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{n}{2},3,\frac{7}{2},\right.$$

$$\left.\left.\left.\left.\left.-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-2\,b^2\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[e+f\,x]^2\right)^2$$

$$\left.\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)+\left(3\,b^3\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\,(-1+n),\right.\right.$$

$$\left.1,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}$$

$$\left(2\,\left(2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}\,(-1+n),2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.\right.$$

$$\left.\left(a^2-b^2\right)\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},1,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+3\,\left(a^2-b^2\right)\,\left(-\frac{1}{3}\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$\left.1+\frac{1}{2}\,(-1+n),1,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]+\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}\,(-1+n),2,\frac{5}{2},\right.$$

$$-\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\Bigg)+$$

$$\mathrm{Tan}[e+f x]^2\left(2\,b^2\left(-\frac{3}{5}\,(-1+n)\ \mathrm{AppellF1}\Big[\frac{5}{2},\ 1+\frac{1}{2}\,(-1+n),\ 2,\ \frac{7}{2},\right.\right.$$

$$-\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]+$$

$$\frac{1}{5\,(a^2-b^2)}12\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{1}{2}\,(-1+n),\ 3,\ \frac{7}{2},\ -\mathrm{Tan}[e+f x]^2,$$

$$\left.\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\right)-(a^2-b^2)\ (-1+n)$$

$$\left(\frac{1}{5\,(a^2-b^2)}6\,b^2\,\mathrm{AppellF1}\Big[\frac{5}{2},\ \frac{1+n}{2},\ 2,\ \frac{7}{2},\ -\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\right.$$

$$\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]-\frac{3}{5}\,(1+n)\ \mathrm{AppellF1}\Big[\frac{5}{2},\ 1+\frac{1+n}{2},\ 1,\ \frac{7}{2},$$

$$\left.\left.\left.\left.-\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\ \mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\right)\right)\right)\right)\Big/$$

$$\left(\left(3\,(a^2-b^2)\ \mathrm{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\,(-1+n),\ 1,\ \frac{3}{2},\ -\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]+\right.\right.$$

$$\left(2\,b^2\,\mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{1}{2}\,(-1+n),\ 2,\ \frac{5}{2},\ -\mathrm{Tan}[e+f x]^2,\ \frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]-\right.$$

$$(a^2-b^2)\ (-1+n)\ \mathrm{AppellF1}\Big[\frac{3}{2},\ \frac{1+n}{2},\ 1,\ \frac{5}{2},\ -\mathrm{Tan}[e+f x]^2,$$

$$\left.\left.\left.\frac{b^2\,\mathrm{Tan}[e+f x]^2}{a^2-b^2}\Big]\right)\ \mathrm{Tan}[e+f x]^2\right)^2\ \left(-a^2+b^2\,(1+\mathrm{Tan}[e+f x]^2)\right)\right)\Bigg)\Bigg)$$

Problem 879: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\mathrm{Cos}[e+f x])^n}{(a+b\,\mathrm{Sec}[e+f x])^2}\,dx$$

Optimal (type 6, 309 leaves, 10 steps):

$$\frac{1}{(a^2-b^2)^2\,f}a^2\,\mathrm{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\,(-3-n),\ 2,\ \frac{3}{2},\ \mathrm{Sin}[e+f x]^2,\ \frac{a^2\,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\Big]$$

$$\mathrm{Cos}[e+f x]\ (d\,\mathrm{Cos}[e+f x])^n\ (\mathrm{Cos}[e+f x]^2)^{\frac{1}{2}(-1-n)}\ \mathrm{Sin}[e+f x]+$$

$$\frac{1}{(a^2-b^2)^2\,f}b^2\,\mathrm{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\,(-1-n),\ 2,\ \frac{3}{2},\ \mathrm{Sin}[e+f x]^2,\ \frac{a^2\,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\Big]$$

$$\mathrm{Cos}[e+f x]\ (d\,\mathrm{Cos}[e+f x])^n\ (\mathrm{Cos}[e+f x]^2)^{\frac{1}{2}(-1-n)}\ \mathrm{Sin}[e+f x]-$$

$$\frac{1}{(a^2-b^2)^2\,f}2\,a\,b\,\mathrm{AppellF1}\Big[\frac{1}{2},\ \frac{1}{2}\,(-2-n),\ 2,\ \frac{3}{2},\ \mathrm{Sin}[e+f x]^2,\ \frac{a^2\,\mathrm{Sin}[e+f x]^2}{a^2-b^2}\Big]$$

$$(d\,\mathrm{Cos}[e+f x])^n\ (\mathrm{Cos}[e+f x]^2)^{-n/2}\ \mathrm{Sin}[e+f x]$$

Result (type 6, 10 296 leaves):

$$\Bigg(\left(d\,\text{Cos}[e+f\,x]\right)^n\Bigg(-\frac{1}{a^3}2\,b\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}+\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f\,x]^2\right]\text{Tan}[e+f\,x]+$$

$$\frac{1}{a^2}\text{Hypergeometric2F1}\left[\frac{1}{2},1+\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f\,x]^2\right]\text{Tan}[e+f\,x]-$$

$$\Bigg(6\,b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]$$

$$\text{Tan}[e+f\,x]\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-$$

$$4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)+\Bigg(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),2,\right.$$

$$\left.\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Tan}[e+f\,x]\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(-4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}\left(-1+n\right),3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)+$$

$$\Bigg(3\,b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]$$

$$\text{Tan}[e+f\,x]\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(a^2\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-$$

$$2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(-a^2+b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)-\Bigg(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),1,\right.$$

$$\left.\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Tan}[e+f\,x]\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a^3\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),1,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\left(-2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}\,(-1+n),\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1+n}{2},\,1,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\left.\left.\left.\text{Tan}[e+f\,x]^2\right)\,\left(-a^2+b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(f\,(a+b\,\text{Sec}[e+f\,x])^2\,\left(-\frac{1}{a^3}2\,b\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}+\frac{n}{2},\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2\right]\,\text{Sec}[e+f\,x]^2+\right.\right.$$

$$\frac{1}{a^2}$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\,1+\frac{n}{2},\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2\right]\,\text{Sec}[e+f\,x]^2-$$

$$\left(24\,b^4\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{n}{2},\,2,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\right)\Big/$$

$$\left(\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{n}{2},\,2,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},\,1+\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.$$

$$\left.\left.4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{n}{2},\,3,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)^3\right)+\left(24\,b^5\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}\,(-1+n),\,2,\,\frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right)\Big/$$

$$\left(a\,\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}\,(-1+n),\,2,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(-4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}\,(-1+n),\,3,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1+n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\left.\text{Tan}[e+f\,x]^2\right)\,\left(a^2-b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)^3\right)+$$

$$\left(6\,b^2\,\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{1}{2},\,\frac{n}{2},\,2,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-1-\frac{n}{2}}\right)\Big/$$

$$\left(\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{n}{2},\,2,\,\frac{3}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},\,1+\frac{n}{2},\,2,\,\frac{5}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.$$

$$4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)-\Bigg(6\,b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},\right.$$

$$\left.-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-$$

$$4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)-\Bigg(6\,b^2\left(a^2-b^2\right)\text{Tan}[e+f\,x]$$

$$\Bigg(-\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]+\frac{1}{3\left(a^2-b^2\right)}4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\Bigg)\Bigg/$$

$$\Bigg(\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-$$

$$4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)+\Bigg(12\,b^3\left(a^2-b^2\right)\left(\frac{1}{2}-\frac{n}{2}\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),2,\right.$$

$$\left.\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{-\frac{1}{2}-\frac{n}{2}}\Bigg)\Bigg/$$

$$\Bigg(a\,\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\Bigg(-4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}\left(-1+n\right),3,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+$$

$$\left(a^2-b^2\right)\left(-1+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},2,\frac{5}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\left(a^2-b^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)+$$

$$\Bigg(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}\left(-1+n\right),2,\frac{3}{2},-\text{Tan}[e+f\,x]^2,\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]$$

$$\text{Sec}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\Bigg)\Bigg/$$

$$\left(a\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),2,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(-4b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)\text{Tan}[e+fx]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+fx]^2\right)\right)^2\right)+$$

$$\left(6b^3\left(a^2-b^2\right)\text{Tan}[e+fx]\left(-\frac{1}{3}(-1+n)\,\text{AppellF1}\left[\frac{3}{2},1+\frac{1}{2}(-1+n),2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]+\frac{1}{3\left(a^2-b^2\right)}4b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)\left(1+\text{Tan}[e+fx]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right)\Big/$$

$$\left(a\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),2,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(-4b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)\text{Tan}[e+fx]^2\right)\left(a^2-b^2\left(1+\text{Tan}[e+fx]^2\right)\right)^2\right)-$$

$$\left(6b^4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]^2\left(1+\text{Tan}[e+fx]^2\right)^{-n/2}\right)\Big/$$

$$\left(a^2\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]-2b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)\text{Tan}[e+fx]^2\right)\left(-a^2+b^2\left(1+\text{Tan}[e+fx]^2\right)\right)^2\right)+$$

$$\left(12b^5\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]^2\left(1+\text{Tan}[e+fx]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right)\Big/$$

$$\left(a^3\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(-2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}\,(-1+n),\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.$$

$$\left.\left(a^2-b^2\right)\,(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\ \frac{1+n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\text{Tan}[e+f\,x]^2\right)\,\left(-a^2+b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Big)-$$

$$\left(3\,b^2\,\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right.$$

$$\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-1-\frac{n}{2}}\right)\Big/$$

$$\left(a^2\,\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},\ 1+\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.$$

$$\left.\left.2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left(-a^2+b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)+\left(3\,b^2\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\right.\right.$$

$$\left.\left.-\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\right)\Big/$$

$$\left(a^2\,\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},\ 1+\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.$$

$$\left.\left.2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left(-a^2+b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)+\left(3\,b^2\,\left(a^2-b^2\right)\,\text{Tan}[e+f\,x]\right.$$

$$\left(-\frac{1}{3}\,n\,\text{AppellF1}\left[\frac{3}{2},\ 1+\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\,\text{Sec}[e+f\,x]^2\right.$$

$$\text{Tan}[e+f\,x]+\frac{1}{3\,\left(a^2-b^2\right)}2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]$$

$$\left.\left.\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\,\left(1+\text{Tan}[e+f\,x]^2\right)^{-n/2}\right)\Big/$$

$$\left(a^2\,\left(-3\,\left(a^2-b^2\right)\,\text{AppellF1}\left[\frac{1}{2},\ \frac{n}{2},\ 1,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

$$\left(\left(a^2-b^2\right)\,n\,\text{AppellF1}\left[\frac{3}{2},\ 1+\frac{n}{2},\ 1,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]-\right.$$

$$\left.\left.2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)\,\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left(-a^2+b^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)-\left(12\,b^3\,\left(a^2-b^2\right)\,\left(\frac{1}{2}-\frac{n}{2}\right)\right.$$

$$\text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\left.\text{Sec}[e+f x]^2 \text{Tan}[e+f x]^2 \left(1+\text{Tan}[e+f x]^2\right)^{-\frac{1}{2}-\frac{n}{2}}\right) \Big/$$

$$\left(a^3 \left(-3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(-2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}(-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(a^2-b^2\right)(-1+n) \text{AppellF1}\left[\frac{3}{2}, \frac{1+n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) -$$

$$\left(6 b^3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right) \Big/$$

$$\left(a^3 \left(-3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(-2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}(-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(a^2-b^2\right)(-1+n) \text{AppellF1}\left[\frac{3}{2}, \frac{1+n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) -$$

$$\left(6 b^3 \left(a^2-b^2\right) \text{Tan}[e+f x] \left(-\frac{1}{3}(-1+n) \text{AppellF1}\left[\frac{3}{2}, 1+\frac{1}{2}(-1+n), 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \text{Tan}[e+f x] + \frac{1}{3\left(a^2-b^2\right)} 2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}(-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\right) \left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}-\frac{n}{2}}\right) \Big/$$

$$\left(a^3 \left(-3 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}(-1+n), 1, \frac{3}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(-2 b^2 \text{AppellF1}\left[\frac{3}{2}, \frac{1}{2}(-1+n), 2, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right] + \left(a^2-b^2\right)(-1+n) \text{AppellF1}\left[\frac{3}{2}, \frac{1+n}{2}, 1, \frac{5}{2}, -\text{Tan}[e+f x]^2, \frac{b^2 \text{Tan}[e+f x]^2}{a^2-b^2}\right]\right) \text{Tan}[e+f x]^2\right) \left(-a^2+b^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) + \frac{1}{a^2} \text{Sec}[e+f x]^2$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2}, 1+\frac{n}{2}, \frac{3}{2}, -\text{Tan}[e+f x]^2\right] + \left(1+\text{Tan}[e+f x]^2\right)^{-1-\frac{n}{2}}\right) - \frac{1}{a^3} 2$$

$$b \, \text{Sec}[e+f x]^2$$

$$\left(-\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}+\frac{n}{2},\frac{3}{2},-\text{Tan}[e+f x]^2\right]+\left(1+\text{Tan}[e+f x]^2\right)^{-\frac{1}{2}-\frac{n}{2}}\right)-$$

$$\Bigg(3 b^2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$

$$\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\Bigg(2\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]-\right.$$

$$\left.2 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Sec}[e+f x]^2$$

$$\text{Tan}[e+f x]-3\left(a^2-b^2\right)\left(-\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{3\left(a^2-b^2\right)}2 b^2\,\text{AppellF1}\Big[\frac{3}{2},$$

$$\left.\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)+$$

$$\text{Tan}[e+f x]^2\left(\left(a^2-b^2\right)n\left(\frac{1}{5\left(a^2-b^2\right)}6 b^2\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+f x]^2,\right.\right.\right.$$

$$\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{6}{5}\left(1+\frac{n}{2}\right)\text{AppellF1}\Big[\frac{5}{2},$$

$$\left.2+\frac{n}{2},1,\frac{7}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)-$$

$$2 b^2\left(-\frac{3}{5}n\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right.$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{5\left(a^2-b^2\right)}12 b^2\,\text{AppellF1}\Big[\frac{5}{2},\frac{n}{2},3,\frac{7}{2},$$

$$\left.\left.\left.-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a^2\Bigg(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},1,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+$$

$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]-2 b^2\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)^2$$

$$\left(-a^2+b^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+\Bigg(6 b^2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},$$

$$-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\Big]\,\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\Bigg(2\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]-\right.$$

$$\left.4 b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Sec}[e+f x]^2$$

$$\text{Tan}[e+f x]-3\left(a^2-b^2\right)\left(-\frac{1}{3}n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\right.\right.$$
$$\left.\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{3\left(a^2-b^2\right)}4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\right.$$
$$\left.\left.\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+$$
$$\text{Tan}[e+f x]^2\left(\left(a^2-b^2\right)n\left(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},3,\frac{7}{2},-\text{Tan}[e+f x]^2,\right.\right.\right.$$
$$\left.\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{6}{5}\left(1+\frac{n}{2}\right)\text{AppellF1}\left[\frac{5}{2},\right.$$
$$\left.\left.2+\frac{n}{2},2,\frac{7}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)-$$
$$4\,b^2\left(-\frac{3}{5}n\,\text{AppellF1}\left[\frac{5}{2},1+\frac{n}{2},3,\frac{7}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right.$$
$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{5\left(a^2-b^2\right)}18\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{n}{2},4,\frac{7}{2},\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\right)\right)\Big/$$
$$\left(\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(\left(a^2-b^2\right)n\,\text{AppellF1}\left[\frac{3}{2},1+\frac{n}{2},2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]-4\,b^2\right.$$
$$\left.\left.\text{AppellF1}\left[\frac{3}{2},\frac{n}{2},3,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)\text{Tan}[e+f x]^2\right)^2$$
$$\left.\left(a^2-b^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)+\left(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),1,\right.\right.$$
$$\left.\frac{3}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}-\frac{n}{2}}$$
$$\left(2\left(-2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left.\left(a^2-b^2\right)(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\right)$$
$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-3\left(a^2-b^2\right)\left(-\frac{1}{3}(-1+n)\,\text{AppellF1}\left[\frac{3}{2},1+\frac{1}{2}(-1+n),\right.\right.$$
$$\left.1,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{3\left(a^2-b^2\right)}$$
$$2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),2,\frac{5}{2},-\text{Tan}[e+f x]^2,\frac{b^2\,\text{Tan}[e+f x]^2}{a^2-b^2}\right]$$
$$\left.\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+\text{Tan}[e+f x]^2\left(-2\,b^2\right.$$

$$\left(-\frac{3}{5}(-1+n)\,\text{AppellF1}\left[\frac{5}{2},1+\frac{1}{2}(-1+n),2,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right.$$
$$\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]+\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}(-1+n),\right.$$
$$\left.\left.3,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+$$
$$\left(a^2-b^2\right)(-1+n)\left(\frac{1}{5\left(a^2-b^2\right)}6\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1+n}{2},2,\frac{7}{2},-\text{Tan}[e+fx]^2,\right.\right.$$
$$\left.\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-\frac{3}{5}(1+n)\,\text{AppellF1}\left[\frac{5}{2},1+\frac{1+n}{2},\right.$$
$$\left.\left.\left.\left.\left.1,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)\right)\right)\right)\Big/$$
$$\left(a^3\left(-3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),1,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left(-2\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\right.$$
$$\left.(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},1,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)$$
$$\left.\left.\text{Tan}[e+fx]^2\right)^2\left(-a^2+b^2\left(1+\text{Tan}[e+fx]^2\right)\right)\right)-$$
$$\left(6\,b^3\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),2,\frac{3}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right.$$
$$\text{Tan}[e+fx]\left(1+\text{Tan}[e+fx]^2\right)^{\frac{1}{2}-\frac{n}{2}}$$
$$\left(2\left(-4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]+\right.\right.$$
$$\left.\left(a^2-b^2\right)(-1+n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1+n}{2},2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right)$$
$$\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]-3\left(a^2-b^2\right)\left(-\frac{1}{3}(-1+n)\,\text{AppellF1}\left[\frac{3}{2},1+\frac{1}{2}(-1+n),\right.\right.$$
$$\left.2,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]+\frac{1}{3\left(a^2-b^2\right)}$$
$$4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}(-1+n),3,\frac{5}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]$$
$$\left.\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+\text{Tan}[e+fx]^2\left(-4\,b^2\right.$$
$$\left(-\frac{3}{5}(-1+n)\,\text{AppellF1}\left[\frac{5}{2},1+\frac{1}{2}(-1+n),3,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\right.$$
$$\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]+\frac{1}{5\left(a^2-b^2\right)}18\,b^2\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}(-1+n),\right.$$
$$\left.\left.4,\frac{7}{2},-\text{Tan}[e+fx]^2,\frac{b^2\,\text{Tan}[e+fx]^2}{a^2-b^2}\right]\text{Sec}[e+fx]^2\,\text{Tan}[e+fx]\right)+$$

$$\left(a^2-b^2\right)\ (-1+n)\ \left(\frac{1}{5\left(a^2-b^2\right)}12\,b^2\,\text{AppellF1}\left[\frac{5}{2},\ \frac{1+n}{2},\ 3,\ \frac{7}{2},\ -\text{Tan}[e+f\,x]^2,\right.\right.$$

$$\left.\frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]-\frac{3}{5}\ (1+n)\ \text{AppellF1}\left[\frac{5}{2},\ 1+\frac{1+n}{2},\right.$$

$$\left.\left.\left.\left.2,\ \frac{7}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\right)\right)\right)\right)\Big/$$

$$\left(a\left(-3\ \left(a^2-b^2\right)\ \text{AppellF1}\left[\frac{1}{2},\ \frac{1}{2}\ (-1+n),\ 2,\ \frac{3}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\right.\right.$$

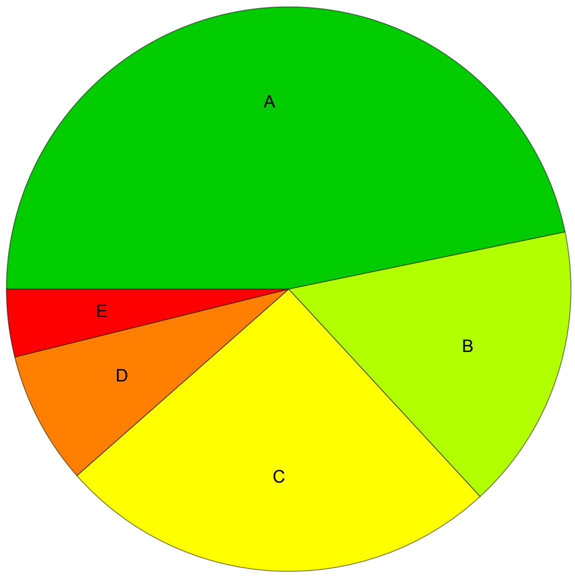
$$\left(-4\,b^2\,\text{AppellF1}\left[\frac{3}{2},\ \frac{1}{2}\ (-1+n),\ 3,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]+\left(a^2-b^2\right)\right.$$

$$\left.(-1+n)\ \text{AppellF1}\left[\frac{3}{2},\ \frac{1+n}{2},\ 2,\ \frac{5}{2},\ -\text{Tan}[e+f\,x]^2,\ \frac{b^2\,\text{Tan}[e+f\,x]^2}{a^2-b^2}\right]\right)$$

$$\left.\left.\left.\text{Tan}[e+f\,x]^2\right)^2\ \left(a^2-b^2\ \left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\right)\right)\right)$$

Summary of Integration Test Results

879 integration problems



A - 411 optimal antiderivatives

B - 144 more than twice size of optimal antiderivatives

C - 223 unnecessarily complex antiderivatives

D - 67 unable to integrate problems

E - 34 integration timeouts