Mathematica 11.3 Integration Test Results

Test results for the 286 problems in "4.5.2.3 (g sec)^p (a+b sec)^m (c+d sec)^n.m"

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

$$\int \text{Sec}[e+f x]\,(a+a\,\text{Sec}[e+f x])\,(c-c\,\text{Sec}[e+f x])^4\,dx$$

Optimal (type 3, 105 leaves, 12 steps):

$$\frac{7 a c^4 \text{ArcTanh}[\text{Sin}[e+f x]]}{8 f}-\frac{a c^4 \text{Sec}[e+f x]\,\text{Tan}[e+f x]}{8 f}-\frac{3 a c^4 \text{Sec}[e+f x]^3\,\text{Tan}[e+f x]}{4 f}+\frac{4 a c^4 \text{Tan}[e+f x]^3}{3 f}+\frac{a c^4 \text{Tan}[e+f x]^5}{5 f}$$

Result (type 3, 499 leaves):

$$-\frac{1}{3840 f} a c^4 \text{Sec}[e]\,\text{Sec}[e+f x]^5 \Big(525 \text{Cos}[2 e+3 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]+$$
$$525 \text{Cos}[4 e+3 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]+$$
$$105 \text{Cos}[4 e+5 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]+$$
$$105 \text{Cos}[6 e+5 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]+$$
$$1050 \text{Cos}[f x] \Big(\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]-$$
$$\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]\Big)+1050 \text{Cos}[2 e+f x]$$
$$\Big(\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]-\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]-\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]\Big)-$$
$$525 \text{Cos}[2 e+3 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]-$$
$$525 \text{Cos}[4 e+3 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]-$$
$$105 \text{Cos}[4 e+5 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]-$$
$$105 \text{Cos}[6 e+5 f x] \text{Log}\Big[\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big]+800 \text{Sin}[f x]-$$
$$1920 \text{Sin}[2 e+f x]+780 \text{Sin}[e+2 f x]+780 \text{Sin}[3 e+2 f x]+640 \text{Sin}[2 e+3 f x]-$$
$$720 \text{Sin}[4 e+3 f x]+30 \text{Sin}[3 e+4 f x]+30 \text{Sin}[5 e+4 f x]+272 \text{Sin}[4 e+5 f x]\Big)$$

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

$$\int \mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])\,(c-c\,\mathrm{Sec}[e+f x])^3\,dx$$

Optimal (type 3, 86 leaves, 9 steps):

$$\frac{5\,a\,c^3\,\mathrm{ArcTanh}[\mathrm{Sin}[e+f x]]}{8 f}-\frac{3\,a\,c^3\,\mathrm{Sec}[e+f x]\,\mathrm{Tan}[e+f x]}{8 f}-\frac{a\,c^3\,\mathrm{Sec}[e+f x]^3\,\mathrm{Tan}[e+f x]}{4 f}+\frac{2\,a\,c^3\,\mathrm{Tan}[e+f x]^3}{3 f}$$

Result (type 3, 887 leaves):

$$a\left(\frac{5\,\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right]\,(c-c\,\mathrm{Sec}[e+f x])^3}{64 f}-\right.$$
$$\frac{5\,\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right]\,(c-c\,\mathrm{Sec}[e+f x])^3}{64 f}+$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3}{128 f\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^4}-$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\,\mathrm{Sin}\left[\frac{f x}{2}\right]}{24 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^3}+$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\left(\mathrm{Cos}\left[\frac{e}{2}\right]-17\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)}{384 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^2}+$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\,\mathrm{Sin}\left[\frac{f x}{2}\right]}{12 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)}-$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3}{128 f\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^4}-$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\,\mathrm{Sin}\left[\frac{f x}{2}\right]}{24 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^3}+$$
$$\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\left(-\mathrm{Cos}\left[\frac{e}{2}\right]-17\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)}{384 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^2}+$$
$$\left.\frac{\mathrm{Cos}[e+f x]^3\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f x])^3\,\mathrm{Sin}\left[\frac{f x}{2}\right]}{12 f\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)}\right)$$

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

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

Optimal (type 3, 61 leaves, 6 steps):

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

Result (type 3, 313 leaves):

$$-\frac{1}{48 f}a\,c^2\,\text{Sec}[e]\,\text{Sec}[e+f x]^3\,\Big(3\,\text{Cos}[2 e+3 f x]\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]-\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]+$$
$$3\,\text{Cos}[4 e+3 f x]\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]-\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]+$$
$$9\,\text{Cos}[f x]\,\Big(\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]-\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]-$$
$$\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]+\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]\Big)+9\,\text{Cos}[2 e+f x]$$
$$\Big(\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]-\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]-\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]+\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]\Big)-$$
$$3\,\text{Cos}[2 e+3 f x]\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]+\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]-$$
$$3\,\text{Cos}[4 e+3 f x]\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]+\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]-$$
$$12\,\text{Sin}[2 e+f x]+6\,\text{Sin}[e+2 f x]+6\,\text{Sin}[3 e+2 f x]+4\,\text{Sin}[2 e+3 f x]\Big)$$

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

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

Optimal (type 3, 61 leaves, 6 steps):

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

Result (type 3, 124 leaves):

$$\frac{1}{12 f}a^2\,c\,\Bigg(-6\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]-\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]+6\,\text{Log}\big[\text{Cos}\big[\tfrac{1}{2}(e+f x)\big]+\text{Sin}\big[\tfrac{1}{2}(e+f x)\big]\big]-$$
$$\frac{3}{\big(\text{Cos}\big[\frac{1}{2}(e+f x)\big]-\text{Sin}\big[\frac{1}{2}(e+f x)\big]\big)^2}+\frac{3}{\big(\text{Cos}\big[\frac{1}{2}(e+f x)\big]+\text{Sin}\big[\frac{1}{2}(e+f x)\big]\big)^2}-4\,\text{Tan}[e+f x]^3\Bigg)$$

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

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

Optimal (type 3, 74 leaves, 5 steps):

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

Result (type 3, 220 leaves):

$$\left(2 a^2 \text{Cos}\left[\frac{1}{2} (e+f x)\right] \text{Sec}[e+f x] \text{Sin}\left[\frac{1}{2} (e+f x)\right] \left(4 \text{Csc}\left[\frac{e}{2}\right] \text{Sec}\left[\frac{1}{2} (e+f x)\right] \text{Sin}\left[\frac{f x}{2}\right]+\left(-3 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]+3 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]+\text{Sin}[f x]\Big/\left(\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right)\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)\right)\Big/(f (c-c \text{Sec}[e+f x]))$$

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

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

Optimal (type 3, 227 leaves, 16 steps):

$$\frac{55 a^3 c^6 \text{ArcTanh}[\text{Sin}[e+f x]]}{128 f}-\frac{25 a^3 c^6 \text{Sec}[e+f x] \text{Tan}[e+f x]}{128 f}-\frac{15 a^3 c^6 \text{Sec}[e+f x]^3 \text{Tan}[e+f x]}{64 f}+\frac{5 a^3 c^6 \text{Sec}[e+f x] \text{Tan}[e+f x]^3}{24 f}+\frac{5 a^3 c^6 \text{Sec}[e+f x]^3 \text{Tan}[e+f x]^3}{16 f}-\frac{a^3 c^6 \text{Sec}[e+f x] \text{Tan}[e+f x]^5}{6 f}-\frac{3 a^3 c^6 \text{Sec}[e+f x]^3 \text{Tan}[e+f x]^5}{8 f}+\frac{4 a^3 c^6 \text{Tan}[e+f x]^7}{7 f}+\frac{a^3 c^6 \text{Tan}[e+f x]^9}{9 f}$$

Result (type 3, 1686 leaves):

$$\frac{1}{33554432 f} 9 \text{Cos}[e+f x]^9 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^{12} \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 (a+a \text{Sec}[e+f x])^3 (c-c \text{Sec}[e+f x])^6 \left(-1430 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]+1430 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\frac{1}{32} \text{Sec}[e+f x]^8 (4601 \text{Sin}[e+f x]+3589 \text{Sin}[3 (e+f x)]+5441 \text{Sin}[5 (e+f x)]-715 \text{Sin}[7 (e+f x)])\right)-$$

$$\frac{1}{16777216 f} 11 \text{Cos}[e+f x]^9 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^{12} \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 (a+a \text{Sec}[e+f x])^3$$

$$\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(-210\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+210\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+\frac{1}{32}\mathrm{Sec}[e+f\,x]^8\left(5053\,\mathrm{Sin}[e+f\,x]+2681\,\mathrm{Sin}[3(e+f\,x)]+805\,\mathrm{Sin}[5(e+f\,x)]+105\,\mathrm{Sin}[7(e+f\,x)]\right)\right)+$$

$$\frac{1}{25\,165\,824\,f}29\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(-330\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+330\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+\frac{1}{32}\mathrm{Sec}[e+f\,x]^8\left(-6103\,\mathrm{Sin}[e+f\,x]+4213\,\mathrm{Sin}[3(e+f\,x)]+1265\,\mathrm{Sin}[5(e+f\,x)]+165\,\mathrm{Sin}[7(e+f\,x)]\right)\right)-$$

$$\frac{1}{8\,388\,608\,f}5\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(-858\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+858\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+\frac{1}{32}\mathrm{Sec}[e+f\,x]^8\left(3793\,\mathrm{Sin}[e+f\,x]-8707\,\mathrm{Sin}[3(e+f\,x)]+3289\,\mathrm{Sin}[5(e+f\,x)]+429\,\mathrm{Sin}[7(e+f\,x)]\right)\right)+$$

$$\frac{1}{33\,554\,432\,f}\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(-24\,310\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+24\,310\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]-\frac{1}{32}\mathrm{Sec}[e+f\,x]^8\left(45\,449\,\mathrm{Sin}[e+f\,x]+93\,781\,\mathrm{Sin}[3(e+f\,x)]+59\,729\,\mathrm{Sin}[5(e+f\,x)]+20\,613\,\mathrm{Sin}[7(e+f\,x)]\right)\right)-$$

$$\frac{1}{8192}9\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(\frac{32\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{16\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{4\,\mathrm{Sec}[e+f\,x]^4\,\mathrm{Tan}[e+f\,x]}{21\,f}+\frac{10\,\mathrm{Sec}[e+f\,x]^6\,\mathrm{Tan}[e+f\,x]}{63\,f}-\frac{\mathrm{Sec}[e+f\,x]^8\,\mathrm{Tan}[e+f\,x]}{9\,f}\right)+$$

$$\frac{1}{8192}\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6\left(\frac{32\,\mathrm{Tan}[e+f\,x]}{9\,f}+\frac{16\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{9\,f}-\frac{20\,\mathrm{Sec}[e+f\,x]^4\,\mathrm{Tan}[e+f\,x]}{3\,f}+\frac{22\,\mathrm{Sec}[e+f\,x]^6\,\mathrm{Tan}[e+f\,x]}{9\,f}-\frac{\mathrm{Sec}[e+f\,x]^8\,\mathrm{Tan}[e+f\,x]}{9\,f}\right)-\frac{1}{65\,536}$$

$$3\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6$$

$$\left(\frac{256\,\mathrm{Tan}[e+f\,x]}{9\,f}-\frac{448\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{9\,f}+\frac{80\,\mathrm{Sec}[e+f\,x]^4\,\mathrm{Tan}[e+f\,x]}{3\,f}-\frac{40\,\mathrm{Sec}[e+f\,x]^6\,\mathrm{Tan}[e+f\,x]}{9\,f}+\frac{\mathrm{Sec}[e+f\,x]^8\,\mathrm{Tan}[e+f\,x]}{9\,f}\right)+\frac{1}{16384}$$

$$3\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6$$

$$\left(\frac{64\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{32\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{8\,\mathrm{Sec}[e+f\,x]^4\,\mathrm{Tan}[e+f\,x]}{21\,f}-\frac{64\,\mathrm{Sec}[e+f\,x]^6\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{\mathrm{Sec}[e+f\,x]^8\,\mathrm{Tan}[e+f\,x]}{9\,f}\right)+\frac{1}{65536}$$

$$55\,\mathrm{Cos}[e+f\,x]^9\,\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^{12}\mathrm{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3\left(c-c\,\mathrm{Sec}[e+f\,x]\right)^6$$

$$\left(\frac{128\,\mathrm{Tan}[e+f\,x]}{315\,f}+\frac{64\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]}{315\,f}+\frac{16\,\mathrm{Sec}[e+f\,x]^4\,\mathrm{Tan}[e+f\,x]}{105\,f}+\frac{8\,\mathrm{Sec}[e+f\,x]^6\,\mathrm{Tan}[e+f\,x]}{63\,f}+\frac{\mathrm{Sec}[e+f\,x]^8\,\mathrm{Tan}[e+f\,x]}{9\,f}\right)$$

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

$$\int\frac{\mathrm{Sec}[e+f\,x]\,\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^3}{c-c\,\mathrm{Sec}[e+f\,x]}\,dx$$

Optimal (type 3, 100 leaves, 6 steps):

$$-\frac{15\,a^3\,\mathrm{ArcTanh}[\mathrm{Sin}[e+f\,x]]}{2\,c\,f}-\frac{10\,a^3\,\mathrm{Tan}[e+f\,x]}{c\,f}-\frac{5\,a^3\,\mathrm{Sec}[e+f\,x]\,\mathrm{Tan}[e+f\,x]}{2\,c\,f}-\frac{2\,a\,\left(a+a\,\mathrm{Sec}[e+f\,x]\right)^2\mathrm{Tan}[e+f\,x]}{f\,\left(c-c\,\mathrm{Sec}[e+f\,x]\right)}$$

Result (type 3, 287 leaves):

$$\frac{1}{16\,f\,\left(c-c\,\text{Sec}[e+f\,x]\right)}\,a^3\,\text{Cos}[e+f\,x]^2\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\left(1+\text{Sec}[e+f\,x]\right)^3\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(32\,\text{Csc}\left[\frac{e}{2}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sin}\left[\frac{f\,x}{2}\right]+\left(-30\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]+30\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}+(16\,\text{Sin}[f\,x])\Big/\left(\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\,\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$

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

$$\int\frac{\text{Sec}[e+f\,x]\,\left(a+a\,\text{Sec}[e+f\,x]\right)^3}{\left(c-c\,\text{Sec}[e+f\,x]\right)^2}\,dx$$

Optimal (type 3, 119 leaves, 6 steps):

$$\frac{5\,a^3\,\text{ArcTanh}[\text{Sin}[e+f\,x]]}{c^2\,f}+\frac{5\,a^3\,\text{Tan}[e+f\,x]}{c^2\,f}-\frac{2\,a\,\left(a+a\,\text{Sec}[e+f\,x]\right)^2\,\text{Tan}[e+f\,x]}{3\,f\,\left(c-c\,\text{Sec}[e+f\,x]\right)^2}+\frac{10\,\left(a^3+a^3\,\text{Sec}[e+f\,x]\right)\,\text{Tan}[e+f\,x]}{3\,f\,\left(c^2-c^2\,\text{Sec}[e+f\,x]\right)}$$

Result (type 3, 671 leaves):

$$\left(2\,\text{Cos}[e+f\,x]\,\text{Csc}\left[\frac{e}{2}\right]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^5\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Sin}\left[\frac{f\,x}{2}\right]\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)\Big/$$
$$\left(3\,f\,(c-c\,\text{Sec}[e+f\,x])^2\right)-\frac{2\,\text{Cos}[e+f\,x]\,\text{Cot}\left[\frac{e}{2}\right]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2}{3\,f\,(c-c\,\text{Sec}[e+f\,x])^2}+$$
$$\left(10\,\text{Cos}[e+f\,x]\,\text{Csc}\left[\frac{e}{2}\right]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^3\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Sin}\left[\frac{f\,x}{2}\right]\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^3\right)\Big/$$
$$\left(3\,f\,(c-c\,\text{Sec}[e+f\,x])^2\right)-\left(5\,\text{Cos}[e+f\,x]\,\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]\right.$$
$$\left.\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\right)\Big/\left(2\,f\,(c-c\,\text{Sec}[e+f\,x])^2\right)+$$
$$\left(5\,\text{Cos}[e+f\,x]\,\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\right.$$
$$\left.(a+a\,\text{Sec}[e+f\,x])^3\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\right)\Big/\left(2\,f\,(c-c\,\text{Sec}[e+f\,x])^2\right)+$$
$$\left(\text{Cos}[e+f\,x]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Sin}\left[\frac{f\,x}{2}\right]\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\right)\Big/$$
$$\left(2\,f\,(c-c\,\text{Sec}[e+f\,x])^2\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)\right)+$$
$$\left(\text{Cos}[e+f\,x]\,\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\,(a+a\,\text{Sec}[e+f\,x])^3\,\text{Sin}\left[\frac{f\,x}{2}\right]\,\text{Tan}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\right)\Big/$$
$$\left(2\,f\,(c-c\,\text{Sec}[e+f\,x])^2\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)\right)$$

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

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

Optimal (type 3, 121 leaves, 10 steps):

$$-\frac{35\,c^4\,\text{ArcTanh}[\text{Sin}[e+f\,x]]}{2\,a\,f}+\frac{28\,c^4\,\text{Tan}[e+f\,x]}{a\,f}-$$
$$\frac{21\,c^4\,\text{Sec}[e+f\,x]\,\text{Tan}[e+f\,x]}{2\,a\,f}+\frac{2\,c\,(c-c\,\text{Sec}[e+f\,x])^3\,\text{Tan}[e+f\,x]}{f\,(a+a\,\text{Sec}[e+f\,x])}+\frac{7\,c^4\,\text{Tan}[e+f\,x]^3}{3\,a\,f}$$

Result (type 3, 1036 leaves):

$$\left(35\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]\,(c-c\,\mathrm{Sec}[e+f\,x])^4\right)\Big/\,(16\,f\,(a+a\,\mathrm{Sec}[e+f\,x]))\,-$$

$$\left(35\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]\,(c-c\,\mathrm{Sec}[e+f\,x])^4\right)\Big/\,(16\,f\,(a+a\,\mathrm{Sec}[e+f\,x]))\,+$$

$$\left(2\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^7\,\mathrm{Sec}\left[\frac{e}{2}\right]\,(c-c\,\mathrm{Sec}[e+f\,x])^4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]\right)\Big/\,(f\,(a+a\,\mathrm{Sec}[e+f\,x]))\,+$$

$$\left(\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]\right)\Big/\left(48\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^3\right)+$$

$$\left(\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\left(-7\,\mathrm{Cos}\left[\frac{e}{2}\right]+8\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)\right)\Big/\left(48\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\left(35\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]\right)\Big/\left(24\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]-\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)\right)+$$

$$\left(\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]\right)\Big/\left(48\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^3\right)+$$

$$\left(\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\left(7\,\mathrm{Cos}\left[\frac{e}{2}\right]+8\,\mathrm{Sin}\left[\frac{e}{2}\right]\right)\right)\Big/\left(48\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\left(35\,\mathrm{Cos}[e+f\,x]^3\,\mathrm{Cot}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\mathrm{Csc}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(c-c\,\mathrm{Sec}[e+f\,x])^4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]\right)\Big/\left(24\,f\,(a+a\,\mathrm{Sec}[e+f\,x])\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)\right)$$

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

$$\int \frac{\mathrm{Sec}[e+f\,x]\,(c-c\,\mathrm{Sec}[e+f\,x])^3}{a+a\,\mathrm{Sec}[e+f\,x]}\,dx$$

Optimal (type 3, 100 leaves, 6 steps):

$$-\frac{15\,c^3\,\text{ArcTanh}[\text{Sin}[e+f\,x]]}{2\,a\,f}+\frac{10\,c^3\,\text{Tan}[e+f\,x]}{a\,f}-\frac{5\,c^3\,\text{Sec}[e+f\,x]\,\text{Tan}[e+f\,x]}{2\,a\,f}+\frac{2\,c\,(c-c\,\text{Sec}[e+f\,x])^2\,\text{Tan}[e+f\,x]}{f\,(a+a\,\text{Sec}[e+f\,x])}$$

Result (type 3, 287 leaves):

$$\frac{1}{16\,a\,f\,(1+\text{Sec}[e+f\,x])}\text{Cos}[e+f\,x]^2\,\text{Cot}\left[\frac{1}{2}(e+f\,x)\right]\text{Csc}\left[\frac{1}{2}(e+f\,x)\right]^4 (c-c\,\text{Sec}[e+f\,x])^3 \left(-32\,\text{Csc}\left[\frac{1}{2}(e+f\,x)\right]\text{Sec}\left[\frac{e}{2}\right]\text{Sin}\left[\frac{f\,x}{2}\right]+\text{Cot}\left[\frac{1}{2}(e+f\,x)\right]\left(-30\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+30\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}-(16\,\text{Sin}[f\,x])\Big/\left(\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right)\right)$$

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

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

Optimal (type 3, 74 leaves, 5 steps):

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

Result (type 3, 220 leaves):

$$\left(2\,c^2\,\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\left(4\,\text{Csc}\left[\frac{1}{2}(e+f\,x)\right]\text{Sec}\left[\frac{e}{2}\right]\text{Sin}\left[\frac{f\,x}{2}\right]+\text{Cot}\left[\frac{1}{2}(e+f\,x)\right]\left(3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]-3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right]+\text{Sin}[f\,x]\Big/\left(\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right)\right)\right)\Big/\left(a\,f\,(1+\text{Sec}[e+f\,x])\right)$$

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

$$\int \frac{\text{Sec}[e+f x]\,(c-c\,\text{Sec}[e+f x])^5}{(a+a\,\text{Sec}[e+f x])^2}\,dx$$

Optimal (type 3, 164 leaves, 11 steps):

$$\frac{105\,c^5\,\text{ArcTanh}[\text{Sin}[e+f x]]}{2\,a^2\,f}-\frac{84\,c^5\,\text{Tan}[e+f x]}{a^2\,f}+\frac{63\,c^5\,\text{Sec}[e+f x]\,\text{Tan}[e+f x]}{2\,a^2\,f}-\frac{6\,c^2\,(c-c\,\text{Sec}[e+f x])^3\,\text{Tan}[e+f x]}{f\,(a^2+a^2\,\text{Sec}[e+f x])}+\frac{2\,c\,(c-c\,\text{Sec}[e+f x])^4\,\text{Tan}[e+f x]}{3\,f\,(a+a\,\text{Sec}[e+f x])^2}-\frac{7\,c^5\,\text{Tan}[e+f x]^3}{a^2\,f}$$

Result (type 3, 380 leaves):

$$\frac{1}{3072\,a^2\,f\,(1+\text{Sec}[e+f x])^2}\text{Cot}\left[\frac{1}{2}(e+f x)\right]\text{Csc}\left[\frac{1}{2}(e+f x)\right]^6(c-c\,\text{Sec}[e+f x])^5\left(20160\,\text{Cos}[e+f x]^3\,\text{Cot}\left[\frac{1}{2}(e+f x)\right]^3\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)+\text{Csc}\left[\frac{1}{2}(e+f x)\right]^3\text{Sec}\left[\frac{e}{2}\right]\text{Sec}[e]\left(-1323\,\text{Sin}\left[\frac{f x}{2}\right]+3247\,\text{Sin}\left[\frac{3 f x}{2}\right]-2901\,\text{Sin}\left[e-\frac{f x}{2}\right]+1197\,\text{Sin}\left[e+\frac{f x}{2}\right]-3027\,\text{Sin}\left[2 e+\frac{f x}{2}\right]-273\,\text{Sin}\left[e+\frac{3 f x}{2}\right]+1827\,\text{Sin}\left[2 e+\frac{3 f x}{2}\right]-1693\,\text{Sin}\left[3 e+\frac{3 f x}{2}\right]+1995\,\text{Sin}\left[e+\frac{5 f x}{2}\right]-117\,\text{Sin}\left[2 e+\frac{5 f x}{2}\right]+1143\,\text{Sin}\left[3 e+\frac{5 f x}{2}\right]-969\,\text{Sin}\left[4 e+\frac{5 f x}{2}\right]+1173\,\text{Sin}\left[2 e+\frac{7 f x}{2}\right]+117\,\text{Sin}\left[3 e+\frac{7 f x}{2}\right]+747\,\text{Sin}\left[4 e+\frac{7 f x}{2}\right]-309\,\text{Sin}\left[5 e+\frac{7 f x}{2}\right]+494\,\text{Sin}\left[3 e+\frac{9 f x}{2}\right]+142\,\text{Sin}\left[4 e+\frac{9 f x}{2}\right]+352\,\text{Sin}\left[5 e+\frac{9 f x}{2}\right]\right)\right)$$

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

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

Optimal (type 3, 150 leaves, 7 steps):

$$\frac{35\,c^4\,\text{ArcTanh}[\text{Sin}[e+f x]]}{2\,a^2\,f}-\frac{70\,c^4\,\text{Tan}[e+f x]}{3\,a^2\,f}+\frac{35\,c^4\,\text{Sec}[e+f x]\,\text{Tan}[e+f x]}{6\,a^2\,f}+\frac{2\,c\,(c-c\,\text{Sec}[e+f x])^3\,\text{Tan}[e+f x]}{3\,f\,(a+a\,\text{Sec}[e+f x])^2}-\frac{14\,(c^2-c^2\,\text{Sec}[e+f x])^2\,\text{Tan}[e+f x]}{3\,f\,(a^2+a^2\,\text{Sec}[e+f x])}$$

Result (type 3, 349 leaves):

$$\frac{1}{3\,a^2\,f\,\left(1+\text{Sec}[e+f\,x]\right)^2}\,c^4\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sec}[e+f\,x]^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]^3\left(-256\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sin}\left[\frac{f\,x}{2}\right]-32\,\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]^3\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sin}\left[\frac{f\,x}{2}\right]+3\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]^3\left(-70\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]+70\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}-\left(24\,\text{Sin}[f\,x]\right)\Big/\left(\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\right)-32\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{e}{2}\right]\right)$$

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

$$\int \frac{\text{Sec}[e+f\,x]\,\left(c-c\,\text{Sec}[e+f\,x]\right)^3}{\left(a+a\,\text{Sec}[e+f\,x]\right)^2}\,dx$$

Optimal (type 3, 119 leaves, 6 steps):

$$\frac{5\,c^3\,\text{ArcTanh}[\text{Sin}[e+f\,x]]}{a^2\,f}-\frac{5\,c^3\,\text{Tan}[e+f\,x]}{a^2\,f}+\frac{2\,c\,\left(c-c\,\text{Sec}[e+f\,x]\right)^2\,\text{Tan}[e+f\,x]}{3\,f\,\left(a+a\,\text{Sec}[e+f\,x]\right)^2}-\frac{10\,\left(c^3-c^3\,\text{Sec}[e+f\,x]\right)\,\text{Tan}[e+f\,x]}{3\,f\,\left(a^2+a^2\,\text{Sec}[e+f\,x]\right)}$$

Result (type 3, 671 leaves):

$$\left(5 \text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c-c \text{Sec}[e+f x])^3\right) \Big/ \left(2 f (a+a \text{Sec}[e+f x])^2\right) -$$
$$\left(5 \text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c-c \text{Sec}[e+f x])^3\right) \Big/ \left(2 f (a+a \text{Sec}[e+f x])^2\right) +$$
$$\left(10 \text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^3 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3 \text{Sec}\left[\frac{e}{2}\right] (c-c \text{Sec}[e+f x])^3 \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(3 f (a+a \text{Sec}[e+f x])^2\right) +$$
$$\left(2 \text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^5 \text{Sec}\left[\frac{e}{2}\right] (c-c \text{Sec}[e+f x])^3 \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(3 f (a+a \text{Sec}[e+f x])^2\right) +$$
$$\left(\text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 (c-c \text{Sec}[e+f x])^3 \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(2 f (a+a \text{Sec}[e+f x])^2 \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right) +$$
$$\left(\text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 (c-c \text{Sec}[e+f x])^3 \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(2 f (a+a \text{Sec}[e+f x])^2 \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right) +$$
$$\frac{2 \text{Cos}[e+f x] \text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (c-c \text{Sec}[e+f x])^3 \text{Tan}\left[\frac{e}{2}\right]}{3 f (a+a \text{Sec}[e+f x])^2}$$

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

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

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

$$\frac{\text{Csc}[e+f x]}{a^2 c^2 f}-\frac{\text{Csc}[e+f x]^3}{3 a^2 c^2 f}$$

Result (type 3, 100 leaves):

$$\frac{1}{a^2 c^2}\left(\frac{5 \text{Cot}\left[\frac{1}{2} (e+f x)\right]}{12 f}-\frac{\text{Cot}\left[\frac{1}{2} (e+f x)\right] \text{Csc}\left[\frac{1}{2} (e+f x)\right]^2}{24 f}+\frac{5 \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{12 f}-\frac{\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2 \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{24 f}\right)$$

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

$$\int \frac{\text{Sec}[e+f x]\,(c-c\,\text{Sec}[e+f x])^4}{(a+a\,\text{Sec}[e+f x])^3}\,dx$$

Optimal (type 3, 164 leaves, 7 steps):

$$-\frac{7 c^4 \text{ArcTanh}[\text{Sin}[e+f x]]}{a^3 f}+\frac{7 c^4 \text{Tan}[e+f x]}{a^3 f}+\frac{2 c\,(c-c\,\text{Sec}[e+f x])^3\,\text{Tan}[e+f x]}{5 f\,(a+a\,\text{Sec}[e+f x])^3}-\frac{14\,(c^2-c^2\,\text{Sec}[e+f x])^2\,\text{Tan}[e+f x]}{15 a f\,(a+a\,\text{Sec}[e+f x])^2}+\frac{14\,(c^4-c^4\,\text{Sec}[e+f x])\,\text{Tan}[e+f x]}{3 f\,(a^3+a^3\,\text{Sec}[e+f x])}$$

Result (type 3, 826 leaves):

$$\left(7\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right](c-c\,\text{Sec}[e+f x])^4\right)\Big/\left(2 f\,(a+a\,\text{Sec}[e+f x])^3\right)-$$
$$\left(7\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right](c-c\,\text{Sec}[e+f x])^4\right)\Big/\left(2 f\,(a+a\,\text{Sec}[e+f x])^3\right)+$$
$$\left(76\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\text{Sec}\left[\frac{e}{2}\right](c-c\,\text{Sec}[e+f x])^4\,\text{Sin}\left[\frac{f x}{2}\right]\right)\Big/\left(15 f\,(a+a\,\text{Sec}[e+f x])^3\right)+$$
$$\left(8\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\text{Sec}\left[\frac{e}{2}\right](c-c\,\text{Sec}[e+f x])^4\,\text{Sin}\left[\frac{f x}{2}\right]\right)\Big/\left(15 f\,(a+a\,\text{Sec}[e+f x])^3\right)+$$
$$\left(2\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^7\text{Sec}\left[\frac{e}{2}\right](c-c\,\text{Sec}[e+f x])^4\,\text{Sin}\left[\frac{f x}{2}\right]\right)\Big/\left(5 f\,(a+a\,\text{Sec}[e+f x])^3\right)+$$
$$\left(\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2(c-c\,\text{Sec}[e+f x])^4\,\text{Sin}\left[\frac{f x}{2}\right]\right)\Big/\left(2 f\,(a+a\,\text{Sec}[e+f x])^3\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right)+$$
$$\left(\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^6\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2(c-c\,\text{Sec}[e+f x])^4\,\text{Sin}\left[\frac{f x}{2}\right]\right)\Big/\left(2 f\,(a+a\,\text{Sec}[e+f x])^3\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right)+$$
$$\frac{8\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^4\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4(c-c\,\text{Sec}[e+f x])^4\,\text{Tan}\left[\frac{e}{2}\right]}{15 f\,(a+a\,\text{Sec}[e+f x])^3}+$$
$$\frac{2\,\text{Cos}[e+f x]\,\text{Cot}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6(c-c\,\text{Sec}[e+f x])^4\,\text{Tan}\left[\frac{e}{2}\right]}{5 f\,(a+a\,\text{Sec}[e+f x])^3}$$

Problem 60: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 59 leaves, 4 steps):

$$\frac{\text{Csc}[e+f x]}{a^3 c^3 f}-\frac{2\,\text{Csc}[e+f x]^3}{3 a^3 c^3 f}+\frac{\text{Csc}[e+f x]^5}{5 a^3 c^3 f}$$

Result (type 3, 159 leaves):

$$-\frac{1}{a^3 c^3}\left(-\frac{89\,\text{Cot}\left[\frac{1}{2}(e+f x)\right]}{240 f}+\frac{31\,\text{Cot}\left[\frac{1}{2}(e+f x)\right]\text{Csc}\left[\frac{1}{2}(e+f x)\right]^2}{480 f}-\frac{\text{Cot}\left[\frac{1}{2}(e+f x)\right]\text{Csc}\left[\frac{1}{2}(e+f x)\right]^4}{160 f}-\frac{89\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{240 f}+\frac{31\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{480 f}-\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^4\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{160 f}\right)$$

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

$$\int \frac{\text{Sec}[e+f x]}{(a+a\,\text{Sec}[e+f x])^3\,(c-c\,\text{Sec}[e+f x])^4}\,dx$$

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

$$-\frac{\text{Cot}[e+f x]^7}{7 a^3 c^4 f}+\frac{\text{Csc}[e+f x]}{a^3 c^4 f}-\frac{\text{Csc}[e+f x]^3}{a^3 c^4 f}+\frac{3\,\text{Csc}[e+f x]^5}{5 a^3 c^4 f}-\frac{\text{Csc}[e+f x]^7}{7 a^3 c^4 f}$$

Result (type 3, 211 leaves):

$$\frac{1}{35840\,a^3 c^4 f}\text{Csc}[e]\,\text{Csc}\left[\frac{1}{2}(e+f x)\right]^2\text{Csc}[e+f x]^5\,\big(2912\,\text{Sin}[e]+416\,\text{Sin}[f x]-7620\,\text{Sin}[e+f x]+1905\,\text{Sin}[2(e+f x)]+3810\,\text{Sin}[3(e+f x)]-1524\,\text{Sin}[4(e+f x)]-762\,\text{Sin}[5(e+f x)]+381\,\text{Sin}[6(e+f x)]-2016\,\text{Sin}[2e+f x]+2080\,\text{Sin}[e+2 f x]-1680\,\text{Sin}[3e+2 f x]+240\,\text{Sin}[2e+3 f x]+560\,\text{Sin}[4e+3 f x]-880\,\text{Sin}[3e+4 f x]+560\,\text{Sin}[5e+4 f x]+400\,\text{Sin}[4e+5 f x]-560\,\text{Sin}[6e+5 f x]+80\,\text{Sin}[5e+6 f x]\big)$$

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

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

Optimal (type 3, 120 leaves, 10 steps):

$$\frac{2\,\text{Cot}[e+f x]^9}{9 a^3 c^5 f}+\frac{\text{Csc}[e+f x]}{a^3 c^5 f}-\frac{5\,\text{Csc}[e+f x]^3}{3 a^3 c^5 f}+\frac{9\,\text{Csc}[e+f x]^5}{5 a^3 c^5 f}-\frac{\text{Csc}[e+f x]^7}{a^3 c^5 f}+\frac{2\,\text{Csc}[e+f x]^9}{9 a^3 c^5 f}$$

Result (type 3, 257 leaves):

$$-\frac{1}{184320\, a^3 c^5 f \left(-1+\text{Sec}[e+f x]\right)^5 \left(1+\text{Sec}[e+f x]\right)^3}\text{Csc}[e]\,\text{Sec}[e+f x]^7 \big(-33024\,\text{Sin}[e]+6144\,\text{Sin}[f x]+76455\,\text{Sin}[e+f x]-33980\,\text{Sin}[2(e+f x)]-32281\,\text{Sin}[3(e+f x)]+27184\,\text{Sin}[4(e+f x)]+1699\,\text{Sin}[5(e+f x)]-6796\,\text{Sin}[6(e+f x)]+1699\,\text{Sin}[7(e+f x)]+22656\,\text{Sin}[2e+f x]-17216\,\text{Sin}[e+2 f x]+4416\,\text{Sin}[3e+2 f x]+3200\,\text{Sin}[2e+3 f x]-15360\,\text{Sin}[4e+3 f x]+12160\,\text{Sin}[3e+4 f x]-1920\,\text{Sin}[5e+4 f x]-5120\,\text{Sin}[4e+5 f x]+5760\,\text{Sin}[6e+5 f x]+320\,\text{Sin}[5e+6 f x]-2880\,\text{Sin}[7e+6 f x]+640\,\text{Sin}[6e+7 f x]\big)\,\text{Tan}[e+f x]$$

Problem 68: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[e+f x]\left(a+a\,\text{Sec}[e+f x]\right)}{\sqrt{c-c\,\text{Sec}[e+f x]}}\,dx$$

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

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

Result (type 3, 167 leaves):

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

Problem 69: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 76 leaves, 3 steps):

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

Result (type 3, 298 leaves):

$$a\left(\left(2\,e^{-\frac{1}{2}i(e+fx)}\sqrt{\frac{e^{i(e+fx)}}{1+e^{2i(e+fx)}}}\sqrt{1+e^{2i(e+fx)}}\left(\text{Log}\left[1-e^{i(e+fx)}\right]-\text{Log}\left[1+e^{i(e+fx)}+\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\right]\right)\text{Sec}[e+fx]^{3/2}\,\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]^3\right)\Big/\left(f\,(c-c\,\text{Sec}[e+fx])^{3/2}\right)+\left(\text{Sec}[e+fx]^2\left(\frac{4\,\text{Cos}\left[\frac{e}{2}\right]\text{Cos}\left[\frac{fx}{2}\right]}{f}-\frac{2\,\text{Cot}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]}{f}+\frac{2\,\text{Csc}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]^2\text{Sin}\left[\frac{fx}{2}\right]}{f}-\frac{4\,\text{Sin}\left[\frac{e}{2}\right]\text{Sin}\left[\frac{fx}{2}\right]}{f}\right)\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]^3\right)\Big/\left(c-c\,\text{Sec}[e+fx]\right)^{3/2}\right)$$

Problem 70: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[e+fx]\,(a+a\,\text{Sec}[e+fx])}{(c-c\,\text{Sec}[e+fx])^{5/2}}\,dx$$

Optimal (type 3, 113 leaves, 4 steps):

$$\frac{a\,\text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+fx]}{\sqrt{2}\sqrt{c-c\,\text{Sec}[e+fx]}}\right]}{8\sqrt{2}\,c^{5/2}\,f}-\frac{a\,\text{Tan}[e+fx]}{2\,f\,(c-c\,\text{Sec}[e+fx])^{5/2}}+\frac{a\,\text{Tan}[e+fx]}{8\,c\,f\,(c-c\,\text{Sec}[e+fx])^{3/2}}$$

Result (type 3, 362 leaves):

$$a\left(\left(e^{-\frac{1}{2}i(e+fx)}\sqrt{\frac{e^{i(e+fx)}}{1+e^{2i(e+fx)}}}\sqrt{1+e^{2i(e+fx)}}\left(-\text{Log}\left[1-e^{i(e+fx)}\right]+\text{Log}\left[1+e^{i(e+fx)}+\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\right]\right)\text{Sec}[e+fx]^{5/2}\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]^5\right)\Big/\left(2f\left(c-c\,\text{Sec}[e+fx]\right)^{5/2}\right)+\left(\text{Sec}[e+fx]^3\left(-\frac{3\text{Cos}\left[\frac{e}{2}\right]\text{Cos}\left[\frac{fx}{2}\right]}{f}+\frac{7\text{Cot}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]}{2f}-\frac{\text{Cot}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]^3}{f}-\frac{7\text{Csc}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]^2\text{Sin}\left[\frac{fx}{2}\right]}{2f}+\frac{\text{Csc}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]^4\text{Sin}\left[\frac{fx}{2}\right]}{f}+\frac{3\text{Sin}\left[\frac{e}{2}\right]\text{Sin}\left[\frac{fx}{2}\right]}{f}\right)\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]^5\right)\Big/\left(c-c\,\text{Sec}[e+fx]\right)^{5/2}\right)$$

Problem 75: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[e+fx]\left(a+a\,\text{Sec}[e+fx]\right)^2}{\sqrt{c-c\,\text{Sec}[e+fx]}}\,dx$$

Optimal (type 3, 117 leaves, 4 steps):

$$-\frac{4\sqrt{2}\,a^2\,\text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+fx]}{\sqrt{2}\sqrt{c-c\,\text{Sec}[e+fx]}}\right]}{\sqrt{c}\,f}+\frac{16a^2\,\text{Tan}[e+fx]}{3f\sqrt{c-c\,\text{Sec}[e+fx]}}-\frac{2a^2\sqrt{c-c\,\text{Sec}[e+fx]}\,\text{Tan}[e+fx]}{3cf}$$

Result (type 3, 292 leaves):

$$\frac{1}{3f\sqrt{c-c\,\text{Sec}[e+fx]}}4a^2e^{-\frac{1}{2}i(e+fx)}\text{Sec}[e+fx]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+i\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\text{Sin}\left[\frac{1}{2}(e+fx)\right]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]\left(7+3\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\,\text{Log}\left[1-e^{i(e+fx)}\right]-3\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\,\text{Log}\left[1+e^{i(e+fx)}+\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\right]+\text{Sec}[e+fx]\right)-3i\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\left(\text{Log}\left[1-e^{i(e+fx)}\right]-\text{Log}\left[1+e^{i(e+fx)}+\sqrt{2}\sqrt{1+e^{2i(e+fx)}}\right]\right)\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)$$

Problem 76: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 113 leaves, 4 steps):

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

Result (type 3, 337 leaves):

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

$$\left(\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right] (a+a \,\text{Sec}[e+f x])^2 \left(\frac{4 \,\text{Cos}\left[\frac{e}{2}\right] \text{Cos}\left[\frac{f x}{2}\right]}{f}-\frac{\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{f}+\frac{\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sin}\left[\frac{f x}{2}\right]}{f}-\frac{4 \,\text{Sin}\left[\frac{e}{2}\right] \text{Sin}\left[\frac{f x}{2}\right]}{f}\right) \text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\right) \Big/ (c-c \,\text{Sec}[e+f x])^{3/2}$$

Problem 77: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 117 leaves, 4 steps):

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

Result (type 3, 378 leaves):

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

$$\left(\left(e^{-\frac{3 i e}{2}} \left(-1+e^{i e}\right) \left(\text{Cos}\left[\frac{f x}{2}\right]+i\,\text{Sin}\left[\frac{f x}{2}\right]\right) \left(-9 i e^{i e} \left(1+e^{i e}\right) \text{Cos}\left[\frac{f x}{2}\right]+i \left(1+e^{3 i e}\right) \text{Cos}\left[\frac{3 f x}{2}\right]-9 e^{i e} \text{Sin}\left[\frac{f x}{2}\right]+9 e^{2 i e} \text{Sin}\left[\frac{f x}{2}\right]+\text{Sin}\left[\frac{3 f x}{2}\right]-e^{3 i e} \text{Sin}\left[\frac{3 f x}{2}\right]\right)\right) \middle/ \left(16 \sqrt{\text{Sec}[e+f x]}\right)+3 \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}} \left(-\text{Log}\left[1-e^{i (e+f x)}\right]+\text{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \text{Sin}\left[\frac{e}{2}\right] \text{Sin}\left[\frac{1}{2}(e+f x)\right]^4\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]$$

Problem 78: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[e+f x] \left(a+a\,\text{Sec}[e+f x]\right)^2}{\left(c-c\,\text{Sec}[e+f x]\right)^{7/2}} \, dx$$

Optimal (type 3, 164 leaves, 5 steps):

$$-\frac{a^2 \text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c\,\text{Sec}[e+f x]}}\right]}{16 \sqrt{2}\, c^{7/2} f}-\frac{\left(a^2+a^2 \text{Sec}[e+f x]\right) \text{Tan}[e+f x]}{3 f \left(c-c\,\text{Sec}[e+f x]\right)^{7/2}}+\frac{a^2 \text{Tan}[e+f x]}{4 c f \left(c-c\,\text{Sec}[e+f x]\right)^{5/2}}-\frac{a^2 \text{Tan}[e+f x]}{16 c^2 f \left(c-c\,\text{Sec}[e+f x]\right)^{3/2}}$$

Result (type 3, 486 leaves):

$$\left(e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}} \left(-\text{Log}\left[1-e^{i (e+f x)}\right]+\text{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \text{Sec}[e+f x]^{3/2} (a+a \text{Sec}[e+f x])^2 \text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^3 \text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^4\right) \Big/ \left(8 f (c-c \text{Sec}[e+f x])^{7/2}\right)+$$

$$\left(\text{Sec}[e+f x]^2 (a+a \text{Sec}[e+f x])^2 \left(\frac{7 \text{Cos}\left[\frac{e}{2}\right] \text{Cos}\left[\frac{f x}{2}\right]}{12 f}-\frac{43 \text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{24 f}+\frac{17 \text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{12 f}-\frac{\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^5}{3 f}+\frac{43 \text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sin}\left[\frac{f x}{2}\right]}{24 f}-\frac{17 \text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Sin}\left[\frac{f x}{2}\right]}{12 f}+\frac{\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \text{Sin}\left[\frac{f x}{2}\right]}{3 f}-\frac{7 \text{Sin}\left[\frac{e}{2}\right] \text{Sin}\left[\frac{f x}{2}\right]}{12 f}\right) \text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^3 \text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^4\right) \Big/ (c-c \text{Sec}[e+f x])^{7/2}$$

Problem 83: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 164 leaves, 5 steps):

$$-\frac{8 \sqrt{2} a^3 \text{ArcTan}\left[\frac{\sqrt{c} \text{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c \text{Sec}[e+f x]}}\right]}{\sqrt{c} f}+\frac{8 a^3 \text{Tan}[e+f x]}{f \sqrt{c-c \text{Sec}[e+f x]}}+\frac{2 a (a+a \text{Sec}[e+f x])^2 \text{Tan}[e+f x]}{5 f \sqrt{c-c \text{Sec}[e+f x]}}+\frac{4 \left(a^3+a^3 \text{Sec}[e+f x]\right) \text{Tan}[e+f x]}{3 f \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 223 leaves):

$$-\left(\left(2 i a^3 \left(-1+e^{i (e+f x)}\right) \left(73+105 e^{i (e+f x)}+190 e^{2 i (e+f x)}+190 e^{3 i (e+f x)}+105 e^{4 i (e+f x)}+73 e^{5 i (e+f x)}+60 \sqrt{2} \left(1+e^{2 i (e+f x)}\right)^{5/2} \text{Log}\left[1-e^{i (e+f x)}\right]-60 \sqrt{2} \left(1+e^{2 i (e+f x)}\right)^{5/2} \text{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right)\right) \Big/ \left(15 \left(1+e^{2 i (e+f x)}\right)^3 f \sqrt{c-c \text{Sec}[e+f x]}\right)\right)$$

Problem 84: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 168 leaves, 5 steps):

$$\frac{10\sqrt{2}\,a^3\,\text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sec}[e+f x]}}\right]}{c^{3/2}\,f}-\frac{a\,(a+a\,\text{Sec}[e+f x])^2\,\text{Tan}[e+f x]}{f\,(c-c\,\text{Sec}[e+f x])^{3/2}}-\frac{10\,a^3\,\text{Tan}[e+f x]}{c\,f\,\sqrt{c-c\,\text{Sec}[e+f x]}}-\frac{5\,(a^3+a^3\,\text{Sec}[e+f x])\,\text{Tan}[e+f x]}{3\,c\,f\,\sqrt{c-c\,\text{Sec}[e+f x]}}$$

Result (type 3, 377 leaves):

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

$$\left(\text{Cos}[e+f x]\,\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^3(a+a\,\text{Sec}[e+f x])^3\left(\frac{19\,\text{Cos}\left[\frac{e}{2}\right]\text{Cos}\left[\frac{f x}{2}\right]}{3\,f}-\frac{\text{Cot}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{f}+\frac{\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]\text{Sec}[e+f x]}{3\,f}+\frac{\text{Csc}\left[\frac{e}{2}\right]\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\text{Sin}\left[\frac{f x}{2}\right]}{f}-\frac{19\,\text{Sin}\left[\frac{e}{2}\right]\text{Sin}\left[\frac{f x}{2}\right]}{3\,f}\right)\text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\right)\Big/(c-c\,\text{Sec}[e+f x])^{3/2}$$

Problem 85: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 174 leaves, 5 steps):

$$-\frac{15 a^3 \text{ArcTan}\left[\frac{\sqrt{c} \text{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c \text{Sec}[e+f x]}}\right]}{2 \sqrt{2} c^{5/2} f}-\frac{a (a+a \text{Sec}[e+f x])^2 \text{Tan}[e+f x]}{2 f (c-c \text{Sec}[e+f x])^{5/2}}+\frac{5 \left(a^3+a^3 \text{Sec}[e+f x]\right) \text{Tan}[e+f x]}{4 c f (c-c \text{Sec}[e+f x])^{3/2}}+\frac{15 a^3 \text{Tan}[e+f x]}{4 c^2 f \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 411 leaves):

$$\left(15 e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}} \left(\text{Log}\left[1-e^{i (e+f x)}\right]-\text{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right] (a+a \text{Sec}[e+f x])^3 \text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left(4 f \sqrt{\text{Sec}[e+f x]} (c-c \text{Sec}[e+f x])^{5/2}\right)+\left(\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right] (a+a \text{Sec}[e+f x])^3 \left(\frac{9 \text{Cos}\left[\frac{e}{2}\right] \text{Cos}\left[\frac{f x}{2}\right]}{2 f}-\frac{\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{4 f}-\frac{\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{2 f}+\frac{\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sin}\left[\frac{f x}{2}\right]}{4 f}+\frac{\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Sin}\left[\frac{f x}{2}\right]}{2 f}-\frac{9 \text{Sin}\left[\frac{e}{2}\right] \text{Sin}\left[\frac{f x}{2}\right]}{2 f}\right) \text{Tan}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ (c-c \text{Sec}[e+f x])^{5/2}$$

Problem 90: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[e+f x]}{(a+a \text{Sec}[e+f x]) \sqrt{c-c \text{Sec}[e+f x]}} \, dx$$

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

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

Result (type 3, 204 leaves):

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

Problem 91: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 122 leaves, 4 steps):

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

Result (type 3, 220 leaves):

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

Problem 92: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$-\frac{15\,\text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sec}[e+f x]}}\right]}{32\sqrt{2}\,a\,c^{5/2}\,f}-\frac{5\,\text{Tan}[e+f x]}{8\,a\,f\,(c-c\,\text{Sec}[e+f x])^{5/2}}+\frac{\text{Tan}[e+f x]}{f\,(a+a\,\text{Sec}[e+f x])\,(c-c\,\text{Sec}[e+f x])^{5/2}}-\frac{15\,\text{Tan}[e+f x]}{32\,a\,c\,f\,(c-c\,\text{Sec}[e+f x])^{3/2}}$$

Result (type 3, 441 leaves):

$$\left(15\, e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}}\, \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \left(\text{Log}\left[1-e^{i (e+f x)}\right]-\text{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \text{Sec}[e+f x]^{7/2}\, \text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left(4 f (a+a\,\text{Sec}[e+f x]) (c-c\,\text{Sec}[e+f x])^{5/2}\right) + \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sec}[e+f x]^4 \left(-\frac{3\,\text{Cos}\left[\frac{e}{2}\right] \text{Cos}\left[\frac{f x}{2}\right]}{2 f}+\frac{15\,\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{4 f}-\frac{\text{Cot}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{2 f}-\frac{2\,\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]}{f}-\frac{15\,\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sin}\left[\frac{f x}{2}\right]}{4 f}+\frac{\text{Csc}\left[\frac{e}{2}\right] \text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \text{Sin}\left[\frac{f x}{2}\right]}{2 f}+\frac{3\,\text{Sin}\left[\frac{e}{2}\right] \text{Sin}\left[\frac{f x}{2}\right]}{2 f}\right) \text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left((a+a\,\text{Sec}[e+f x]) (c-c\,\text{Sec}[e+f x])^{5/2}\right)$$

Problem 97: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 138 leaves, 4 steps):

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

Result (type 3, 296 leaves):

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

Problem 98: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 169 leaves, 5 steps):

$$-\frac{5 \operatorname{ArcTan}\left[\frac{\sqrt{c} \operatorname{Tan}[e+f x]}{\sqrt{2}\sqrt{c-c \operatorname{Sec}[e+f x]}}\right]}{8\sqrt{2}\, a^2 c^{3/2} f}-\frac{5 \operatorname{Tan}[e+f x]}{8 a^2 f\left(c-c \operatorname{Sec}[e+f x]\right)^{3/2}}+$$
$$\frac{\operatorname{Tan}[e+f x]}{3 f\left(a+a \operatorname{Sec}[e+f x]\right)^2\left(c-c \operatorname{Sec}[e+f x]\right)^{3/2}}+\frac{5 \operatorname{Tan}[e+f x]}{6 f\left(a^2+a^2 \operatorname{Sec}[e+f x]\right)\left(c-c \operatorname{Sec}[e+f x]\right)^{3/2}}$$

Result (type 3, 395 leaves):

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

$$\left(\operatorname{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \operatorname{Sec}[e+f x]^4 \left(-\frac{26 \operatorname{Cos}\left[\frac{e}{2}\right] \operatorname{Cos}\left[\frac{f x}{2}\right]}{3 f}-\frac{\operatorname{Cot}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{f}+\frac{20 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]}{3 f}-\frac{2 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{3 f}+\frac{\operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \operatorname{Sin}\left[\frac{f x}{2}\right]}{f}+\frac{26 \operatorname{Sin}\left[\frac{e}{2}\right] \operatorname{Sin}\left[\frac{f x}{2}\right]}{3 f}\right) \operatorname{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\right) \Big/ \left((a+a \operatorname{Sec}[e+f x])^2 (c-c \operatorname{Sec}[e+f x])^{3/2}\right)$$

Problem 99: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 203 leaves, 6 steps):

$$-\frac{35 \operatorname{ArcTan}\left[\frac{\sqrt{c} \operatorname{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c \operatorname{Sec}[e+f x]}}\right]}{64 \sqrt{2} a^2 c^{5/2} f}-\frac{35 \operatorname{Tan}[e+f x]}{48 a^2 f (c-c \operatorname{Sec}[e+f x])^{5/2}}+\frac{\operatorname{Tan}[e+f x]}{3 f (a+a \operatorname{Sec}[e+f x])^2 (c-c \operatorname{Sec}[e+f x])^{5/2}}+\frac{7 \operatorname{Tan}[e+f x]}{6 f \left(a^2+a^2 \operatorname{Sec}[e+f x]\right) (c-c \operatorname{Sec}[e+f x])^{5/2}}-\frac{35 \operatorname{Tan}[e+f x]}{64 a^2 c f (c-c \operatorname{Sec}[e+f x])^{3/2}}$$

Result (type 3, 465 leaves):

$$\left(35\, e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}} \operatorname{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \left(\operatorname{Log}\left[1-e^{i (e+f x)}\right]-\operatorname{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \operatorname{Sec}[e+f x]^{9/2} \operatorname{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left(4 f (a+a \operatorname{Sec}[e+f x])^2 (c-c \operatorname{Sec}[e+f x])^{5/2}\right)+$$

$$\left(\operatorname{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \operatorname{Sec}[e+f x]^5 \left(\frac{43 \operatorname{Cos}\left[\frac{e}{2}\right] \operatorname{Cos}\left[\frac{f x}{2}\right]}{6 f}+\frac{19 \operatorname{Cot}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{4 f}-\frac{\operatorname{Cot}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{2 f}-\frac{26 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]}{3 f}+\frac{2 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{3 f}-\frac{19 \operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \operatorname{Sin}\left[\frac{f x}{2}\right]}{4 f}+\frac{\operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 \operatorname{Sin}\left[\frac{f x}{2}\right]}{2 f}-\frac{43 \operatorname{Sin}\left[\frac{e}{2}\right] \operatorname{Sin}\left[\frac{f x}{2}\right]}{6 f}\right) \operatorname{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left((a+a \operatorname{Sec}[e+f x])^2 (c-c \operatorname{Sec}[e+f x])^{5/2}\right)$$

Problem 104: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Sec}[e+f x]}{(a+a \operatorname{Sec}[e+f x])^3 \sqrt{c-c \operatorname{Sec}[e+f x]}} \, dx$$

Optimal (type 3, 181 leaves, 5 steps):

$$-\frac{\operatorname{ArcTan}\left[\frac{\sqrt{c} \operatorname{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c \operatorname{Sec}[e+f x]}}\right]}{4 \sqrt{2}\, a^3 \sqrt{c}\, f}+\frac{\operatorname{Tan}[e+f x]}{5 f (a+a \operatorname{Sec}[e+f x])^3 \sqrt{c-c \operatorname{Sec}[e+f x]}}+\frac{\operatorname{Tan}[e+f x]}{6 a f (a+a \operatorname{Sec}[e+f x])^2 \sqrt{c-c \operatorname{Sec}[e+f x]}}+\frac{\operatorname{Tan}[e+f x]}{4 f \left(a^3+a^3 \operatorname{Sec}[e+f x]\right) \sqrt{c-c \operatorname{Sec}[e+f x]}}$$

Result (type 3, 334 leaves):

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

$$\left(\sqrt{\frac{e^{i\,(e+f\,x)}}{1+e^{2\,i\,(e+f\,x)}}}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^5\,\left(37\,\sqrt{2}\,\left(1+e^{i\,(e+f\,x)}\right)+15\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\text{Log}\left[1-e^{i\,(e+f\,x)}\right]-\right.\right.$$

$$\left.\left.15\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\,\text{Log}\left[1+e^{i\,(e+f\,x)}+\sqrt{2}\,\sqrt{1+e^{2\,i\,(e+f\,x)}}\right]\right)-\right.$$

$$3\,e^{\frac{1}{2}\,i\,(e+f\,x)}\,\sqrt{\text{Sec}[e+f\,x]}+23\,e^{\frac{1}{2}\,i\,(e+f\,x)}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\sqrt{\text{Sec}[e+f\,x]}-$$

$$\left.71\,e^{\frac{1}{2}\,i\,(e+f\,x)}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^4\,\sqrt{\text{Sec}[e+f\,x]}\right)\,\text{Sec}[e+f\,x]^{7/2}\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]$$

Problem 105: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 212 leaves, 6 steps):

$$-\frac{7\,\text{ArcTan}\left[\frac{\sqrt{c}\,\text{Tan}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}}\right]}{16\,\sqrt{2}\,a^3\,c^{3/2}\,f}-\frac{7\,\text{Tan}[e+f\,x]}{16\,a^3\,f\,\left(c-c\,\text{Sec}[e+f\,x]\right)^{3/2}}+$$

$$\frac{\text{Tan}[e+f\,x]}{5\,f\,\left(a+a\,\text{Sec}[e+f\,x]\right)^3\,\left(c-c\,\text{Sec}[e+f\,x]\right)^{3/2}}+\frac{7\,\text{Tan}[e+f\,x]}{30\,a\,f\,\left(a+a\,\text{Sec}[e+f\,x]\right)^2\,\left(c-c\,\text{Sec}[e+f\,x]\right)^{3/2}}+$$

$$\frac{7\,\text{Tan}[e+f\,x]}{12\,f\,\left(a^3+a^3\,\text{Sec}[e+f\,x]\right)\,\left(c-c\,\text{Sec}[e+f\,x]\right)^{3/2}}$$

Result (type 3, 417 leaves):

$$-\left(\left(7\, e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}} \operatorname{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \left(\operatorname{Log}\left[1-e^{i (e+f x)}\right]-\operatorname{Log}\left[1+e^{i (e+f x)}+\sqrt{2} \sqrt{1+e^{2 i (e+f x)}}\right]\right) \operatorname{Sec}[e+f x]^{9/2} \operatorname{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\right) \Big/ \left(f\, (a+a \operatorname{Sec}[e+f x])^3 (c-c \operatorname{Sec}[e+f x])^{3/2}\right)\right)+$$

$$\left(\operatorname{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \operatorname{Sec}[e+f x]^5 \left(-\frac{278 \operatorname{Cos}\left[\frac{e}{2}\right] \operatorname{Cos}\left[\frac{f x}{2}\right]}{15 f}-\frac{\operatorname{Cot}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{f}+\frac{242 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]}{15 f}-\frac{56 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{15 f}+\frac{2 \operatorname{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^5}{5 f}+\frac{\operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \operatorname{Sin}\left[\frac{f x}{2}\right]}{f}+\frac{278 \operatorname{Sin}\left[\frac{e}{2}\right] \operatorname{Sin}\left[\frac{f x}{2}\right]}{15 f}\right) \operatorname{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^3\right) \Big/ \left((a+a \operatorname{Sec}[e+f x])^3 (c-c \operatorname{Sec}[e+f x])^{3/2}\right)$$

Problem 106: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\operatorname{Sec}[e+f x]}{(a+a \operatorname{Sec}[e+f x])^3 (c-c \operatorname{Sec}[e+f x])^{5/2}} \, dx$$

Optimal (type 3, 246 leaves, 7 steps):

$$-\frac{63 \operatorname{ArcTan}\left[\frac{\sqrt{c} \operatorname{Tan}[e+f x]}{\sqrt{2} \sqrt{c-c \operatorname{Sec}[e+f x]}}\right]}{128 \sqrt{2}\, a^3 c^{5/2} f}-\frac{21 \operatorname{Tan}[e+f x]}{32 a^3 f (c-c \operatorname{Sec}[e+f x])^{5/2}}+\frac{\operatorname{Tan}[e+f x]}{5 f (a+a \operatorname{Sec}[e+f x])^3 (c-c \operatorname{Sec}[e+f x])^{5/2}}+\frac{3 \operatorname{Tan}[e+f x]}{10 a f (a+a \operatorname{Sec}[e+f x])^2 (c-c \operatorname{Sec}[e+f x])^{5/2}}+\frac{21 \operatorname{Tan}[e+f x]}{20 f \left(a^3+a^3 \operatorname{Sec}[e+f x]\right) (c-c \operatorname{Sec}[e+f x])^{5/2}}-\frac{63 \operatorname{Tan}[e+f x]}{128 a^3 c f (c-c \operatorname{Sec}[e+f x])^{3/2}}$$

Result (type 3, 487 leaves):

$$\left(63\, e^{-\frac{1}{2} i (e+f x)} \sqrt{\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}} \sqrt{1+e^{2 i (e+f x)}}\, \mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \left(\mathrm{Log}\left[1-e^{i (e+f x)}\right]-\mathrm{Log}\left[1+e^{i (e+f x)}+\sqrt{2}\sqrt{1+e^{2 i (e+f x)}}\right]\right) \mathrm{Sec}[e+f x]^{11/2}\, \mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left(4 f\, (a+a\,\mathrm{Sec}[e+f x])^3\, (c-c\,\mathrm{Sec}[e+f x])^{5/2}\right) +$$

$$\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \mathrm{Sec}[e+f x]^6 \left(\frac{257\,\mathrm{Cos}\left[\frac{e}{2}\right]\mathrm{Cos}\left[\frac{f x}{2}\right]}{10 f}+\frac{23\,\mathrm{Cot}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]}{4 f}-\frac{\mathrm{Cot}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{2 f}-\frac{124\,\mathrm{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]}{5 f}+\frac{22\,\mathrm{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^3}{5 f}-\frac{2\,\mathrm{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^5}{5 f}-\frac{23\,\mathrm{Csc}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\mathrm{Sin}\left[\frac{f x}{2}\right]}{4 f}+\frac{\mathrm{Csc}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^4\mathrm{Sin}\left[\frac{f x}{2}\right]}{2 f}-\frac{257\,\mathrm{Sin}\left[\frac{e}{2}\right]\mathrm{Sin}\left[\frac{f x}{2}\right]}{10 f}\right) \mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^5\right) \Big/ \left((a+a\,\mathrm{Sec}[e+f x])^3\, (c-c\,\mathrm{Sec}[e+f x])^{5/2}\right)$$

Problem 107: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[e+f x]\, \sqrt{a+a\,\mathrm{Sec}[e+f x]}\, (c-c\,\mathrm{Sec}[e+f x])^{5/2}\, dx$$

Optimal (type 3, 43 leaves, 1 step):

$$\frac{a\,(c-c\,\mathrm{Sec}[e+f x])^{5/2}\,\mathrm{Tan}[e+f x]}{3 f \sqrt{a+a\,\mathrm{Sec}[e+f x]}}$$

Result (type 3, 87 leaves):

$$\frac{1}{12 f} c^2 \left(5-6\,\mathrm{Cos}[e+f x]+3\,\mathrm{Cos}[2 (e+f x)]\right) \mathrm{Csc}\left[\frac{1}{2}(e+f x)\right] \mathrm{Sec}\left[\frac{1}{2}(e+f x)\right] \mathrm{Sec}[e+f x]^2 \sqrt{a (1+\mathrm{Sec}[e+f x])}\, \sqrt{c-c\,\mathrm{Sec}[e+f x]}$$

Problem 110: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\mathrm{Sec}[e+f x]\, \sqrt{a+a\,\mathrm{Sec}[e+f x]}}{\sqrt{c-c\,\mathrm{Sec}[e+f x]}}\, dx$$

Optimal (type 3, 51 leaves, 1 step):

$$\frac{a\,\mathrm{Log}[1-\mathrm{Sec}[e+f x]]\,\mathrm{Tan}[e+f x]}{f \sqrt{a+a\,\mathrm{Sec}[e+f x]}\, \sqrt{c-c\,\mathrm{Sec}[e+f x]}}$$

Result (type 3, 99 leaves):

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

Problem 117: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\mathrm{Sec}[e+fx]\,(a+a\,\mathrm{Sec}[e+fx])^{3/2}}{\sqrt{c-c\,\mathrm{Sec}[e+fx]}}\,dx$$

Optimal (type 3, 95 leaves, 2 steps):

$$\frac{2a^2\,\mathrm{Log}[1-\mathrm{Sec}[e+fx]]\,\mathrm{Tan}[e+fx]}{f\sqrt{a+a\,\mathrm{Sec}[e+fx]}\,\sqrt{c-c\,\mathrm{Sec}[e+fx]}}+\frac{a\sqrt{a+a\,\mathrm{Sec}[e+fx]}\,\mathrm{Tan}[e+fx]}{f\sqrt{c-c\,\mathrm{Sec}[e+fx]}}$$

Result (type 3, 174 leaves):

$$\left(\sqrt{2}\,a\,(1+\mathrm{Cos}[e+fx])\left(4\,\mathrm{Log}\left[1-e^{i(e+fx)}\right]-2\,\mathrm{Log}\left[1+e^{2i(e+fx)}\right]\right)\mathrm{Sec}[e+fx]^{3/2}\sqrt{a\,(1+\mathrm{Sec}[e+fx])}\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+i\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\Big/\left(\left(1+e^{i(e+fx)}\right)\sqrt{\frac{e^{i(e+fx)}}{1+e^{2i(e+fx)}}}\,f\sqrt{c-c\,\mathrm{Sec}[e+fx]}\right)$$

Problem 118: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\mathrm{Sec}[e+fx]\,(a+a\,\mathrm{Sec}[e+fx])^{3/2}}{(c-c\,\mathrm{Sec}[e+fx])^{3/2}}\,dx$$

Optimal (type 3, 99 leaves, 2 steps):

$$-\frac{a\sqrt{a+a\,\mathrm{Sec}[e+fx]}\,\mathrm{Tan}[e+fx]}{f\,(c-c\,\mathrm{Sec}[e+fx])^{3/2}}-\frac{a^2\,\mathrm{Log}[1-\mathrm{Sec}[e+fx]]\,\mathrm{Tan}[e+fx]}{c\,f\sqrt{a+a\,\mathrm{Sec}[e+fx]}\,\sqrt{c-c\,\mathrm{Sec}[e+fx]}}$$

Result (type 3, 134 leaves):

$$-\left(\left(a\left(2-2\,\mathrm{Log}\left[1-e^{i(e+fx)}\right]+\mathrm{Cos}[e+fx]\left(2\,\mathrm{Log}\left[1-e^{i(e+fx)}\right]-\mathrm{Log}\left[1+e^{2i(e+fx)}\right]\right)+\mathrm{Log}\left[1+e^{2i(e+fx)}\right]\right)\sqrt{a\,(1+\mathrm{Sec}[e+fx])}\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/\left(c\,f\,(-1+\mathrm{Cos}[e+fx])\sqrt{c-c\,\mathrm{Sec}[e+fx]}\right)\right)$$

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

$$\int \mathrm{Sec}[e+fx]\,(a+a\,\mathrm{Sec}[e+fx])^{5/2}\sqrt{c-c\,\mathrm{Sec}[e+fx]}\,dx$$

Optimal (type 3, 43 leaves, 1 step):

$$-\frac{c\,(a+a\,\text{Sec}[e+f\,x])^{5/2}\,\text{Tan}[e+f\,x]}{3\,f\,\sqrt{c-c\,\text{Sec}[e+f\,x]}}$$

Result (type 3, 88 leaves):

$$\frac{1}{6\,f}a^2\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(2+4\,\text{Cos}[e+f\,x]+\text{Cos}[e+f\,x]^2\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\,\text{Sec}[e+f\,x]^2\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}$$

Problem 127: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Sec}[e+f\,x]\,(a+a\,\text{Sec}[e+f\,x])^{5/2}}{\sqrt{c-c\,\text{Sec}[e+f\,x]}}\,dx$$

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

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

Result (type 3, 328 leaves):

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

Problem 128: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 3 steps):

$$-\frac{a (a+a \text{Sec}[e+f x])^{3/2} \text{Tan}[e+f x]}{f (c-c \text{Sec}[e+f x])^{3/2}}-\frac{4 a^3 \text{Log}[1-\text{Sec}[e+f x]] \text{Tan}[e+f x]}{c f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{2 a^2 \sqrt{a+a \text{Sec}[e+f x]} \text{Tan}[e+f x]}{c f \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 188 leaves):

$$\left(a^2 \left(1-4 \text{Log}\left[1-e^{i (e+f x)}\right]+\text{Cos}[e+f x] \left(-5+8 \text{Log}\left[1-e^{i (e+f x)}\right]-4 \text{Log}\left[1+e^{2 i (e+f x)}\right]\right)+2 \text{Log}\left[1+e^{2 i (e+f x)}\right]+\text{Cos}[2 (e+f x)] \left(-4 \text{Log}\left[1-e^{i (e+f x)}\right]+2 \text{Log}\left[1+e^{2 i (e+f x)}\right]\right)\right) \text{Sec}[e+f x] \sqrt{a (1+\text{Sec}[e+f x])} \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right) \Big/ \left(c f (-1+\text{Cos}[e+f x]) \sqrt{c-c \text{Sec}[e+f x]}\right)$$

Problem 129: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 3 steps):

$$-\frac{a (a+a \text{Sec}[e+f x])^{3/2} \text{Tan}[e+f x]}{2 f (c-c \text{Sec}[e+f x])^{5/2}}+\frac{a^2 \sqrt{a+a \text{Sec}[e+f x]} \text{Tan}[e+f x]}{c f (c-c \text{Sec}[e+f x])^{3/2}}+\frac{a^3 \text{Log}[1-\text{Sec}[e+f x]] \text{Tan}[e+f x]}{c^2 f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 182 leaves):

$$-\left(\left(a^2 \left(4-6 \text{Log}\left[1-e^{i (e+f x)}\right]+\text{Cos}[e+f x] \left(8 \text{Log}\left[1-e^{i (e+f x)}\right]-4 \text{Log}\left[1+e^{2 i (e+f x)}\right]\right)+3 \text{Log}\left[1+e^{2 i (e+f x)}\right]+\text{Cos}[2 (e+f x)] \left(-2 \text{Log}\left[1-e^{i (e+f x)}\right]+\text{Log}\left[1+e^{2 i (e+f x)}\right]\right)\right) \sqrt{a (1+\text{Sec}[e+f x])} \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right) \Big/ \left(2 c^2 f (-1+\text{Cos}[e+f x])^2 \sqrt{c-c \text{Sec}[e+f x]}\right)\right)$$

Problem 133: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[e+f x] (c-c \text{Sec}[e+f x])^{5/2}}{\sqrt{a+a \text{Sec}[e+f x]}} \, dx$$

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

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

Result (type 3, 141 leaves):

$$\left(c^2\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(1-6\,\text{Cos}[e+f\,x]+8\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]+\text{Cos}[2\,(e+f\,x)]\,\left(8\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]-4\,\text{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)-4\,\text{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)\,\text{Sec}[e+f\,x]^2\,\sqrt{c-c\,\text{Sec}[e+f\,x]}\right)\Big/\left(2\,f\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}\right)$$

Problem 134: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 94 leaves, 2 steps):

$$-\frac{2\,c^2\,\text{Log}[1+\text{Sec}[e+f\,x]]\,\text{Tan}[e+f\,x]}{f\,\sqrt{a+a\,\text{Sec}[e+f\,x]}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}}-\frac{c\,\sqrt{c-c\,\text{Sec}[e+f\,x]}\,\text{Tan}[e+f\,x]}{f\,\sqrt{a+a\,\text{Sec}[e+f\,x]}}$$

Result (type 3, 173 leaves):

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

Problem 135: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 50 leaves, 1 step):

$$-\frac{c\,\text{Log}[1+\text{Sec}[e+f\,x]]\,\text{Tan}[e+f\,x]}{f\,\sqrt{a+a\,\text{Sec}[e+f\,x]}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}}$$

Result (type 3, 118 leaves):

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

Problem 136: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$-\frac{\text{ArcTanh}[\text{Cos}[e+f x]]\,\text{Tan}[e+f x]}{f\sqrt{a+a\,\text{Sec}[e+f x]}\,\sqrt{c-c\,\text{Sec}[e+f x]}}$$

Result (type 3, 115 leaves):

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

Problem 137: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 95 leaves, 3 steps):

$$-\frac{\text{Tan}[e+f x]}{2 f\sqrt{a+a\,\text{Sec}[e+f x]}\,(c-c\,\text{Sec}[e+f x])^{3/2}}-\frac{\text{ArcTanh}[\text{Cos}[e+f x]]\,\text{Tan}[e+f x]}{2 c f\sqrt{a+a\,\text{Sec}[e+f x]}\,\sqrt{c-c\,\text{Sec}[e+f x]}}$$

Result (type 3, 129 leaves):

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

Problem 138: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[e+f x]}{\sqrt{a+a\,\text{Sec}[e+f x]}\,(c-c\,\text{Sec}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 140 leaves, 4 steps):

$$-\frac{\text{Tan}[e+f x]}{4 f\sqrt{a+a\,\text{Sec}[e+f x]}\,(c-c\,\text{Sec}[e+f x])^{5/2}}-\frac{\text{Tan}[e+f x]}{4 c f\sqrt{a+a\,\text{Sec}[e+f x]}\,(c-c\,\text{Sec}[e+f x])^{3/2}}-\frac{\text{ArcTanh}[\text{Cos}[e+f x]]\,\text{Tan}[e+f x]}{4 c^2 f\sqrt{a+a\,\text{Sec}[e+f x]}\,\sqrt{c-c\,\text{Sec}[e+f x]}}$$

Result (type 3, 176 leaves):

$$\left(\left(4+3\,\text{Log}\left[1-e^{i\,(e+f\,x)}\right]+\text{Cos}\left[2\,(e+f\,x)\right]\,\left(\text{Log}\left[1-e^{i\,(e+f\,x)}\right]-\text{Log}\left[1+e^{i\,(e+f\,x)}\right]\right)-3\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]+\text{Cos}[e+f\,x]\,\left(-6-4\,\text{Log}\left[1-e^{i\,(e+f\,x)}\right]+4\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]\right)\right)\text{Tan}[e+f\,x]\right)\Big/\left(8\,c^2\,f\,(-1+\text{Cos}[e+f\,x])^2\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}\right)$$

Problem 139: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 183 leaves):

$$-\left(\left(c^2\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]\left(-1+4\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]+\text{Cos}[e+f\,x]\,\left(-5+8\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]-4\,\text{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)+\text{Cos}\left[2\,(e+f\,x)\right]\,\left(4\,\text{Log}\left[1+e^{i\,(e+f\,x)}\right]-2\,\text{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)-2\,\text{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)\text{Sec}[e+f\,x]\,\sqrt{c-c\,\text{Sec}[e+f\,x]}\right)\Big/\left(a\,f\,(1+\text{Cos}[e+f\,x])\,\sqrt{a\,(1+\text{Sec}[e+f\,x])}\right)\right)$$

Problem 140: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 95 leaves, 2 steps):

$$\frac{c^2\,\text{Log}[1+\text{Sec}[e+f\,x]]\,\text{Tan}[e+f\,x]}{a\,f\,\sqrt{a+a\,\text{Sec}[e+f\,x]}\,\sqrt{c-c\,\text{Sec}[e+f\,x]}}+\frac{c\,\sqrt{c-c\,\text{Sec}[e+f\,x]}\,\text{Tan}[e+f\,x]}{f\,(a+a\,\text{Sec}[e+f\,x])^{3/2}}$$

Result (type 3, 132 leaves):

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

Problem 142: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 95 leaves, 3 steps):

$$\frac{\text{Tan}[e+f x]}{2 f (a+a \text{Sec}[e+f x])^{3/2} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{\text{ArcTanh}[\text{Cos}[e+f x]] \text{Tan}[e+f x]}{2 a f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 129 leaves):

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

Problem 143: Result unnecessarily involves imaginary or complex numbers.

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

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

$$\frac{\text{Csc}[e+f x]}{2 a c f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{\text{ArcTanh}[\text{Cos}[e+f x]] \text{Tan}[e+f x]}{2 a c f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 89 leaves):

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

Problem 144: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 146 leaves, 4 steps):

$$\frac{3 \text{Csc}[e+f x]}{8 a c^2 f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{\text{Tan}[e+f x]}{4 f (a+a \text{Sec}[e+f x])^{3/2} (c-c \text{Sec}[e+f x])^{5/2}}-\frac{3 \text{ArcTanh}[\text{Cos}[e+f x]] \text{Tan}[e+f x]}{8 a c^2 f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 243 leaves):

$$\Big(\Big(-2+6 \text{Log}\left[1-e^{i (e+f x)}\right]+3 \text{Cos}[3 (e+f x)] \text{Log}\left[1-e^{i (e+f x)}\right]-2 \text{Cos}[2 (e+f x)] \left(5+3 \text{Log}\left[1-e^{i (e+f x)}\right]-3 \text{Log}\left[1+e^{i (e+f x)}\right]\right)-6 \text{Log}\left[1+e^{i (e+f x)}\right]-3 \text{Cos}[3 (e+f x)] \text{Log}\left[1+e^{i (e+f x)}\right]+\text{Cos}[e+f x] \left(4-3 \text{Log}\left[1-e^{i (e+f x)}\right]+3 \text{Log}\left[1+e^{i (e+f x)}\right]\right)\Big) \text{Tan}[e+f x]\Big) \Big/ \left(32 a c^2 f (-1+\text{Cos}[e+f x])^2 (1+\text{Cos}[e+f x]) \sqrt{a (1+\text{Sec}[e+f x])} \sqrt{c-c \text{Sec}[e+f x]}\right)$$

Problem 145: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 3 steps):

$$-\frac{c^3 \text{Log}[1+\text{Sec}[e+f x]] \text{Tan}[e+f x]}{a^2 f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{c^2 \sqrt{c-c \text{Sec}[e+f x]} \text{Tan}[e+f x]}{a f (a+a \text{Sec}[e+f x])^{3/2}}+\frac{c (c-c \text{Sec}[e+f x])^{3/2} \text{Tan}[e+f x]}{2 f (a+a \text{Sec}[e+f x])^{5/2}}$$

Result (type 3, 178 leaves):

$$\left(c^2 \text{Cot}\left[\frac{1}{2} (e+f x)\right] \left(-4+6 \text{Log}\left[1+e^{i (e+f x)}\right]+\text{Cos}[e+f x] \left(8 \text{Log}\left[1+e^{i (e+f x)}\right]-4 \text{Log}\left[1+e^{2 i (e+f x)}\right]\right)+\text{Cos}[2 (e+f x)] \left(2 \text{Log}\left[1+e^{i (e+f x)}\right]-\text{Log}\left[1+e^{2 i (e+f x)}\right]\right)-3 \text{Log}\left[1+e^{2 i (e+f x)}\right]\right) \sqrt{c-c \text{Sec}[e+f x]}\right) \Big/ \left(2 a^2 f (1+\text{Cos}[e+f x])^2 \sqrt{a (1+\text{Sec}[e+f x])}\right)$$

Problem 148: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Sec}[e+f x]}{(a+a \text{Sec}[e+f x])^{5/2} \sqrt{c-c \text{Sec}[e+f x]}} \, dx$$

Optimal (type 3, 140 leaves, 4 steps):

$$\frac{\text{Tan}[e+f x]}{4 f (a+a \text{Sec}[e+f x])^{5/2} \sqrt{c-c \text{Sec}[e+f x]}}+\frac{\text{Tan}[e+f x]}{4 a f (a+a \text{Sec}[e+f x])^{3/2} \sqrt{c-c \text{Sec}[e+f x]}}-\frac{\text{ArcTanh}[\text{Cos}[e+f x]] \text{Tan}[e+f x]}{4 a^2 f \sqrt{a+a \text{Sec}[e+f x]} \sqrt{c-c \text{Sec}[e+f x]}}$$

Result (type 3, 176 leaves):

$$\left(\left(-4+3 \text{Log}\left[1-e^{i (e+f x)}\right]+\text{Cos}[e+f x] \left(-6+4 \text{Log}\left[1-e^{i (e+f x)}\right]-4 \text{Log}\left[1+e^{i (e+f x)}\right]\right)+\text{Cos}[2 (e+f x)] \left(\text{Log}\left[1-e^{i (e+f x)}\right]-\text{Log}\left[1+e^{i (e+f x)}\right]\right)-3 \text{Log}\left[1+e^{i (e+f x)}\right]\right) \text{Tan}[e+f x]\right) \Big/ \left(8 a^2 f (1+\text{Cos}[e+f x])^2 \sqrt{a (1+\text{Sec}[e+f x])} \sqrt{c-c \text{Sec}[e+f x]}\right)$$

Problem 149: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 146 leaves, 4 steps):

$$\frac{3\,\mathrm{Csc}[e+f\,x]}{8\,a^2\,c\,f\,\sqrt{a+a\,\mathrm{Sec}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}}+\frac{\mathrm{Tan}[e+f\,x]}{4\,f\,(a+a\,\mathrm{Sec}[e+f\,x])^{5/2}\,(c-c\,\mathrm{Sec}[e+f\,x])^{3/2}}-\frac{3\,\mathrm{ArcTanh}[\mathrm{Cos}[e+f\,x]]\,\mathrm{Tan}[e+f\,x]}{8\,a^2\,c\,f\,\sqrt{a+a\,\mathrm{Sec}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}}$$

Result (type 3, 242 leaves):

$$-\Big(\Big(\Big(2+6\,\mathrm{Log}\big[1-e^{i\,(e+f\,x)}\big]-3\,\mathrm{Cos}\big[3\,(e+f\,x)\big]\,\mathrm{Log}\big[1-e^{i\,(e+f\,x)}\big]+\mathrm{Cos}[e+f\,x]\,\big(4+3\,\mathrm{Log}\big[1-e^{i\,(e+f\,x)}\big]-3\,\mathrm{Log}\big[1+e^{i\,(e+f\,x)}\big]\big)-6\,\mathrm{Log}\big[1+e^{i\,(e+f\,x)}\big]+3\,\mathrm{Cos}\big[3\,(e+f\,x)\big]\,\mathrm{Log}\big[1+e^{i\,(e+f\,x)}\big]+\mathrm{Cos}\big[2\,(e+f\,x)\big]\,\big(10-6\,\mathrm{Log}\big[1-e^{i\,(e+f\,x)}\big]+6\,\mathrm{Log}\big[1+e^{i\,(e+f\,x)}\big]\big)\Big)\,\mathrm{Tan}[e+f\,x]\Big)\Big/\Big(32\,a^2\,c\,f\,(-1+\mathrm{Cos}[e+f\,x])\,(1+\mathrm{Cos}[e+f\,x])^2\,\sqrt{a\,(1+\mathrm{Sec}[e+f\,x])}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}\Big)\Big)$$

Problem 150: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 160 leaves, 4 steps):

$$\frac{3\,\mathrm{Csc}[e+f\,x]}{8\,a^2\,c^2\,f\,\sqrt{a+a\,\mathrm{Sec}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}}-\frac{\mathrm{Cot}[e+f\,x]^2\,\mathrm{Csc}[e+f\,x]}{4\,a^2\,c^2\,f\,\sqrt{a+a\,\mathrm{Sec}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}}-\frac{3\,\mathrm{ArcTanh}[\mathrm{Cos}[e+f\,x]]\,\mathrm{Tan}[e+f\,x]}{8\,a^2\,c^2\,f\,\sqrt{a+a\,\mathrm{Sec}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}}$$

Result (type 3, 105 leaves):

$$\Big(\big(1-5\,\mathrm{Cos}\big[2\,(e+f\,x)\big]\big)\,\mathrm{Csc}[e+f\,x]^3+6\,\big(\mathrm{Log}\big[1-e^{i\,(e+f\,x)}\big]-\mathrm{Log}\big[1+e^{i\,(e+f\,x)}\big]\big)\,\mathrm{Tan}[e+f\,x]\Big)\Big/\Big(16\,a^2\,c^2\,f\,\sqrt{a\,(1+\mathrm{Sec}[e+f\,x])}\,\sqrt{c-c\,\mathrm{Sec}[e+f\,x]}\Big)$$

Problem 151: Unable to integrate problem.

$$\int\mathrm{Sec}[e+f\,x]\,(a+a\,\mathrm{Sec}[e+f\,x])^m\,(c-c\,\mathrm{Sec}[e+f\,x])^n\,dx$$

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

$$-\frac{1}{f\,(1+2\,m)}2^{\frac{1}{2}+n}\,c\,\mathrm{Hypergeometric2F1}\Big[\frac{1}{2}+m,\frac{1}{2}-n,\frac{3}{2}+m,\frac{1}{2}\,(1+\mathrm{Sec}[e+f\,x])\Big]\,(1-\mathrm{Sec}[e+f\,x])^{\frac{1}{2}-n}\,(a+a\,\mathrm{Sec}[e+f\,x])^m\,(c-c\,\mathrm{Sec}[e+f\,x])^{-1+n}\,\mathrm{Tan}[e+f\,x]$$

Result (type 8, 34 leaves):

$$\int\mathrm{Sec}[e+f\,x]\,(a+a\,\mathrm{Sec}[e+f\,x])^m\,(c-c\,\mathrm{Sec}[e+f\,x])^n\,dx$$

Problem 154: Unable to integrate problem.

$$\int \frac{\text{Sec}[e+f x]\,(a+a\,\text{Sec}[e+f x])^m}{c-c\,\text{Sec}[e+f x]}\,dx$$

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

$$-\left(\left(2^{\frac{1}{2}+m}\,a\,\text{Hypergeometric2F1}\left[-\frac{1}{2},\frac{1}{2}-m,\frac{1}{2},\frac{1}{2}(1-\text{Sec}[e+f x])\right](1+\text{Sec}[e+f x])^{\frac{1}{2}-m}(a+a\,\text{Sec}[e+f x])^{-1+m}\,\text{Tan}[e+f x]\right)\Big/\left(f\,(c-c\,\text{Sec}[e+f x])\right)\right)$$

Result (type 8, 34 leaves):

$$\int \frac{\text{Sec}[e+f x]\,(a+a\,\text{Sec}[e+f x])^m}{c-c\,\text{Sec}[e+f x]}\,dx$$

Problem 155: Unable to integrate problem.

$$\int \frac{\text{Sec}[e+f x]\,(a+a\,\text{Sec}[e+f x])^m}{(c-c\,\text{Sec}[e+f x])^2}\,dx$$

Optimal (type 5, 92 leaves, 3 steps):

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

Result (type 8, 34 leaves):

$$\int \frac{\text{Sec}[e+f x]\,(a+a\,\text{Sec}[e+f x])^m}{(c-c\,\text{Sec}[e+f x])^2}\,dx$$

Problem 156: Unable to integrate problem.

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

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

$$-\frac{64\,c^3\,(a+a\,\text{Sec}[e+f x])^m\,\text{Tan}[e+f x]}{f\,(5+2m)\,(3+8m+4m^2)\,\sqrt{c-c\,\text{Sec}[e+f x]}}-\frac{16\,c^2\,(a+a\,\text{Sec}[e+f x])^m\,\sqrt{c-c\,\text{Sec}[e+f x]}\,\text{Tan}[e+f x]}{f\,(15+16m+4m^2)}-\frac{2\,c\,(a+a\,\text{Sec}[e+f x])^m\,(c-c\,\text{Sec}[e+f x])^{3/2}\,\text{Tan}[e+f x]}{f\,(5+2m)}$$

Result (type 8, 36 leaves):

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,(c-c\operatorname{Sec}[e+f x])^{5/2}\,dx$$

Problem 157: Unable to integrate problem.

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,(c-c\operatorname{Sec}[e+f x])^{3/2}\,dx$$

Optimal (type 3, 100 leaves, 2 steps):

$$-\frac{8\,c^2\,(a+a\operatorname{Sec}[e+f x])^m\operatorname{Tan}[e+f x]}{f\,(3+8\,m+4\,m^2)\,\sqrt{c-c\operatorname{Sec}[e+f x]}}-\frac{2\,c\,(a+a\operatorname{Sec}[e+f x])^m\sqrt{c-c\operatorname{Sec}[e+f x]}\,\operatorname{Tan}[e+f x]}{f\,(3+2\,m)}$$

Result (type 8, 36 leaves):

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,(c-c\operatorname{Sec}[e+f x])^{3/2}\,dx$$

Problem 158: Unable to integrate problem.

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,\sqrt{c-c\operatorname{Sec}[e+f x]}\,dx$$

Optimal (type 3, 46 leaves, 1 step):

$$-\frac{2\,c\,(a+a\operatorname{Sec}[e+f x])^m\operatorname{Tan}[e+f x]}{f\,(1+2\,m)\,\sqrt{c-c\operatorname{Sec}[e+f x]}}$$

Result (type 8, 36 leaves):

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,\sqrt{c-c\operatorname{Sec}[e+f x]}\,dx$$

Problem 159: Unable to integrate problem.

$$\int \frac{\operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m}{\sqrt{c-c\operatorname{Sec}[e+f x]}}\,dx$$

Optimal (type 5, 69 leaves, 2 steps):

$$-\left(\left(\text{Hypergeometric2F1}\left[1,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}\,(1+\operatorname{Sec}[e+f x])\right]\,(a+a\operatorname{Sec}[e+f x])^m\operatorname{Tan}[e+f x]\right)\Big/\left(f\,(1+2\,m)\,\sqrt{c-c\operatorname{Sec}[e+f x]}\right)\right)$$

Result (type 8, 36 leaves):

$$\int \frac{\operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m}{\sqrt{c-c\operatorname{Sec}[e+f x]}}\,dx$$

Problem 160: Unable to integrate problem.

$$\int \frac{\mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])^m}{(c-c\,\mathrm{Sec}[e+f x])^{3/2}}\,dx$$

Optimal (type 5, 74 leaves, 2 steps):

$$-\left(\left(\mathrm{Hypergeometric2F1}\left[2,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}(1+\mathrm{Sec}[e+f x])\right](a+a\,\mathrm{Sec}[e+f x])^m\,\mathrm{Tan}[e+f x]\right)\Big/\left(2\,c\,f\,(1+2m)\sqrt{c-c\,\mathrm{Sec}[e+f x]}\right)\right)$$

Result (type 8, 36 leaves):

$$\int \frac{\mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])^m}{(c-c\,\mathrm{Sec}[e+f x])^{3/2}}\,dx$$

Problem 161: Unable to integrate problem.

$$\int \frac{\mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])^m}{(c-c\,\mathrm{Sec}[e+f x])^{5/2}}\,dx$$

Optimal (type 5, 74 leaves, 2 steps):

$$-\left(\left(\mathrm{Hypergeometric2F1}\left[3,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}(1+\mathrm{Sec}[e+f x])\right](a+a\,\mathrm{Sec}[e+f x])^m\,\mathrm{Tan}[e+f x]\right)\Big/\left(4\,c^2\,f\,(1+2m)\sqrt{c-c\,\mathrm{Sec}[e+f x]}\right)\right)$$

Result (type 8, 36 leaves):

$$\int \frac{\mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])^m}{(c-c\,\mathrm{Sec}[e+f x])^{5/2}}\,dx$$

Problem 162: Result unnecessarily involves imaginary or complex numbers.

$$\int \mathrm{Sec}[e+f x]\,(a+a\,\mathrm{Sec}[e+f x])^m\,(c-c\,\mathrm{Sec}[e+f x])^{-3-m}\,dx$$

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

$$-\frac{(a+a\,\mathrm{Sec}[e+f x])^m\,(c-c\,\mathrm{Sec}[e+f x])^{-3-m}\,\mathrm{Tan}[e+f x]}{f\,(1+2m)}+\frac{2\,(a+a\,\mathrm{Sec}[e+f x])^{1+m}\,(c-c\,\mathrm{Sec}[e+f x])^{-3-m}\,\mathrm{Tan}[e+f x]}{a\,f\,(3+8m+4m^2)}-\frac{2\,(a+a\,\mathrm{Sec}[e+f x])^{2+m}\,(c-c\,\mathrm{Sec}[e+f x])^{-3-m}\,\mathrm{Tan}[e+f x]}{a^2\,f\,(1+2m)\,(15+16m+4m^2)}$$

Result (type 3, 321 leaves):

$$-\frac{1}{\left(-1+e^{i (e+f x)}\right)^5 f (1+2 m) (3+2 m) (5+2 m)} i\, 2^{3+m} \left(-i\, e^{-\frac{1}{2} i (e+f x)} \left(-1+e^{i (e+f x)}\right)\right)^{-2 m} \left(1+e^{i (e+f x)}\right) \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-m} \left(\frac{\left(1+e^{i (e+f x)}\right)^2}{1+e^{2 i (e+f x)}}\right)^m \left(7+12 m+4 m^2-4 e^{i (e+f x)} (3+2 m)-4 e^{3 i (e+f x)} (3+2 m)+e^{4 i (e+f x)} \left(7+12 m+4 m^2\right)+e^{2 i (e+f x)} \left(22+24 m+8 m^2\right)\right) \text{Sec}[e+f x]^{3+m} (1+\text{Sec}[e+f x])^{-m} (a (1+\text{Sec}[e+f x]))^m (c-c\, \text{Sec}[e+f x])^{-3-m} \text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^{-2 (-3-m)}$$

Problem 163: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x] (a+a\, \text{Sec}[e+f x])^m (c-c\, \text{Sec}[e+f x])^{-2-m} \, dx$$

Optimal (type 3, 104 leaves, 2 steps):

$$-\frac{(a+a\, \text{Sec}[e+f x])^m (c-c\, \text{Sec}[e+f x])^{-2-m} \text{Tan}[e+f x]}{f (1+2 m)}+\frac{(a+a\, \text{Sec}[e+f x])^{1+m} (c-c\, \text{Sec}[e+f x])^{-2-m} \text{Tan}[e+f x]}{a f \left(3+8 m+4 m^2\right)}$$

Result (type 3, 250 leaves):

$$\left(i\, 2^{3+m} \left(-i\, e^{-\frac{1}{2} i (e+f x)} \left(-1+e^{i (e+f x)}\right)\right)^{-2 m} \left(1+e^{i (e+f x)}\right) \left(\frac{e^{i (e+f x)}}{1+e^{2 i (e+f x)}}\right)^{-m} \left(\frac{\left(1+e^{i (e+f x)}\right)^2}{1+e^{2 i (e+f x)}}\right)^m \left(1-e^{i (e+f x)}+m+e^{2 i (e+f x)} (1+m)\right) \text{Sec}[e+f x]^{2+m} (1+\text{Sec}[e+f x])^{-m} (a (1+\text{Sec}[e+f x]))^m (c-c\, \text{Sec}[e+f x])^{-2-m} \text{Sin}\left[\frac{1}{2} (e+f x)\right]^{2 (2+m)}\right) \Big/ \left(\left(-1+e^{i (e+f x)}\right)^3 f (1+2 m) (3+2 m)\right)$$

Problem 164: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[e+f x] (a+a\, \text{Sec}[e+f x])^m (c-c\, \text{Sec}[e+f x])^{-1-m} \, dx$$

Optimal (type 3, 47 leaves, 1 step):

$$-\frac{(a+a\, \text{Sec}[e+f x])^m (c-c\, \text{Sec}[e+f x])^{-1-m} \text{Tan}[e+f x]}{f (1+2 m)}$$

Result (type 3, 208 leaves):

$$-\frac{1}{f+2fm}2^{1+m}e^{-\frac{1}{2}i(e+fx)}\left(-i e^{-\frac{1}{2}i(e+fx)}\left(-1+e^{i(e+fx)}\right)\right)^{-1-2m}\left(1+e^{i(e+fx)}\right)\left(\frac{e^{i(e+fx)}}{1+e^{2i(e+fx)}}\right)^{-m}\left(\frac{\left(1+e^{i(e+fx)}\right)^2}{1+e^{2i(e+fx)}}\right)^m \text{Sec}[e+fx]^{1+m}(1+\text{Sec}[e+fx])^{-m}(a(1+\text{Sec}[e+fx]))^m(c-c\,\text{Sec}[e+fx])^{-1-m}\text{Sin}\left[\frac{1}{2}(e+fx)\right]^{2(1+m)}$$

Problem 165: Unable to integrate problem.

$$\int \text{Sec}[e+fx](a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{-m}\,dx$$

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

$$-\frac{1}{f(1+2m)}2^{\frac{1}{2}-m}c\,\text{Hypergeometric2F1}\left[\frac{1}{2}+m,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sec}[e+fx])\right](1-\text{Sec}[e+fx])^{\frac{1}{2}+m}(a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{-1-m}\text{Tan}[e+fx]$$

Result (type 8, 36 leaves):

$$\int \text{Sec}[e+fx](a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{-m}\,dx$$

Problem 166: Unable to integrate problem.

$$\int \text{Sec}[e+fx](a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{1-m}\,dx$$

Optimal (type 5, 99 leaves, 3 steps):

$$-\frac{1}{f(1+2m)}2^{\frac{3}{2}-m}c\,\text{Hypergeometric2F1}\left[-\frac{1}{2}+m,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sec}[e+fx])\right](1-\text{Sec}[e+fx])^{-\frac{1}{2}+m}(a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{-m}\text{Tan}[e+fx]$$

Result (type 8, 38 leaves):

$$\int \text{Sec}[e+fx](a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{1-m}\,dx$$

Problem 167: Unable to integrate problem.

$$\int \text{Sec}[e+fx](a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{2-m}\,dx$$

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

$$-\frac{1}{f(1+2m)}2^{\frac{5}{2}-m}c^2\,\text{Hypergeometric2F1}\left[-\frac{3}{2}+m,\frac{1}{2}+m,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sec}[e+fx])\right](1-\text{Sec}[e+fx])^{-\frac{1}{2}+m}(a+a\,\text{Sec}[e+fx])^m(c-c\,\text{Sec}[e+fx])^{-m}\text{Tan}[e+fx]$$

Result (type 8, 38 leaves):

$$\int \operatorname{Sec}[e+f x]\,(a+a\operatorname{Sec}[e+f x])^m\,(c-c\operatorname{Sec}[e+f x])^{2-m}\,dx$$

Problem 168: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 105 leaves, 10 steps):

$$\frac{a^3 c \operatorname{ArcTanh}[\operatorname{Sin}[e+f x]]}{4 f}+\frac{a^3 c \operatorname{Sec}[e+f x] \operatorname{Tan}[e+f x]}{4 f}-\frac{a^3 c \operatorname{Sec}[e+f x]^3 \operatorname{Tan}[e+f x]}{2 f}-\frac{2 a^3 c \operatorname{Tan}[e+f x]^3}{3 f}-\frac{a^3 c \operatorname{Tan}[e+f x]^5}{5 f}$$

Result (type 3, 276 leaves):

$$-\frac{a^3 c \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{4 f}+\frac{a^3 c \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{4 f}-\frac{a^3 c}{8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}+\frac{a^3 c}{8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}+\frac{a^3 c}{8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}-\frac{a^3 c}{8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}+\frac{7 a^3 c \operatorname{Tan}[e+f x]}{15 f}-\frac{4 a^3 c \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]}{15 f}-\frac{a^3 c \operatorname{Sec}[e+f x]^4 \operatorname{Tan}[e+f x]}{5 f}$$

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

$$\int \frac{\operatorname{Sec}[e+f x]^2\,(c-c\operatorname{Sec}[e+f x])}{a+a\operatorname{Sec}[e+f x]}\,dx$$

Optimal (type 3, 56 leaves, 5 steps):

$$\frac{2 c \operatorname{ArcTanh}[\operatorname{Sin}[e+f x]]}{a f}-\frac{c \operatorname{Tan}[e+f x]}{a f}-\frac{2 c \operatorname{Tan}[e+f x]}{f\,(a+a\operatorname{Sec}[e+f x])}$$

Result (type 3, 154 leaves):

$$-\frac{1}{a} c \left(\frac{2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{f}-\frac{2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{f}+\frac{\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]}{f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]}{f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}+\frac{2 \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{f}\right)$$

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

$$\int \frac{\text{Sec}[e+f x]^2 \left(c-c\,\text{Sec}[e+f x]\right)}{\left(a+a\,\text{Sec}[e+f x]\right)^2}\,dx$$

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

$$-\frac{c\,\text{ArcTanh}[\text{Sin}[e+f x]]}{a^2 f}+\frac{7 c\,\text{Tan}[e+f x]}{3 a^2 f\left(1+\text{Sec}[e+f x]\right)}-\frac{2 c\,\text{Tan}[e+f x]}{3 f\left(a+a\,\text{Sec}[e+f x]\right)^2}$$

Result (type 3, 335 leaves):

$$\frac{1}{6 a^2 f\left(1+\text{Sec}[e+f x]\right)^2} c\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}\left[\frac{e}{2}\right] \text{Sec}[e+f x]^2 \left(3\,\text{Cos}\left[e+\frac{3 f x}{2}\right]\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+ 3\,\text{Cos}\left[2 e+\frac{3 f x}{2}\right]\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+ 9\,\text{Cos}\left[\frac{f x}{2}\right]\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]- \text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)+9\,\text{Cos}\left[e+\frac{f x}{2}\right] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)- 3\,\text{Cos}\left[e+\frac{3 f x}{2}\right]\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]- 3\,\text{Cos}\left[2 e+\frac{3 f x}{2}\right]\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+ 24\,\text{Sin}\left[\frac{f x}{2}\right]-6\,\text{Sin}\left[e+\frac{f x}{2}\right]+10\,\text{Sin}\left[e+\frac{3 f x}{2}\right]\right)$$

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

$$\int (g\,\text{Sec}[e+f x])^p \left(a+a\,\text{Sec}[e+f x]\right)^2 \left(c-c\,\text{Sec}[e+f x]\right)\,dx$$

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

$$-\frac{1}{3 f}a^2 c\left(\text{Cos}[e+f x]^2\right)^{\frac{3+p}{2}}\text{Hypergeometric2F1}\left[\frac{3}{2},\frac{3+p}{2},\frac{5}{2},\text{Sin}[e+f x]^2\right] (g\,\text{Sec}[e+f x])^p\,\text{Tan}[e+f x]^3-\frac{1}{3 f g}a^2 c\left(\text{Cos}[e+f x]^2\right)^{\frac{4+p}{2}} \text{Hypergeometric2F1}\left[\frac{3}{2},\frac{4+p}{2},\frac{5}{2},\text{Sin}[e+f x]^2\right](g\,\text{Sec}[e+f x])^{1+p}\,\text{Tan}[e+f x]^3$$

Result (type 6, 13 496 leaves):

$$\frac{1}{32 f}\text{Cos}[e+f x]^4\left(\text{Cos}[e+f x]^2\right)^{\frac{1}{2}(-1+p)}\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{3+p}{2},\frac{3}{2},\text{Sin}[e+f x]^2\right]\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (g\,\text{Sec}[e+f x])^p (a+a\,\text{Sec}[e+f x])^2 (c-c\,\text{Sec}[e+f x])\,\text{Sin}[e+f x]+\frac{1}{16 f}\text{Cos}[e+f x]^3 \left(\text{Cos}[e+f x]^2\right)^{p/2}\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{4+p}{2},\frac{3}{2},\text{Sin}[e+f x]^2\right]\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (g\,\text{Sec}[e+f x])^p (a+a\,\text{Sec}[e+f x])^2 (c-c\,\text{Sec}[e+f x])\,\text{Sin}[e+f x]-$$

$$\Bigg(3\,\text{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4\text{Sec}[e+f x]^{-3-p}(g\,\text{Sec}[e+f x])^p (a+a\,\text{Sec}[e+f x])^2 (c-c\,\text{Sec}[e+f x])\left(-\text{Sec}[e+f x]^{2+p}+2\,\text{Cos}[2(e+f x)]\,\text{Sec}[e+f x]^{2+p}\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^p$$

$$\Bigg(\Bigg(4\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Big/\Bigg(\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\Bigg((-1+p)\,\text{AppellF1}\left[\frac{3}{2},p,2-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)-$$

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

$$\Bigg(2\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\Big/\Bigg(\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\frac{2}{3}\Bigg(p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(2+p)\,\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg)\Bigg)\Big/\Bigg(16 f\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2$$

$$\left(-\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\right)^{3}}\,12\,\text{Sec}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}}{1-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}}\right)^{p}\right.$$

$$\left(\left(4\,\text{AppellF1}\left[\frac{1}{2},\,p,\,1-p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\right]\right.\right.$$

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

$$\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\Big]+2\left(\left(-1+p\right)\text{AppellF1}\left[\frac{3}{2},\,p,\right.\right.$$

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

$$\left.\left.\left.\left.1-p,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\right]\right)\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\right)\right)-$$

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(4\,\text{AppellF1}\left[\frac{1}{2},\,p,\,1-p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\right]\right.\right.$$

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

$$\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2},\,-\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{2}\Big]+2\left(\left(-1+p\right)\text{AppellF1}\left[\frac{3}{2},\,p,\right.\right.$$

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

$$1-p,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big)\Big)-$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\ 1+p,\ -p,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]$$

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

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

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

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

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

$$\Big(\text{AppellF1}\left[\frac{1}{2},\ 2+p,\ -p,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+$$

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

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

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

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right)^2}\ 6\,p\,\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]\ \left(\frac{1+\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2}\right)^{-1+p}$$

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

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

$$\Big(\Big(4\,\text{AppellF1}\left[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]$$

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

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\right]+2$$

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

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

$$\text{Tan}\left[\frac{1}{2}\ (e+f\,x)\right]^2\Big)\Big)-\Big(3\,\text{AppellF1}\left[\frac{1}{2},\ 1+p,\ -p,\ \frac{3}{2},\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

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

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2}\,6\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^p$$

$$\Bigg(-\Bigg(\left(4\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right)\Big/$$

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

$$\left(8\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\Big/$$

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

$$\left(4\left(-\frac{1}{3}(1-p)\,\text{AppellF1}\left[\frac{3}{2},p,2-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\Big/\left(\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(3\,\text{AppellF1}\left[\frac{1}{2},p,\right.\right.\right.$$
$$1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+2\left((-1+p)\,\text{AppellF1}\left[\frac{3}{2},p,\right.\right.$$
$$2-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+p\,\text{AppellF1}\left[\frac{3}{2},1+p,\right.$$
$$\left.\left.\left.\left.1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)-$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\left.(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-\left(3\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(1+p)$$
$$\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-$$
$$\left(2\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(2+p)\,\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$

$$\Big(\text{AppellF1}\Big[\frac{1}{2}, 2+p, -p, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big] +$$

$$\frac{2}{3}\Big(p\,\text{AppellF1}\Big[\frac{3}{2}, 2+p, 1-p, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big] +$$

$$(2+p)\,\text{AppellF1}\Big[\frac{3}{2}, 3+p, -p, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)$$

$$\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big) - \Big(4\,\text{AppellF1}\Big[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Big(2\Big((-1+p)\,\text{AppellF1}\Big[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big] +$$

$$p\,\text{AppellF1}\Big[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big] + 3\Big(-\frac{1}{3}(1-p)\,\text{AppellF1}\Big[\frac{3}{2}, p, 2-p, \frac{5}{2},$$

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

$$\frac{1}{3}p\,\text{AppellF1}\Big[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

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

$$\Big((-1+p)\Big(-\frac{3}{5}(2-p)\,\text{AppellF1}\Big[\frac{5}{2}, p, 3-p, \frac{7}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\frac{3}{5}p\,\text{AppellF1}\Big[\frac{5}{2}, 1+p, 2-p, \frac{7}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big) + p\Big(-\frac{3}{5}(1-p)\,\text{AppellF1}\Big[\frac{5}{2}, 1+p,$$

$$2-p, \frac{7}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}(e+f x)\Big] + \frac{3}{5}(1+p)\,\text{AppellF1}\Big[\frac{5}{2}, 2+p, 1-p, \frac{7}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Big(\Big(1+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)\Big(3\,\text{AppellF1}\Big[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big] + 2\Big((-1+p)\,\text{AppellF1}\Big[\frac{3}{2}, p, 2-p, \frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big] + p\,\text{AppellF1}\Big[\frac{3}{2}, 1+p, 1-p,$$

$$\frac{5}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)^2\Big) +$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2}, 1+p, -p, \frac{3}{2}, \text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2, -\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)$$
$$\left(2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+3\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$
$$\frac{1}{3}(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$
$$\left(p\left(-\frac{3}{5}(1-p)\,\text{AppellF1}\left[\frac{5}{2},1+p,2-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(1+p)$$
$$\text{AppellF1}\left[\frac{5}{2},2+p,1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+(1+p)\left(\frac{3}{5}p\,\text{AppellF1}\left[\frac{5}{2},2+p,\right.\right.$$
$$1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[$$
$$\frac{1}{2}(e+f x)\Big]+\frac{3}{5}(2+p)\,\text{AppellF1}\left[\frac{5}{2},3+p,-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2\right.$$
$$\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$
$$(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)^2+$$
$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}(2+p)\,\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{2}{3}$$
$$\left(p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\right.$$

$$\left(2+p\right)\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]\Big)$$

$$\text{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]+\frac{2}{3}\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2$$

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

$$\left.-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]+\frac{3}{5}\left(2+p\right)$$

$$\text{AppellF1}\left[\frac{5}{2},3+p,1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)+\left(2+p\right)\left(\frac{3}{5}p\,\text{AppellF1}\left[\frac{5}{2},3+p,\right.\right.$$

$$1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\Big]\text{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\text{Tan}\Big[$$

$$\frac{1}{2}\left(e+fx\right)\Big]+\frac{3}{5}\left(3+p\right)\text{AppellF1}\left[\frac{5}{2},4+p,-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,\right.$$

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

$$\left(\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]+\frac{2}{3}\right.$$

$$\left(p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]+\right.$$

$$\left(2+p\right)\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,\right.$$

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

$$\Bigg(\text{Cos}\left[2\left(e+fx\right)\right]\text{Csc}\left[\frac{e}{2}+\frac{fx}{2}\right]^2\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^4\left(g\,\text{Sec}\left[e+fx\right]\right)^p$$

$$\left(a+\right.$$
$$\left.a\,\text{Sec}\left[e+fx\right]\right)^2$$

$$\left(c-c\,\text{Sec}\left[e+fx\right]\right)\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2}{1-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2}\right)^p$$

$$\left(-\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]\right.\right.\right.$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]+\right.$$

$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right]+\right.$$

$$\left(1+p\right)\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]^2,\right.$$

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

$$\Big(12\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Big)\Big/$$

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

$$\Big(4\,\text{AppellF1}\left[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)\Big/$$

$$\Big(\text{AppellF1}\left[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\frac{2}{3}\Big(p\,\text{AppellF1}\left[\frac{3}{2},3+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(3+p)\,\text{AppellF1}\left[\frac{3}{2},4+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big)\Big)\Big)\Big/$$

$$\Bigg(8\,f\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3\Bigg(-\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^4}\,6\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^p$$

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

$$\left(12\,\text{AppellF1}\left[\frac{1}{2},\,2+p,\,-p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$

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

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

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

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

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

$$\left(4\,\text{AppellF1}\left[\frac{1}{2},\,3+p,\,-p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right)\Big/$$

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

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

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

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

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

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

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

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

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

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

$$\left(12\,\text{AppellF1}\left[\frac{1}{2},\,2+p,\,-p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right]\right.$$

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

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

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

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

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

$$\Big(4\,\text{AppellF1}\Big[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$\frac{2}{3}\Big(p\,\text{AppellF1}\Big[\frac{3}{2},3+p,1-p,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$(3+p)\,\text{AppellF1}\Big[\frac{3}{2},4+p,-p,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

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

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

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

$$\Big(-\Big(\Big(3\,\text{AppellF1}\Big[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

$$\Big(-1+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big)^2\Big)\Big/\Big(3\,\text{AppellF1}\Big[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+2\Big(p\,\text{AppellF1}\Big[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+(1+p)\,\text{AppellF1}\Big[\frac{3}{2},2+p,-p,\frac{5}{2},$$

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

$$\Big(12\,\text{AppellF1}\Big[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]$$

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$2\Big(p\,\text{AppellF1}\Big[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]+$$

$$(2+p)\,\text{AppellF1}\Big[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,$$

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

$$\Big(4\,\text{AppellF1}\Big[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2\Big]\Big)\Big/$$

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

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

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

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

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

$$\left(-\left(\left(6\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.\right.\right.$$

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

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

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

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

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

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

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

$$\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

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

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

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

$$\left(12\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.$$

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

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

$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(2+p)\,\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+$$
$$\left(12\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(2+p)$$
$$\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(2+p)\,\text{AppellF1}\left[\frac{3}{2},3+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+$$
$$\left(4\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},3+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.\right.$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+\frac{1}{3}(3+p)\,\text{AppellF1}\left[\frac{3}{2},4+p,-p,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$
$$\left(\text{AppellF1}\left[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$\frac{2}{3}\left(p\,\text{AppellF1}\left[\frac{3}{2},3+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.$$
$$(3+p)\,\text{AppellF1}\left[\frac{3}{2},4+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)+$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},1+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right.$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2$$
$$\left(2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+\right.\right.$$
$$\left.(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]+3\left(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\right.\right.$$

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

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

$$\Big(12\,\text{AppellF1}\left[\frac{1}{2}, 2+p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \Big(2\Big(p\,\text{AppellF1}\left[\frac{3}{2}, 2+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (2+p)\,\text{AppellF1}\left[\frac{3}{2}, 3+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\Big) \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + 3\Big(\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2}, 2+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3}(2+p)\,\text{AppellF1}\left[\frac{3}{2}, 3+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\Big) + 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2 \Big(p\Big(-\frac{3}{5}(1-p)\,\text{AppellF1}\left[\frac{5}{2}, 2+p, 2-p, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(2+p)$$

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

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

$$1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[$$

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

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

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]+2$$

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

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

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

$$\Big(4\,\text{AppellF1}\Big[\frac{1}{2},3+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]$$

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

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

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

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

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

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

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

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{3}{5}(3+p)$$

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

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Big)+(3+p)\,\Big(\frac{3}{5}p\,\text{AppellF1}\Big[\frac{5}{2},4+p,$$

$$1-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[$$

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

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

$$\Big(\mathrm{AppellF1}\Big[\frac{1}{2},\,3+p,\,-p,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]+\frac{2}{3}$$

$$\Big(p\,\mathrm{AppellF1}\Big[\frac{3}{2},\,3+p,\,1-p,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$(3+p)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,4+p,\,-p,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,$$

$$-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]\Big)\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big)^2\Big)\Big)$$

Problem 175: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (g\,\mathrm{Sec}[e+f\,x])^p\,(a+a\,\mathrm{Sec}[e+f\,x])\,(c-c\,\mathrm{Sec}[e+f\,x])\,dx$$

Optimal (type 5, 65 leaves, 2 steps):

$$-\frac{1}{3\,f}$$

$$a\,c\,\left(\mathrm{Cos}[e+f\,x]^2\right)^{\frac{3+p}{2}}\,\mathrm{Hypergeometric2F1}\Big[\frac{3}{2},\,\frac{3+p}{2},\,\frac{5}{2},\,\mathrm{Sin}[e+f\,x]^2\Big]\,(g\,\mathrm{Sec}[e+f\,x])^p\,\mathrm{Tan}[e+f\,x]^3$$

Result (type 6, 6864 leaves):

$$-a\,c$$

$$\Big(-\Big(\Big(\mathrm{Cos}[2\,(e+f\,x)]\,\mathrm{Csc}\Big[\frac{1}{2}(e+f\,x)\Big]\,\mathrm{Sec}\Big[\frac{1}{2}(e+f\,x)\Big]^3\,(-1+\mathrm{Sec}[e+f\,x])\,(g\,\mathrm{Sec}[e+f\,x])^p\,(1+$$

$$\mathrm{Sec}[e+f\,x])\,\left(\frac{1+\mathrm{Tan}\big[\frac{1}{2}(e+f\,x)\big]^2}{1-\mathrm{Tan}\big[\frac{1}{2}(e+f\,x)\big]^2}\right)^p\,\Big(\Big(6\,\mathrm{AppellF1}\Big[\frac{1}{2},\,p,\,1-p,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,$$

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

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\,p,\,1-p,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]+2$$

$$\Big((-1+p)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,p,\,2-p,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$p\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1+p,\,1-p,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]\Big)$$

$$\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big)\Big)-\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\,1+p,\,-p,\,\frac{3}{2},$$

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

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\,1+p,\,-p,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}(e+f\,x)\Big]^2\Big]+$$

$$2\left(p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big)-$$

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/$$

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

$$\Bigg(4f\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg(-\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^3}4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}\right)^p\Bigg(\Bigg(6\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Big/$$

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

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

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\Big/$$

$$\left(\text{AppellF1}\left[\frac{1}{2}, 2+p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + \frac{2}{3}\left(p\,\text{AppellF1}\left[\frac{3}{2}, 2+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + (2+p)\,\text{AppellF1}\left[\frac{3}{2}, 3+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) +$$

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

$$\left(\left(6\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right) \Big/ \left(\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\left(3\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + 2\left((-1+p)\,\text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right] + p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+fx)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right) -$$

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

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

$$\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2}\,2\,p\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(\frac{1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{1-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}\right)^{-1+p}$$

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

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

$$\left(\left(6\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.\right.$$

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

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

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

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},$$

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

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

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

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

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+(1+p)\,\text{AppellF1}\left[\frac{3}{2},2+p,-p,\frac{5}{2},$$

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

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

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

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

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

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

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

$$\left(-\left(\left(6\,\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right.\right.\right.$$

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

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2 \left(3\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+p)\,\text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) +$$

$$\left(12\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) \Big/$$

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \left(3\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+p)\,\text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) +$$

$$\left(6\left(-\frac{1}{3}(1-p)\,\text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3} p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\right) \Big/$$

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right) \left(3\,\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+p)\,\text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) -$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2}, 1+p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) \Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2}, 1+p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left(p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + (1+p)\,\text{AppellF1}\left[\frac{3}{2}, 2+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)$$

$$\text{Tan}[\tfrac{1}{2}(e+f x)]^2\Big) - \Big(3\,\Big(\tfrac{1}{3}\,p\,\text{AppellF1}[\tfrac{3}{2}, 1+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\,\text{Sec}[\tfrac{1}{2}(e+f x)]^2\,\text{Tan}[\tfrac{1}{2}(e+f x)] + \tfrac{1}{3}\,(1+p)$$

$$\text{AppellF1}[\tfrac{3}{2}, 2+p, -p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2]$$

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

$$\Big(3\,\text{AppellF1}[\tfrac{1}{2}, 1+p, -p, \tfrac{3}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2] +$$

$$2\,\Big(p\,\text{AppellF1}[\tfrac{3}{2}, 1+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2] +$$

$$(1+p)\,\text{AppellF1}[\tfrac{3}{2}, 2+p, -p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\Big)$$

$$\text{Tan}[\tfrac{1}{2}(e+f x)]^2\Big) - \Big(2\,\Big(\tfrac{1}{3}\,p\,\text{AppellF1}[\tfrac{3}{2}, 2+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\,\text{Sec}[\tfrac{1}{2}(e+f x)]^2\,\text{Tan}[\tfrac{1}{2}(e+f x)] +$$

$$\tfrac{1}{3}\,(2+p)\,\text{AppellF1}[\tfrac{3}{2}, 3+p, -p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2,$$

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

$$\Big(\text{AppellF1}[\tfrac{1}{2}, 2+p, -p, \tfrac{3}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2] +$$

$$\tfrac{2}{3}\,\Big(p\,\text{AppellF1}[\tfrac{3}{2}, 2+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2] +$$

$$(2+p)\,\text{AppellF1}[\tfrac{3}{2}, 3+p, -p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\Big)$$

$$\text{Tan}[\tfrac{1}{2}(e+f x)]^2\Big) - \Big(6\,\text{AppellF1}[\tfrac{1}{2}, p, 1-p, \tfrac{3}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\,\Big(-1+\text{Tan}[\tfrac{1}{2}(e+f x)]^2\Big)^2\,\Big(2\,\Big((-1+p)$$

$$\text{AppellF1}[\tfrac{3}{2}, p, 2-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2] +$$

$$p\,\text{AppellF1}[\tfrac{3}{2}, 1+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\Big)$$

$$\text{Sec}[\tfrac{1}{2}(e+f x)]^2\,\text{Tan}[\tfrac{1}{2}(e+f x)] + 3\,\Big(-\tfrac{1}{3}\,(1-p)\,\text{AppellF1}[\tfrac{3}{2}, p,$$

$$2-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2, -\text{Tan}[\tfrac{1}{2}(e+f x)]^2]\,\text{Sec}[\tfrac{1}{2}(e+f x)]^2$$

$$\text{Tan}[\tfrac{1}{2}(e+f x)] + \tfrac{1}{3}\,p\,\text{AppellF1}[\tfrac{3}{2}, 1+p, 1-p, \tfrac{5}{2}, \text{Tan}[\tfrac{1}{2}(e+f x)]^2,$$

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

$$2\,\text{Tan}[\tfrac{1}{2}(e+f x)]^2\,\Big((-1+p)\,\Big(-\tfrac{3}{5}\,(2-p)\,\text{AppellF1}[\tfrac{5}{2}, p, 3-p,$$

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

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

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

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

$$\text{Tan}\left[\frac{1}{2}(e+f x)\right] + 3\left(\frac{1}{3} p\,\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right] + \frac{1}{3}(1+p)\,\text{AppellF1}\left[\frac{3}{2}, 2+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right) + 2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$

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

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

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

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

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

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

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

$$-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\mathrm{AppellF1}\left[\frac{1}{2},2+p,-p,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$\frac{2}{3}\Bigg(p\,\mathrm{AppellF1}\left[\frac{3}{2},2+p,1-p,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right]+$$

$$(2+p)\,\mathrm{AppellF1}\Big[\frac{3}{2},3+p,-p,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{8f}\left(\mathrm{Cos}[e+fx]^2\right)^{1+\frac{1+p}{2}}\mathrm{Csc}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{3+p}{2},\frac{3}{2},\mathrm{Sin}[e+fx]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2(-1+\mathrm{Sec}[e+fx])$$

$$\Big((g\,\mathrm{Sec}[e+fx])^p(1+\mathrm{Sec}[e+fx])\,\mathrm{Tan}[e+fx]\Big)$$

Problem 176: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(g\,\mathrm{Sec}[e+fx])^p\,(c-c\,\mathrm{Sec}[e+fx])}{a+a\,\mathrm{Sec}[e+fx]}\,dx$$

Optimal (type 5, 180 leaves, 6 steps):

$$-\left(\left(c\, g\, (1-2p)\, \text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1-p}{2}, \frac{3-p}{2}, \text{Cos}[e+f x]^2\right]\right.\right.$$
$$\left.\left.(g\, \text{Sec}[e+f x])^{-1+p}\, \text{Sin}[e+f x]\right) \Big/ \left(a\, f\, (1-p)\, \sqrt{\text{Sin}[e+f x]^2}\right)\right) +$$
$$\left(2\, c\, \text{Hypergeometric2F1}\left[\frac{1}{2}, -\frac{p}{2}, \frac{2-p}{2}, \text{Cos}[e+f x]^2\right]\, (g\, \text{Sec}[e+f x])^p\, \text{Sin}[e+f x]\right) \Big/$$
$$\left(a\, f\, \sqrt{\text{Sin}[e+f x]^2}\right) - \frac{2\, c\, (g\, \text{Sec}[e+f x])^p\, \text{Tan}[e+f x]}{f\, (a + a\, \text{Sec}[e+f x])}$$

Result (type 6, 3396 leaves):

$$-\left(\left(6\, c\, \text{Sec}[e+f x]^p\, (g\, \text{Sec}[e+f x])^p\, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^3\right.\right.$$
$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\right) \Big/\right.\right.$$
$$\left(3\, \text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +\right.$$
$$2\left((-1+p)\, \text{AppellF1}\left[\frac{3}{2}, p, 2-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + p\right.$$
$$\text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) +$$
$$\text{AppellF1}\left[\frac{1}{2}, p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \Big/$$
$$\left(3\, \text{AppellF1}\left[\frac{1}{2}, p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] +\right.$$
$$2\, p\left(\text{AppellF1}\left[\frac{3}{2}, p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2},\right.\right.$$
$$\left.\left.\left.\left.\left.1+p, -p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right)\right) \Big/$$
$$\left(a\, f\left(3\, \text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \text{Sec}[e+f x]^p\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.\right.\right.\right.\right.\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\right) \Big/ \left(3\, \text{AppellF1}\left[\frac{1}{2}, p, 1-p, \frac{3}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\left((-1+p)\, \text{AppellF1}\left[\frac{3}{2}, p, 2-p,\right.\right.$$
$$\frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + p\, \text{AppellF1}\left[\frac{3}{2}, 1+p, 1-p,\right.$$
$$\left.\left.\left.\left.\frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\right) +$$
$$\text{AppellF1}\left[\frac{1}{2}, p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] \Big/$$
$$\left(3\, \text{AppellF1}\left[\frac{1}{2}, p, -p, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + 2\, p\right.$$
$$\left(\text{AppellF1}\left[\frac{3}{2}, p, 1-p, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2},\right.\right.$$

$$1+p,\ -p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big)\Big)+$$

$$6\,p\,\mathrm{Sec}[e+f\,x]^{1+p}\,\mathrm{Sin}[e+f\,x]\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\ \Big(-\Big(\Big(\mathrm{AppellF1}\Big[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\ \mathrm{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big)\Big/\ \Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\ p,$$

$$1-p,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+2\,\Big(\left(-1+p\right)\mathrm{AppellF1}\Big[\frac{3}{2},\ p,$$

$$2-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+p\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1+p,$$

$$1-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big)\Big)+$$

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

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\ p,\ -p,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+2\,p$$

$$\Big(\mathrm{AppellF1}\Big[\frac{3}{2},\ p,\ 1-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+\mathrm{AppellF1}\Big[\frac{3}{2},$$

$$1+p,\ -p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big)\Big)+$$

$$6\,\mathrm{Sec}[e+f\,x]^p\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\ \Big(\Big(\mathrm{AppellF1}\Big[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,$$

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

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+$$

$$2\,\Big(\left(-1+p\right)\mathrm{AppellF1}\Big[\frac{3}{2},\ p,\ 2-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+$$

$$p\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1+p,\ 1-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\Big)$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big)-\Big(\mathrm{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\ \Big(-\frac{1}{3}\left(1-p\right)\mathrm{AppellF1}\Big[\frac{3}{2},\ p,$$

$$2-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\frac{1}{3}\,p\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1+p,\ 1-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,$$

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

$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\ p,\ 1-p,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+$$

$$2\,\Big(\left(-1+p\right)\mathrm{AppellF1}\Big[\frac{3}{2},\ p,\ 2-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2\Big]+$$

$$p\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1+p,\ 1-p,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2,$$

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

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2p\left(\text{AppellF1}\left[\frac{3}{2},p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},1+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)-$$

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

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

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+3\left(\frac{1}{3}\,p\,\text{AppellF1}\left[\frac{3}{2},p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{3}\,p\,\text{AppellF1}\left[\frac{3}{2},1+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+2p\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2$$

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

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},p,-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+2p\left(\text{AppellF1}\left[\frac{3}{2},p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},1+p,-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\left(\text{AppellF1}\left[\frac{1}{2},p,1-p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]\text{Cos}\left[\frac{1}{2}(e+f x)\right]^2\right.$$

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

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

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

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

$$\frac{1}{3}p\,\text{AppellF1}\left[\frac{3}{2},1+p,1-p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right]$$

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

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

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

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

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

$$2-p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\Big[$$

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

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

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

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

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

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

Problem 177: Unable to integrate problem.

$$\int\frac{(g\,\text{Sec}[e+f x])^p\,(c-c\,\text{Sec}[e+f x])}{(a+a\,\text{Sec}[e+f x])^2}\,dx$$

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

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

Result (type 8, 36 leaves) :

$$\int \frac{(g\, \text{Sec}[e+f x])^p\, (c-c\, \text{Sec}[e+f x])}{(a+a\, \text{Sec}[e+f x])^2}\, dx$$

Problem 180: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[e+f x]^{5/2}}{\sqrt{a+a\, \text{Sec}[e+f x]}\, (c-c\, \text{Sec}[e+f x])}\, dx$$

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

$$-\frac{2\, \text{ArcSinh}\left[\frac{\sqrt{a}\, \text{Tan}[e+f x]}{\sqrt{a+a\, \text{Sec}[e+f x]}}\right]}{\sqrt{a}\, c\, f} + \frac{\text{ArcTanh}\left[\frac{\sqrt{a}\, \sqrt{\text{Sec}[e+f x]}\, \text{Sin}[e+f x]}{\sqrt{2}\, \sqrt{a+a\, \text{Sec}[e+f x]}}\right]}{\sqrt{2}\, \sqrt{a}\, c\, f} + \frac{\text{Csc}[e+f x]\, \sqrt{a+a\, \text{Sec}[e+f x]}}{a\, c\, f\, \sqrt{\text{Sec}[e+f x]}}$$

Result (type 3, 724 leaves) :

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

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

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

Problem 181: Result more than twice size of optimal antiderivative.

$$\int\frac{(g\,\text{Sec}[e+f x])^{3/2}}{\sqrt{a+a\,\text{Sec}[e+f x]}\,(c-c\,\text{Sec}[e+f x])}\,dx$$

Optimal (type 3, 116 leaves, 4 steps):

$$-\frac{g^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{g}\,\text{Tan}[e+f x]}{\sqrt{2}\sqrt{g\,\text{Sec}[e+f x]}\sqrt{a+a\,\text{Sec}[e+f x]}}\right]}{\sqrt{2}\sqrt{a}\,c f}+\frac{g\,\text{Cot}[e+f x]\sqrt{g\,\text{Sec}[e+f x]}\sqrt{a+a\,\text{Sec}[e+f x]}}{a c f}$$

Result (type 3, 431 leaves):

$$\left((g\,\mathrm{Sec}[e+f x])^{3/2}\sqrt{(1+\mathrm{Cos}[e+f x])\,\mathrm{Sec}[e+f x]}\,\sqrt{1+\mathrm{Sec}[e+f x]}\left(-\frac{2\,\mathrm{Cot}[e]}{f}+\frac{\mathrm{Csc}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{e}{2}+\frac{f x}{2}\right]\mathrm{Sin}\left[\frac{f x}{2}\right]}{f}+\frac{\mathrm{Sec}\left[\frac{e}{2}\right]\mathrm{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]\mathrm{Sin}\left[\frac{f x}{2}\right]}{f}\right)\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\right)\Big/\left(\sqrt{a\,(1+\mathrm{Sec}[e+f x])}\,(c-c\,\mathrm{Sec}[e+f x])\right)+$$

$$\left(\left(\mathrm{Log}\left[1-2\,\mathrm{Sec}[e+f x]-3\,\mathrm{Sec}[e+f x]^2-2\sqrt{2}\sqrt{\mathrm{Sec}[e+f x]}\sqrt{1+\mathrm{Sec}[e+f x]}\sqrt{-1+\mathrm{Sec}[e+f x]^2}\right]-\mathrm{Log}\left[1-2\,\mathrm{Sec}[e+f x]-3\,\mathrm{Sec}[e+f x]^2+2\sqrt{2}\sqrt{\mathrm{Sec}[e+f x]}\sqrt{1+\mathrm{Sec}[e+f x]}\sqrt{-1+\mathrm{Sec}[e+f x]^2}\right]\right)(g\,\mathrm{Sec}[e+f x])^{3/2}(1+\mathrm{Sec}[e+f x])^{3/2}\sqrt{-1+\mathrm{Sec}[e+f x]^2}\,\mathrm{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\mathrm{Sin}[e+f x]\right)\Big/\left(2 f\,(1+\mathrm{Cos}[e+f x])\sqrt{2-2\,\mathrm{Cos}[e+f x]^2}\sqrt{1-\mathrm{Cos}[e+f x]^2}\,\mathrm{Sec}[e+f x]^{5/2}\sqrt{a\,(1+\mathrm{Sec}[e+f x])}\,(c-c\,\mathrm{Sec}[e+f x])\right)$$

Problem 183: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[e+f x]^2}{\sqrt{a+a\,\mathrm{Sec}[e+f x]}\sqrt{c-c\,\mathrm{Sec}[e+f x]}}\,dx$$

Optimal (type 3, 46 leaves, 3 steps):

$$\frac{\mathrm{Log}[\mathrm{Tan}[e+f x]]\,\mathrm{Tan}[e+f x]}{f\sqrt{a+a\,\mathrm{Sec}[e+f x]}\sqrt{c-c\,\mathrm{Sec}[e+f x]}}$$

Result (type 3, 129 leaves):

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

Problem 186: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 171 leaves, 7 steps):

$$\frac{a\left(8c^3+12c^2d+12cd^2+3d^3\right)\text{ArcTanh}[\text{Sin}[e+fx]]}{8f}+\frac{a\left(3c^3+16c^2d+12cd^2+4d^3\right)\text{Tan}[e+fx]}{6f}+\frac{ad\left(6c^2+20cd+9d^2\right)\text{Sec}[e+fx]\,\text{Tan}[e+fx]}{24f}+\frac{a(3c+4d)\left(c+d\,\text{Sec}[e+fx]\right)^2\text{Tan}[e+fx]}{12f}+\frac{a\left(c+d\,\text{Sec}[e+fx]\right)^3\text{Tan}[e+fx]}{4f}$$

Result (type 3, 1107 leaves):

$$a\Bigg(\Bigg(\left(-8c^3-12c^2d-12cd^2-3d^3\right)\text{Cos}[e+fx]^4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\Bigg)\Big/\left(16f\left(d+c\,\text{Cos}[e+fx]\right)^3\right)+$$

$$\Bigg(\left(8c^3+12c^2d+12cd^2+3d^3\right)\text{Cos}[e+fx]^4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\Bigg)\Big/\left(16f\left(d+c\,\text{Cos}[e+fx]\right)^3\right)+$$

$$\left(d^3\,\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(32f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4\right)+$$

$$\left(\left(36c^2d+48cd^2+13d^3\right)\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(96f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^2\right)-$$

$$\left(d^3\,\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(32f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4\right)+$$

$$\left(\left(-36c^2d-48cd^2-13d^3\right)\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(96f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^2\right)+$$

$$\left(\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\left(3cd^2\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+d^3\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/\left(12f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\right)+$$

$$\left(\text{Cos}[e+fx]^4\,\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2(1+\text{Sec}[e+fx])\left(c+d\,\text{Sec}[e+fx]\right)^3\left(3cd^2\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+d^3\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/\left(12f\left(d+c\,\text{Cos}[e+fx]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\right)+$$

$$\left(\text{Cos}[e+f x]^4 \,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 (1+\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3 \left(3 c^3 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+9 c^2 d \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+6 c d^2 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+2 d^3 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right) \Big/ \left(6 f (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)+\left(\text{Cos}[e+f x]^4 \,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2 (1+\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3 \left(3 c^3 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+9 c^2 d \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+6 c d^2 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+2 d^3 \,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right) \Big/ \left(6 f (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Bigg)$$

Problem 187: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 240 leaves):

$$\frac{1}{24 f \left(-1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3} a \,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^6 \left(9 \left(2 c^2+2 c d+d^2\right) \text{Cos}[e+f x] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)+3 \left(2 c^2+2 c d+d^2\right) \text{Cos}[3 (e+f x)] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)-4 \left(3 c^2+6 c d+4 d^2+3 d (2 c+d) \,\text{Cos}[e+f x]+\left(3 c^2+6 c d+2 d^2\right) \text{Cos}[2 (e+f x)]\right) \text{Sin}[e+f x]\right)$$

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

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

Optimal (type 3, 56 leaves, 5 steps):

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

Result (type 3, 154 leaves):

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

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

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

Optimal (type 3, 176 leaves, 8 steps):

$$\frac{a^2 (12 c^2 + 16 c d + 7 d^2) \text{ArcTanh}[\text{Sin}[e + f x]]}{8 f} - \frac{a^2 (c^3 - 8 c^2 d - 20 c d^2 - 8 d^3) \text{Tan}[e + f x]}{6 d f} - \frac{a^2 (2 c (c - 8 d) - 21 d^2) \text{Sec}[e + f x] \text{Tan}[e + f x]}{24 f} - \frac{a^2 (c - 8 d) (c + d \text{Sec}[e + f x])^2 \text{Tan}[e + f x]}{12 d f} + \frac{a^2 (c + d \text{Sec}[e + f x])^3 \text{Tan}[e + f x]}{4 d f}$$

Result (type 3, 479 leaves):

$$-\frac{1}{192 f} a^2 \operatorname{Sec}[e+f x]^4 \left(108 c^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+144 c d \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+63 d^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+12\left(12 c^2+16 c d+7 d^2\right) \operatorname{Cos}[2(e+f x)]\left(\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)+3\left(12 c^2+16 c d+7 d^2\right) \operatorname{Cos}[4(e+f x)]\left(\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)-108 c^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-144 c d \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-63 d^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-24 c^2 \operatorname{Sin}[e+f x]-96 c d \operatorname{Sin}[e+f x]-90 d^2 \operatorname{Sin}[e+f x]-96 c^2 \operatorname{Sin}[2(e+f x)]-224 c d \operatorname{Sin}[2(e+f x)]-128 d^2 \operatorname{Sin}[2(e+f x)]-24 c^2 \operatorname{Sin}[3(e+f x)]-96 c d \operatorname{Sin}[3(e+f x)]-42 d^2 \operatorname{Sin}[3(e+f x)]-48 c^2 \operatorname{Sin}[4(e+f x)]-80 c d \operatorname{Sin}[4(e+f x)]-32 d^2 \operatorname{Sin}[4(e+f x)]\right)$$

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

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

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

$$\frac{a^2 (3 c+2 d) \operatorname{ArcTanh}[\operatorname{Sin}[e+f x]]}{2 f}+\frac{2 a^2 (3 c+2 d) \operatorname{Tan}[e+f x]}{3 f}+\frac{a^2 (3 c+2 d) \operatorname{Sec}[e+f x] \operatorname{Tan}[e+f x]}{6 f}+\frac{d (a+a \operatorname{Sec}[e+f x])^2 \operatorname{Tan}[e+f x]}{3 f}$$

Result (type 3, 993 leaves):

$$\left(\left(-3 c-2 d\right) \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x])\right) \Big/ \left(8 f (d+c \text{Cos}[e+f x])\right)+$$
$$\left(\left(3 c+2 d\right) \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x])\right) \Big/ \left(8 f (d+c \text{Cos}[e+f x])\right)+$$
$$\left(d \text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(24 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^3\right)+$$
$$\left(\text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \left(3 c \text{Cos}\left[\frac{e}{2}\right]+7 d \text{Cos}\left[\frac{e}{2}\right]-3 c \text{Sin}\left[\frac{e}{2}\right]-5 d \text{Sin}\left[\frac{e}{2}\right]\right)\right) \Big/ \left(48 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^2\right)+$$
$$\left(\text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \left(6 c \text{Sin}\left[\frac{f x}{2}\right]+5 d \text{Sin}\left[\frac{f x}{2}\right]\right)\right) \Big/ \left(12 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right)+$$
$$\left(d \text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \text{Sin}\left[\frac{f x}{2}\right]\right) \Big/ \left(24 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^3\right)+$$
$$\left(\text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \left(-3 c \text{Cos}\left[\frac{e}{2}\right]-7 d \text{Cos}\left[\frac{e}{2}\right]-3 c \text{Sin}\left[\frac{e}{2}\right]-5 d \text{Sin}\left[\frac{e}{2}\right]\right)\right) \Big/ \left(48 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^2\right)+$$
$$\left(\text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}+\frac{f x}{2}\right]^4 (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x]) \left(6 c \text{Sin}\left[\frac{f x}{2}\right]+5 d \text{Sin}\left[\frac{f x}{2}\right]\right)\right) \Big/ \left(12 f (d+c \text{Cos}[e+f x]) \left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right) \left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)\right)$$

Problem 197: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 95 leaves, 8 steps):

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

Result (type 3, 329 leaves):

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

Problem 198: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 117 leaves, 8 steps):

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

Result (type 3, 312 leaves):

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

Problem 199: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 130 leaves, 5 steps):

$$\frac{3 a^2 \operatorname{ArcTanh}\left[\frac{\sqrt{c-d} \operatorname{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{c+d}}\right]}{\sqrt{c-d} \left(c+d\right)^{5/2} f}+\frac{\left(a^2+a^2 \operatorname{Sec}[e+f x]\right) \operatorname{Tan}[e+f x]}{2 \left(c+d\right) f \left(c+d \operatorname{Sec}[e+f x]\right)^2}+\frac{3 a^2 \operatorname{Tan}[e+f x]}{2 \left(c+d\right)^2 f \left(c+d \operatorname{Sec}[e+f x]\right)}$$

Result (type 3, 249 leaves):

$$\left(a^2 \left(d+c \operatorname{Cos}[e+f x]\right) \operatorname{Sec}\left[\frac{1}{2} (e+f x)\right]^4 \operatorname{Sec}[e+f x] \left(1+\operatorname{Sec}[e+f x]\right)^2 \left(-\left(\left(6 i \operatorname{ArcTan}\left[\left(\left(i \operatorname{Cos}[e]+\operatorname{Sin}[e]\right) \left(c \operatorname{Sin}[e]+\left(-d+c \operatorname{Cos}[e]\right) \operatorname{Tan}\left[\frac{f x}{2}\right]\right)\right) \Big/ \left(\sqrt{c^2-d^2} \sqrt{\left(\operatorname{Cos}[e]-i \operatorname{Sin}[e]\right)^2}\right)\right] \left(d+c \operatorname{Cos}[e+f x]\right)^2 \left(\operatorname{Cos}[e]-i \operatorname{Sin}[e]\right)\right) \Big/ \left(\sqrt{c^2-d^2} \sqrt{\left(\operatorname{Cos}[e]-i \operatorname{Sin}[e]\right)^2}\right)\right)+\frac{\left(c-d\right) \left(c+d\right) \operatorname{Sec}[e] \left(-d \operatorname{Sin}[e]+c \operatorname{Sin}[f x]\right)}{c^2}+\frac{1}{c^2} \left(d+c \operatorname{Cos}[e+f x]\right) \operatorname{Sec}[e] \left(\left(c^2-4 c d-2 d^2\right) \operatorname{Sin}[e]+c \left(4 c+d\right) \operatorname{Sin}[f x]\right)\right)\right) \Big/ \left(8 \left(c+d\right)^2 f \left(c+d \operatorname{Sec}[e+f x]\right)^3\right)$$

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

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

Optimal (type 3, 125 leaves, 10 steps):

$$\frac{5 a^3 (4 c+3 d) \text{ArcTanh}[\text{Sin}[e+f x]]}{8 f}+\frac{a^3 (4 c+3 d) \text{Tan}[e+f x]}{f}+\frac{3 a^3 (4 c+3 d) \text{Sec}[e+f x] \text{Tan}[e+f x]}{8 f}+\frac{d (a+a \text{Sec}[e+f x])^3 \text{Tan}[e+f x]}{4 f}+\frac{a^3 (4 c+3 d) \text{Tan}[e+f x]^3}{12 f}$$

Result (type 3, 273 leaves):

$$-\frac{1}{1536 f} a^3 (1+\text{Cos}[e+f x])^3 \text{Sec}\left[\frac{1}{2} (e+f x)\right]^6 \text{Sec}[e+f x]^4 \left(120 (4 c+3 d) \text{Cos}[e+f x]^4 \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]\right)-\text{Sec}[e] (-24 (11 c+9 d) \text{Sin}[e]+(36 c+69 d) \text{Sin}[f x]+36 c \text{Sin}[2 e+f x]+69 d \text{Sin}[2 e+f x]+280 c \text{Sin}[e+2 f x]+264 d \text{Sin}[e+2 f x]-72 c \text{Sin}[3 e+2 f x]-24 d \text{Sin}[3 e+2 f x]+36 c \text{Sin}[2 e+3 f x]+45 d \text{Sin}[2 e+3 f x]+36 c \text{Sin}[4 e+3 f x]+45 d \text{Sin}[4 e+3 f x]+88 c \text{Sin}[3 e+4 f x]+72 d \text{Sin}[3 e+4 f x])\right)$$

Problem 205: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 153 leaves, 9 steps):

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

Result (type 3, 419 leaves):

$$\frac{1}{32\, d^3\, f\, \left(c+d\, \text{Sec}[e+f\, x]\right)}\, a^3\, \text{Cos}[e+f\, x]^2\, \left(d+c\, \text{Cos}[e+f\, x]\right)\, \text{Sec}\left[\frac{1}{2}\, (e+f\, x)\right]^6$$

$$\left(1+\text{Sec}[e+f\, x]\right)^3\, \left(-2\, \left(2\, c^2-6\, c\, d+7\, d^2\right)\, \text{Log}\left[\text{Cos}\left[\frac{1}{2}\, (e+f\, x)\right]-\text{Sin}\left[\frac{1}{2}\, (e+f\, x)\right]\right]+\right.$$

$$2\, \left(2\, c^2-6\, c\, d+7\, d^2\right)\, \text{Log}\left[\text{Cos}\left[\frac{1}{2}\, (e+f\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (e+f\, x)\right]\right]+\left(8\, (c-d)^3\right.$$

$$\left.\text{ArcTan}\left[\frac{\left(\mathbb{i}\, \text{Cos}[e]+\text{Sin}[e]\right)\, \left(c\, \text{Sin}[e]+\left(-d+c\, \text{Cos}[e]\right)\, \text{Tan}\left[\frac{f\, x}{2}\right]\right)}{\sqrt{c^2-d^2}\, \sqrt{\left(\text{Cos}[e]-\mathbb{i}\, \text{Sin}[e]\right)^2}}\right]\, \left(\mathbb{i}\, \text{Cos}[e]+\text{Sin}[e]\right)\right)\Big/$$

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

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

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

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

Problem 206: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 161 leaves, 9 steps):

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

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

Result (type 3, 979 leaves):

$$\left(\left(2c-3d\right)\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)^2\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]\right]\right.$$
$$\left.\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(8d^3f\left(c+d\,\text{Sec}[e+fx]\right)^2\right)+$$
$$\left(\left(-2c+3d\right)\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)^2\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]\right]\right.$$
$$\left.\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\right)\Big/\left(8d^3f\left(c+d\,\text{Sec}[e+fx]\right)^2\right)+$$
$$\left(\left(-c+d\right)^2\left(2c+3d\right)\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)^2\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\right.$$
$$\left(-\left(\left(i\,\text{ArcTan}\left[\text{Sec}\left[\frac{fx}{2}\right]\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}-\right.\right.\right.\right.\right.$$
$$\left.\left.\frac{i\,\text{Sin}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}\right)\left(-i\,d\,\text{Sin}\left[\frac{fx}{2}\right]+i\,c\,\text{Sin}\left[e+\frac{fx}{2}\right]\right)\right]$$
$$\left.\left.\text{Cos}[e]\right)\Big/\left(4d^3\sqrt{c^2-d^2}\,f\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}\right)\right)-$$
$$\left(\text{ArcTan}\left[\text{Sec}\left[\frac{fx}{2}\right]\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}-\frac{i\,\text{Sin}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}\right)\right.\right.$$
$$\left.\left.\left(-i\,d\,\text{Sin}\left[\frac{fx}{2}\right]+i\,c\,\text{Sin}\left[e+\frac{fx}{2}\right]\right)\right]\text{Sin}[e]\right)\Big/$$
$$\left.\left.\left(4d^3\sqrt{c^2-d^2}\,f\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}\right)\right)\right)\Big/\left(\left(c+d\right)\left(c+d\,\text{Sec}[e+fx]\right)^2\right)+$$
$$\left(\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\right.$$
$$\left.\left(-c^2d\,\text{Sin}[e]+2cd^2\text{Sin}[e]-d^3\text{Sin}[e]+c^3\text{Sin}[fx]-2c^2d\,\text{Sin}[fx]+cd^2\text{Sin}[fx]\right)\right)\Big/$$
$$\left(8cd^2\left(c+d\right)f\left(c+d\,\text{Sec}[e+fx]\right)^2\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\right)+$$
$$\left(\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)^2\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\text{Sin}\left[\frac{fx}{2}\right]\right)\Big/$$
$$\left(8d^2f\left(c+d\,\text{Sec}[e+fx]\right)^2\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]\right)\right)+$$
$$\left(\text{Cos}[e+fx]\left(d+c\,\text{Cos}[e+fx]\right)^2\text{Sec}\left[\frac{e}{2}+\frac{fx}{2}\right]^6\left(a+a\,\text{Sec}[e+fx]\right)^3\text{Sin}\left[\frac{fx}{2}\right]\right)\Big/$$
$$\left(8d^2f\left(c+d\,\text{Sec}[e+fx]\right)^2\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{fx}{2}\right]\right)\right)$$

Problem 207: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 188 leaves, 9 steps):

$$\frac{a^3 \operatorname{ArcTanh}[\operatorname{Sin}[e+f x]]}{d^3 f}-\frac{a^3 \sqrt{c-d}\left(2 c^2+6 c d+7 d^2\right) \operatorname{ArcTanh}\left[\frac{\sqrt{c-d} \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c+d}}\right]}{d^3 (c+d)^{5/2} f}-\frac{(c-d)\left(a^3+a^3 \operatorname{Sec}[e+f x]\right) \operatorname{Tan}[e+f x]}{2 d (c+d) f (c+d \operatorname{Sec}[e+f x])^2}-\frac{a^3 (c-d)(2 c+5 d) \operatorname{Tan}[e+f x]}{2 d^2 (c+d)^2 f (c+d \operatorname{Sec}[e+f x])}$$

Result (type 3, 393 leaves):

$$\frac{1}{32 d^3 f (c+d \operatorname{Sec}[e+f x])^3} a^3 (d+c \operatorname{Cos}[e+f x]) \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^6 (1+\operatorname{Sec}[e+f x])^3 \left(-4 (d+c \operatorname{Cos}[e+f x])^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+4 (d+c \operatorname{Cos}[e+f x])^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+\left(4 \left(2 c^3+4 c^2 d+c d^2-7 d^3\right) \operatorname{ArcTan}\left[\frac{(i \operatorname{Cos}[e]+\operatorname{Sin}[e])\left(c \operatorname{Sin}[e]+(-d+c \operatorname{Cos}[e]) \operatorname{Tan}\left[\frac{f x}{2}\right]\right)}{\sqrt{c^2-d^2} \sqrt{(\operatorname{Cos}[e]-i \operatorname{Sin}[e])^2}}\right] (d+c \operatorname{Cos}[e+f x])^2 (i \operatorname{Cos}[e]+\operatorname{Sin}[e])\right) \Big/ \left((c+d)^2 \sqrt{c^2-d^2} \sqrt{(\operatorname{Cos}[e]-i \operatorname{Sin}[e])^2}\right)+\frac{1}{c^2 (c+d)^2} (c-d) d \operatorname{Sec}[e] \left(\left(2 c^4+6 c^3 d+5 c^2 d^2+12 c d^3+2 d^4\right) \operatorname{Sin}[e]-c \left(d \left(7 c^2+18 c d+2 d^2\right) \operatorname{Sin}[f x]-d \left(c^2+6 c d+2 d^2\right) \operatorname{Sin}[2 e+f x]+c \left(2 c^2+6 c d+d^2\right) \operatorname{Sin}[e+2 f x]\right)\right)\right)$$

Problem 208: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Sec}[e+f x] (a+a \operatorname{Sec}[e+f x])^3}{(c+d \operatorname{Sec}[e+f x])^4} \, dx$$

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

$$\frac{5 a^3 \operatorname{ArcTanh}\left[\frac{\sqrt{c-d} \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c+d}}\right]}{\sqrt{c-d} (c+d)^{7/2} f}+\frac{a (a+a \operatorname{Sec}[e+f x])^2 \operatorname{Tan}[e+f x]}{3 (c+d) f (c+d \operatorname{Sec}[e+f x])^3}-\frac{5 a^3 (c-d) \operatorname{Tan}[e+f x]}{6 d (c+d)^2 f (c+d \operatorname{Sec}[e+f x])^2}+\frac{5 a^3 (c+4 d) \operatorname{Tan}[e+f x]}{6 d (c+d)^3 f (c+d \operatorname{Sec}[e+f x])}$$

Result (type 3, 398 leaves):

$$\frac{1}{192\,(c+d)^3\,f\,(c+d\,\text{Sec}[e+f\,x])^4}\,a^3\,(d+c\,\text{Cos}[e+f\,x])\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^6\,\text{Sec}[e+f\,x]\,(1+\text{Sec}[e+f\,x])^3$$
$$\left(-\left(\left(120\,\text{i}\,\text{ArcTan}\left[\left((\text{i}\,\text{Cos}[e]+\text{Sin}[e])\,\left(c\,\text{Sin}[e]+(-d+c\,\text{Cos}[e])\,\text{Tan}\left[\frac{f\,x}{2}\right]\right)\right)\Big/\right.\right.\right.\right.$$
$$\left.\left(\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\text{i}\,\text{Sin}[e])^2}\right)\right]\,(d+c\,\text{Cos}[e+f\,x])^3$$
$$\left.\left.(\text{Cos}[e]-\text{i}\,\text{Sin}[e])\right)\Big/\left(\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\text{i}\,\text{Sin}[e])^2}\right)\right)+$$
$$\frac{1}{c^3}\,\left(c\,\text{Sec}[e]\,\left(6\,\left(8\,c^4+6\,c^3\,d+30\,c^2\,d^2+9\,c\,d^3+2\,d^4\right)\,\text{Sin}[f\,x]-\right.\right.$$
$$3\,\left(6\,c^4-3\,c^3\,d+30\,c^2\,d^2+18\,c\,d^3+4\,d^4\right)\,\text{Sin}[2\,e+f\,x]+c\,\left(3\,\left(3\,c^3+38\,c^2\,d+12\,c\,d^2+2\,d^3\right)\right.$$
$$\text{Sin}[e+2\,f\,x]+3\,\left(3\,c^3-6\,c^2\,d-6\,c\,d^2-2\,d^3\right)\,\text{Sin}[3\,e+2\,f\,x]+c\,\left(22\,c^2+9\,c\,d+2\,d^2\right)$$
$$\left.\left.\left.\text{Sin}[2\,e+3\,f\,x]\right)\right)-2\,d\,\left(66\,c^4+27\,c^3\,d+50\,c^2\,d^2+18\,c\,d^3+4\,d^4\right)\,\text{Tan}[e]\right)\Bigg)$$

Problem 210: Result more than twice size of optimal antiderivative.

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

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

$$\frac{d\,\left(8\,c^3-12\,c^2\,d+12\,c\,d^2-3\,d^3\right)\,\text{ArcTanh}[\text{Sin}[e+f\,x]]}{2\,a\,f}-$$
$$\frac{(3\,c-4\,d)\,d\,(c+d\,\text{Sec}[e+f\,x])^2\,\text{Tan}[e+f\,x]}{3\,a\,f}+\frac{(c-d)\,(c+d\,\text{Sec}[e+f\,x])^3\,\text{Tan}[e+f\,x]}{f\,(a+a\,\text{Sec}[e+f\,x])}-$$
$$\frac{1}{6\,a\,f}d\,\left(4\,\left(3\,c^3-16\,c^2\,d+12\,c\,d^2-4\,d^3\right)+d\,\left(6\,c^2-20\,c\,d+9\,d^2\right)\,\text{Sec}[e+f\,x]\right)\,\text{Tan}[e+f\,x]$$

Result (type 3, 1243 leaves):

$$\left(\left(-8 c^3 d+12 c^2 d^2-12 c d^3+3 d^4\right) \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c+d \text{Sec}[e+f x])^4\right)\Big/\left(f (d+c \text{Cos}[e+f x])^4 (a+a \text{Sec}[e+f x])\right)+$$

$$\left(\left(8 c^3 d-12 c^2 d^2+12 c d^3-3 d^4\right) \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c+d \text{Sec}[e+f x])^4\right)\Big/\left(f (d+c \text{Cos}[e+f x])^4 (a+a \text{Sec}[e+f x])\right)+$$

$$\frac{1}{48 f (d+c \text{Cos}[e+f x])^4 (a+a \text{Sec}[e+f x])}\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right] \text{Sec}\left[\frac{e}{2}\right] \text{Sec}[e] (c+d \text{Sec}[e+f x])^4$$

$$\left(-18 c^4 \text{Sin}\left[\frac{f x}{2}\right]+72 c^3 d \text{Sin}\left[\frac{f x}{2}\right]-36 c^2 d^2 \text{Sin}\left[\frac{f x}{2}\right]+24 c d^3 \text{Sin}\left[\frac{f x}{2}\right]+6 d^4 \text{Sin}\left[\frac{f x}{2}\right]+\right.$$

$$18 c^4 \text{Sin}\left[\frac{3 f x}{2}\right]-72 c^3 d \text{Sin}\left[\frac{3 f x}{2}\right]+180 c^2 d^2 \text{Sin}\left[\frac{3 f x}{2}\right]-108 c d^3 \text{Sin}\left[\frac{3 f x}{2}\right]+$$

$$39 d^4 \text{Sin}\left[\frac{3 f x}{2}\right]-72 c^2 d^2 \text{Sin}\left[e-\frac{f x}{2}\right]+48 c d^3 \text{Sin}\left[e-\frac{f x}{2}\right]-24 d^4 \text{Sin}\left[e-\frac{f x}{2}\right]-$$

$$36 c^2 d^2 \text{Sin}\left[e+\frac{f x}{2}\right]+24 c d^3 \text{Sin}\left[e+\frac{f x}{2}\right]-6 d^4 \text{Sin}\left[e+\frac{f x}{2}\right]-18 c^4 \text{Sin}\left[2 e+\frac{f x}{2}\right]+$$

$$72 c^3 d \text{Sin}\left[2 e+\frac{f x}{2}\right]-144 c^2 d^2 \text{Sin}\left[2 e+\frac{f x}{2}\right]+96 c d^3 \text{Sin}\left[2 e+\frac{f x}{2}\right]-24 d^4 \text{Sin}\left[2 e+\frac{f x}{2}\right]+$$

$$72 c^2 d^2 \text{Sin}\left[e+\frac{3 f x}{2}\right]-36 c d^3 \text{Sin}\left[e+\frac{3 f x}{2}\right]+21 d^4 \text{Sin}\left[e+\frac{3 f x}{2}\right]+18 c^4 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-$$

$$72 c^3 d \text{Sin}\left[2 e+\frac{3 f x}{2}\right]+72 c^2 d^2 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-36 c d^3 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]+$$

$$9 d^4 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-36 c^2 d^2 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+36 c d^3 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]-$$

$$9 d^4 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+36 c^2 d^2 \text{Sin}\left[e+\frac{5 f x}{2}\right]-12 c d^3 \text{Sin}\left[e+\frac{5 f x}{2}\right]+7 d^4 \text{Sin}\left[e+\frac{5 f x}{2}\right]-$$

$$6 c^4 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+24 c^3 d \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+12 c d^3 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+$$

$$d^4 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+12 c d^3 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-3 d^4 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-6 c^4 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+$$

$$24 c^3 d \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-36 c^2 d^2 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+36 c d^3 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-$$

$$9 d^4 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+6 c^4 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-24 c^3 d \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+72 c^2 d^2 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-$$

$$48 c d^3 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+16 d^4 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+36 c^2 d^2 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]-$$

$$24 c d^3 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]+10 d^4 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]+6 c^4 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]-24 c^3 d \text{Sin}\left[4 e+\frac{7 f x}{2}\right]+$$

$$\left.36 c^2 d^2 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]-24 c d^3 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]+6 d^4 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]\right)$$

Problem 211: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 117 leaves, 6 steps):

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

Result (type 3, 275 leaves):

$$\frac{1}{a f \left(1+\text{Cos}[e+f x]\right)} \text{Cos}\left[\frac{1}{2} (e+f x)\right]^6 \text{Sec}[e+f x]^2 \left(16 d^3 \,\text{Csc}[e+f x]^3 \,\text{Sin}\left[\frac{1}{2} (e+f x)\right]^4+\left(-1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]^2\right) \left(3 d \left(2 c^2-2 c d+d^2\right) \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]\right)-2 \left(c^3-3 c^2 d+9 c d^2-3 d^3\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]-3 d \left(2 c^2-2 c d+d^2\right) \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2+2 (c-d)^3 \,\text{Tan}\left[\frac{1}{2} (e+f x)\right]^3\right)\right)$$

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

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

Optimal (type 3, 68 leaves, 6 steps):

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

Result (type 3, 237 leaves):

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

Problem 213: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 43 leaves, 3 steps):

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

Result (type 3, 109 leaves):

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

Problem 214: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 83 leaves, 4 steps):

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

Result (type 3, 160 leaves):

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

Problem 215: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 6 steps):

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

Result (type 3, 286 leaves):

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

Problem 216: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

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

Optimal (type 3, 207 leaves, 7 steps):

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

Result (type 3, 1422 leaves):

$$\left(\left(2 c^2+2 c d+d^2\right) \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 (d+c \text{Cos}[e+f x])^3 \text{Sec}[e+f x]^4 \left(-\left(\left(6 i d \text{ArcTan}\left[\text{Sec}\left[\frac{f x}{2}\right] \left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2} \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}}-\frac{i \text{Sin}[e]}{\sqrt{c^2-d^2} \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}}\right) \left(-i d \text{Sin}\left[\frac{f x}{2}\right]+i c \text{Sin}\left[e+\frac{f x}{2}\right]\right)\right] \text{Cos}[e]\right) \middle/ \left(\sqrt{c^2-d^2} f \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}\right)\right)-\left(6 d \text{ArcTan}\left[\text{Sec}\left[\frac{f x}{2}\right] \left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2} \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}}-\frac{i \text{Sin}[e]}{\sqrt{c^2-d^2} \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}}\right) \left(-i d \text{Sin}\left[\frac{f x}{2}\right]+i c \text{Sin}\left[e+\frac{f x}{2}\right]\right)\right] \text{Sin}[e]\right) \middle/ \left(\sqrt{c^2-d^2} f \sqrt{\text{Cos}[2 e]-i \text{Sin}[2 e]}\right)\right)\right) \middle/ \left((-c+d)^3 (c+d)^2 (a+a \text{Sec}[e+f x]) (c+d \text{Sec}[e+f x])^3\right)+$$

$$\frac{1}{8 c^2 (-c+d)^3 (c+d)^2 f (a+a \text{Sec}[e+f x]) (c+d \text{Sec}[e+f x])^3} \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right] (d+c \text{Cos}[e+f x]) \text{Sec}\left[\frac{e}{2}\right] \text{Sec}[e] \text{Sec}[e+f x]^4$$

$$\left(8 c^5 d \text{Sin}\left[\frac{f x}{2}\right]+10 c^4 d^2 \text{Sin}\left[\frac{f x}{2}\right]-11 c^3 d^3 \text{Sin}\left[\frac{f x}{2}\right]-17 c^2 d^4 \text{Sin}\left[\frac{f x}{2}\right]-2 c d^5 \text{Sin}\left[\frac{f x}{2}\right]+2 d^6 \text{Sin}\left[\frac{f x}{2}\right]-8 c^5 d \text{Sin}\left[\frac{3 f x}{2}\right]-22 c^4 d^2 \text{Sin}\left[\frac{3 f x}{2}\right]-27 c^3 d^3 \text{Sin}\left[\frac{3 f x}{2}\right]-5 c^2 d^4 \text{Sin}\left[\frac{3 f x}{2}\right]+2 c d^5 \text{Sin}\left[\frac{3 f x}{2}\right]+\right.$$

$4 c^6 \text{Sin}\left[e-\frac{f x}{2}\right]+8 c^5 d \text{Sin}\left[e-\frac{f x}{2}\right]+18 c^4 d^2 \text{Sin}\left[e-\frac{f x}{2}\right]+$
$35 c^3 d^3 \text{Sin}\left[e-\frac{f x}{2}\right]+25 c^2 d^4 \text{Sin}\left[e-\frac{f x}{2}\right]+2 c d^5 \text{Sin}\left[e-\frac{f x}{2}\right]-$
$2 d^6 \text{Sin}\left[e-\frac{f x}{2}\right]-4 c^6 \text{Sin}\left[e+\frac{f x}{2}\right]-8 c^5 d \text{Sin}\left[e+\frac{f x}{2}\right]-6 c^4 d^2 \text{Sin}\left[e+\frac{f x}{2}\right]-$
$7 c^3 d^3 \text{Sin}\left[e+\frac{f x}{2}\right]+5 c^2 d^4 \text{Sin}\left[e+\frac{f x}{2}\right]+2 c d^5 \text{Sin}\left[e+\frac{f x}{2}\right]-2 d^6 \text{Sin}\left[e+\frac{f x}{2}\right]+$
$8 c^5 d \text{Sin}\left[2 e+\frac{f x}{2}\right]+22 c^4 d^2 \text{Sin}\left[2 e+\frac{f x}{2}\right]+17 c^3 d^3 \text{Sin}\left[2 e+\frac{f x}{2}\right]+$
$13 c^2 d^4 \text{Sin}\left[2 e+\frac{f x}{2}\right]+2 c d^5 \text{Sin}\left[2 e+\frac{f x}{2}\right]-2 d^6 \text{Sin}\left[2 e+\frac{f x}{2}\right]+2 c^6 \text{Sin}\left[e+\frac{3 f x}{2}\right]+$
$4 c^5 d \text{Sin}\left[e+\frac{3 f x}{2}\right]-4 c^4 d^2 \text{Sin}\left[e+\frac{3 f x}{2}\right]-19 c^3 d^3 \text{Sin}\left[e+\frac{3 f x}{2}\right]-$
$5 c^2 d^4 \text{Sin}\left[e+\frac{3 f x}{2}\right]+2 c d^5 \text{Sin}\left[e+\frac{3 f x}{2}\right]-8 c^5 d \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-$
$16 c^4 d^2 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-c^3 d^3 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]+2 c^2 d^4 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]-$
$2 c d^5 \text{Sin}\left[2 e+\frac{3 f x}{2}\right]+2 c^6 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+4 c^5 d \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+$
$2 c^4 d^2 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+7 c^3 d^3 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]+2 c^2 d^4 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]-$
$2 c d^5 \text{Sin}\left[3 e+\frac{3 f x}{2}\right]-2 c^6 \text{Sin}\left[e+\frac{5 f x}{2}\right]-4 c^5 d \text{Sin}\left[e+\frac{5 f x}{2}\right]-$
$8 c^4 d^2 \text{Sin}\left[e+\frac{5 f x}{2}\right]-2 c^3 d^3 \text{Sin}\left[e+\frac{5 f x}{2}\right]+c^2 d^4 \text{Sin}\left[e+\frac{5 f x}{2}\right]-$
$6 c^4 d^2 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]-2 c^3 d^3 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+c^2 d^4 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]-$
$\left.2 c^6 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-4 c^5 d \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-2 c^4 d^2 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]\right)$

Problem 217: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 258 leaves, 8 steps):

$$\frac{5\,(2c-d)\,d^2\,(2c^2-3cd+2d^2)\,\mathrm{ArcTanh}[\mathrm{Sin}[e+fx]]}{2a^2 f}-\frac{d\,(c^2+10cd-12d^2)\,(c+d\,\mathrm{Sec}[e+fx])^2\,\mathrm{Tan}[e+fx]}{3a^2 f}+\frac{(c-d)\,(c+10d)\,(c+d\,\mathrm{Sec}[e+fx])^3\,\mathrm{Tan}[e+fx]}{3f\,(a^2+a^2\,\mathrm{Sec}[e+fx])}+\frac{(c-d)\,(c+d\,\mathrm{Sec}[e+fx])^4\,\mathrm{Tan}[e+fx]}{3f\,(a+a\,\mathrm{Sec}[e+fx])^2}-\frac{1}{6a^2 f}d\,\left(4\,(c^4+10c^3 d-44c^2d^2+40cd^3-12d^4)+d\,(2c^3+20c^2d-57cd^2+30d^3)\,\mathrm{Sec}[e+fx]\right)\mathrm{Tan}[e+fx]$$

Result (type 3, 743 leaves):

$$\left(10\,(-4c^3d^2+8c^2d^3-7cd^4+2d^5)\,\mathrm{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]^4\mathrm{Cos}[e+fx]^3\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right]\,(c+d\,\mathrm{Sec}[e+fx])^5\right)\Big/\left(f\,(d+c\,\mathrm{Cos}[e+fx])^5\,(a+a\,\mathrm{Sec}[e+fx])^2\right)-$$
$$\left(10\,(-4c^3d^2+8c^2d^3-7cd^4+2d^5)\,\mathrm{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]^4\mathrm{Cos}[e+fx]^3\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right]\,(c+d\,\mathrm{Sec}[e+fx])^5\right)\Big/\left(f\,(d+c\,\mathrm{Cos}[e+fx])^5\,(a+a\,\mathrm{Sec}[e+fx])^2\right)+\frac{1}{24f\,(d+c\,\mathrm{Cos}[e+fx])^5\,(a+a\,\mathrm{Sec}[e+fx])^2}$$
$$\mathrm{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]^4\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^3(c+d\,\mathrm{Sec}[e+fx])^5$$
$$\Big(6c^5\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]-30c^4d\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]+60c^3d^2\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]-15cd^4\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]+18d^5\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]-2c^5\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]+40c^4d\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]-140c^3d^2\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]+320c^2d^3\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]-205cd^4\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]+70d^5\,\mathrm{Sin}\left[\frac{3}{2}(e+fx)\right]+6c^5\,\mathrm{Sin}\left[\frac{5}{2}(e+fx)\right]-60c^3d^2\,\mathrm{Sin}\left[\frac{5}{2}(e+fx)\right]+240c^2d^3\,\mathrm{Sin}\left[\frac{5}{2}(e+fx)\right]-165cd^4\,\mathrm{Sin}\left[\frac{5}{2}(e+fx)\right]+54d^5\,\mathrm{Sin}\left[\frac{5}{2}(e+fx)\right]+15c^4d\,\mathrm{Sin}\left[\frac{7}{2}(e+fx)\right]-60c^3d^2\,\mathrm{Sin}\left[\frac{7}{2}(e+fx)\right]+180c^2d^3\,\mathrm{Sin}\left[\frac{7}{2}(e+fx)\right]-135cd^4\,\mathrm{Sin}\left[\frac{7}{2}(e+fx)\right]+42d^5\,\mathrm{Sin}\left[\frac{7}{2}(e+fx)\right]+2c^5\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]+5c^4d\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]-40c^3d^2\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]+100c^2d^3\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]-80cd^4\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]+24d^5\,\mathrm{Sin}\left[\frac{9}{2}(e+fx)\right]\Big)$$

Problem 219: Result more than twice size of optimal antiderivative.

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

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

$$\frac{(3 c-2 d) d^2 \text{ArcTanh}[\text{Sin}[e+f x]]}{a^2 f}+\frac{(c-d) \left(c+d \text{Sec}[e+f x]\right)^2 \text{Tan}[e+f x]}{3 f \left(a+a \text{Sec}[e+f x]\right)^2}+\frac{\left(c^3+4 c^2 d-12 c d^2+10 d^3-(c-4 d) d^2 \text{Sec}[e+f x]\right) \text{Tan}[e+f x]}{3 f \left(a^2+a^2 \text{Sec}[e+f x]\right)}$$

Result (type 3, 294 leaves):

$$\frac{1}{3 a^2 f \left(1+\text{Cos}[e+f x]\right)^2} 2 \text{Cos}\left[\frac{1}{2} (e+f x)\right]^6 \text{Sec}[e+f x] \left(6 d^2 (-3 c+2 d) \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]\right)-8 (c-d)^3 \text{Csc}[e+f x]^3 \text{Sin}\left[\frac{1}{2} (e+f x)\right]^4+32 (c-d)^3 \text{Csc}[e+f x]^5 \text{Sin}\left[\frac{1}{2} (e+f x)\right]^8+2 \left(2 c^3+3 c^2 d-12 c d^2+13 d^3\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]+6 (3 c-2 d) d^2 \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right]\right) \text{Tan}\left[\frac{1}{2} (e+f x)\right]^2-2 (c-d)^2 (2 c+7 d) \text{Tan}\left[\frac{1}{2} (e+f x)\right]^3\right)$$

Problem 220: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 3, 181 leaves):

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

Problem 222: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 129 leaves, 6 steps):

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

Result (type 3, 209 leaves):

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

Problem 223: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 211 leaves, 7 steps):

$$\frac{2 d^2 (3 c+2 d)\,\text{ArcTanh}\left[\frac{\sqrt{c-d}\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c+d}}\right]}{a^2 (c-d)^{7/2} (c+d)^{3/2} f}+\frac{d \left(c^2-6 c d-10 d^2\right)\text{Tan}[e+f x]}{3 a^2 (c-d)^3 (c+d) f (c+d\,\text{Sec}[e+f x])}+\frac{(c-6 d)\,\text{Tan}[e+f x]}{3 a^2 (c-d)^2 f (1+\text{Sec}[e+f x]) (c+d\,\text{Sec}[e+f x])}+\frac{\text{Tan}[e+f x]}{3 (c-d) f (a+a\,\text{Sec}[e+f x])^2 (c+d\,\text{Sec}[e+f x])}$$

Result (type 3, 764 leaves):

$$\Bigg(\left(3\,c+2\,d\right)\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\,\left(d+c\,\text{Cos}\left[e+f\,x\right]\right)^2$$

$$\text{Sec}\left[e+f\,x\right]^4\,\Bigg(\Bigg(8\,\mathrm{i}\,d^2\,\text{ArcTan}\Bigg[\text{Sec}\left[\frac{f\,x}{2}\right]\,\Bigg(\frac{\text{Cos}\left[e\right]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}}-$$

$$\frac{\mathrm{i}\,\text{Sin}\left[e\right]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}}\Bigg)\,\left(-\mathrm{i}\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+\mathrm{i}\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)\Bigg]\,\text{Cos}\left[e\right]\Bigg)\Big/$$

$$\left(\sqrt{c^2-d^2}\,f\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}\right)+\Bigg(8\,d^2\,\text{ArcTan}\Bigg[\text{Sec}\left[\frac{f\,x}{2}\right]$$

$$\left(\frac{\text{Cos}\left[e\right]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}}-\frac{\mathrm{i}\,\text{Sin}\left[e\right]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}}\right)$$

$$\left(-\mathrm{i}\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+\mathrm{i}\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)\Bigg]$$

$$\text{Sin}\left[e\right]\Bigg)\Big/\left(\sqrt{c^2-d^2}\,f\,\sqrt{\text{Cos}\left[2\,e\right]-\mathrm{i}\,\text{Sin}\left[2\,e\right]}\right)\Bigg)\Bigg)\Bigg)\Big/$$

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

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

$$\Bigg(8$$

$$\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^3$$

$$\left(d+c\,\text{Cos}\left[e+f\,x\right]\right)^2\,\text{Sec}\left[\frac{e}{2}\right]$$

$$\text{Sec}\left[e+f\,x\right]^4\,\left(-c\,\text{Sin}\left[\frac{f\,x}{2}\right]+4\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]\right)\Bigg)\Big/$$

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

$$\Bigg(4\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\,\left(d+c\,\text{Cos}\left[e+f\,x\right]\right)\,\text{Sec}\left[e+f\,x\right]^4$$

$$\left(d^4\,\text{Sin}\left[e\right]-c\,d^3\,\text{Sin}\left[f\,x\right]\right)\Bigg)\Big/$$

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

$$\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\,\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\Bigg)-$$

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

Problem 224: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 284 leaves, 8 steps):

$$\frac{d^2\left(12c^2+16cd+7d^2\right)\text{ArcTanh}\left[\frac{\sqrt{c-d}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{c+d}}\right]}{a^2(c-d)^{9/2}(c+d)^{5/2}f}+\frac{d\left(2c^2-16cd-21d^2\right)\text{Tan}[e+fx]}{6a^2(c-d)^3(c+d)f(c+d\,\text{Sec}[e+fx])^2}+\frac{(c-8d)\text{Tan}[e+fx]}{3a^2(c-d)^2f(1+\text{Sec}[e+fx])(c+d\,\text{Sec}[e+fx])^2}+\frac{\text{Tan}[e+fx]}{3(c-d)f(a+a\,\text{Sec}[e+fx])^2(c+d\,\text{Sec}[e+fx])^2}+\frac{d\left(2c^3-16c^2d-59cd^2-32d^3\right)\text{Tan}[e+fx]}{6a^2(c-d)^4(c+d)^2f(c+d\,\text{Sec}[e+fx])}$$

Result (type 3, 2220 leaves):

$$\left(\left(12c^2+16cd+7d^2\right)\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right]^4(d+c\,\text{Cos}[e+fx])^3\right.$$
$$\text{Sec}[e+fx]^5\left(-\left(\left(4\,i\,d^2\,\text{ArcTan}\left[\text{Sec}\left[\frac{fx}{2}\right]\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}-\right.\right.\right.\right.\right.$$
$$\left.\left.\left.\frac{i\,\text{Sin}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}\right)\left(-i\,d\,\text{Sin}\left[\frac{fx}{2}\right]+i\,c\,\text{Sin}\left[e+\frac{fx}{2}\right]\right)\right]\text{Cos}[e]\right)\Big/$$
$$\left(\sqrt{c^2-d^2}\,f\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}\right)\right)-\left(4\,d^2\,\text{ArcTan}\left[\text{Sec}\left[\frac{fx}{2}\right]\right.\right.$$
$$\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}-\frac{i\,\text{Sin}[e]}{\sqrt{c^2-d^2}\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}}\right)$$
$$\left.\left.\left(-i\,d\,\text{Sin}\left[\frac{fx}{2}\right]+i\,c\,\text{Sin}\left[e+\frac{fx}{2}\right]\right)\right]\text{Sin}[e]\right)\Big/$$
$$\left.\left.\left(\sqrt{c^2-d^2}\,f\sqrt{\text{Cos}[2e]-i\,\text{Sin}[2e]}\right)\right)\right)\Big/$$
$$\left((-c+d)^4(c+d)^2(a+a\,\text{Sec}[e+fx])^2(c+d\,\text{Sec}[e+fx])^3\right)+$$
$$\frac{1}{48c^2(-c+d)^4(c+d)^2f(a+a\,\text{Sec}[e+fx])^2(c+d\,\text{Sec}[e+fx])^3}$$
$$\text{Cos}\left[\frac{e}{2}+\frac{fx}{2}\right](d+c\,\text{Cos}[e+fx])\,\text{Sec}\left[\frac{e}{2}\right]$$
$$\text{Sec}[e]$$
$$\text{Sec}[e+fx]^5$$
$$\left(-16c^7\,\text{Sin}\left[\frac{fx}{2}\right]+14c^6d\,\text{Sin}\left[\frac{fx}{2}\right]+220c^5d^2\,\text{Sin}\left[\frac{fx}{2}\right]+334c^4d^3\,\text{Sin}\left[\frac{fx}{2}\right]+\right.$$
$$54c^3d^4\,\text{Sin}\left[\frac{fx}{2}\right]-156c^2d^5\,\text{Sin}\left[\frac{fx}{2}\right]-48cd^6\,\text{Sin}\left[\frac{fx}{2}\right]+18d^7\,\text{Sin}\left[\frac{fx}{2}\right]+$$
$$14c^7\,\text{Sin}\left[\frac{3fx}{2}\right]-16c^6d\,\text{Sin}\left[\frac{3fx}{2}\right]-226c^5d^2\,\text{Sin}\left[\frac{3fx}{2}\right]-$$
$$532c^4d^3\,\text{Sin}\left[\frac{3fx}{2}\right]-583c^3d^4\,\text{Sin}\left[\frac{3fx}{2}\right]-232c^2d^5\,\text{Sin}\left[\frac{3fx}{2}\right]-$$

$$6\,c\,d^6\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]+6\,d^7\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]-12\,c^7\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+20\,c^6\,d\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+$$
$$236\,c^5\,d^2\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+628\,c^4\,d^3\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+778\,c^3\,d^4\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+$$
$$420\,c^2\,d^5\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+48\,c\,d^6\,\text{Sin}\left[e-\frac{f\,x}{2}\right]-18\,d^7\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+$$
$$12\,c^7\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-20\,c^6\,d\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-236\,c^5\,d^2\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-$$
$$460\,c^4\,d^3\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-310\,c^3\,d^4\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+39\,c^2\,d^5\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+$$
$$48\,c\,d^6\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-18\,d^7\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-16\,c^7\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+14\,c^6\,d\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+$$
$$220\,c^5\,d^2\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+502\,c^4\,d^3\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+522\,c^3\,d^4\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+$$
$$303\,c^2\,d^5\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+48\,c\,d^6\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-18\,d^7\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-$$
$$6\,c^7\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+6\,c^6\,d\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+126\,c^5\,d^2\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+$$
$$114\,c^4\,d^3\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-159\,c^3\,d^4\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-144\,c^2\,d^5\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-$$
$$6\,c\,d^6\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+6\,d^7\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+14\,c^7\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-16\,c^6\,d\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-$$
$$226\,c^5\,d^2\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-412\,c^4\,d^3\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-235\,c^3\,d^4\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-$$
$$7\,c^2\,d^5\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+6\,c\,d^6\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-6\,d^7\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-$$
$$6\,c^7\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+6\,c^6\,d\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+126\,c^5\,d^2\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+$$
$$234\,c^4\,d^3\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+189\,c^3\,d^4\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+81\,c^2\,d^5\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+$$
$$6\,c\,d^6\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]-6\,d^7\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+6\,c^7\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-14\,c^6\,d\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-$$
$$134\,c^5\,d^2\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-274\,c^4\,d^3\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-193\,c^3\,d^4\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-$$
$$27\,c^2\,d^5\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]+6\,c\,d^6\,\text{Sin}\left[e+\frac{5\,f\,x}{2}\right]-6\,c^7\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]+$$
$$12\,c^6\,d\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]+42\,c^5\,d^2\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]-48\,c^4\,d^3\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]-$$
$$105\,c^3\,d^4\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]-27\,c^2\,d^5\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]+6\,c\,d^6\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]+$$
$$6\,c^7\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-14\,c^6\,d\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-134\,c^5\,d^2\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-$$
$$202\,c^4\,d^3\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-61\,c^3\,d^4\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]+12\,c^2\,d^5\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-$$
$$6\,c\,d^6\,\text{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]-6\,c^7\,\text{Sin}\left[4\,e+\frac{5\,f\,x}{2}\right]+12\,c^6\,d\,\text{Sin}\left[4\,e+\frac{5\,f\,x}{2}\right]+$$

$$42 c^5 d^2 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+24 c^4 d^3 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+27 c^3 d^4 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+ 12 c^2 d^5 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-6 c d^6 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+4 c^7 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]- 14 c^6 d \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-40 c^5 d^2 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-46 c^4 d^3 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]- 12 c^3 d^4 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+3 c^2 d^5 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-24 c^4 d^3 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]- 12 c^3 d^4 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]+3 c^2 d^5 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]+4 c^7 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]- 14 c^6 d \text{Sin}\left[4 e+\frac{7 f x}{2}\right]-40 c^5 d^2 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]-22 c^4 d^3 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]\Big)\Big)$$

Problem 225: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 363 leaves, 9 steps):

$$\frac{d^3 \left(40 c^3-90 c^2 d+78 c d^2-23 d^3\right) \text{ArcTanh}[\text{Sin}[e+f x]]}{2 a^3 f}-\frac{1}{15 a^3 f} 2 d \left(2 c^5+18 c^4 d+107 c^3 d^2-472 c^2 d^3+456 c d^4-136 d^5\right) \text{Tan}[e+f x]-\frac{1}{30 a^3 f} d^2 \left(4 c^4+36 c^3 d+216 c^2 d^2-626 c d^3+345 d^4\right) \text{Sec}[e+f x] \text{Tan}[e+f x]-\frac{d \left(2 c^3+18 c^2 d+111 c d^2-136 d^3\right) (c+d \text{Sec}[e+f x])^2 \text{Tan}[e+f x]}{15 a^3 f}+\frac{(c-d) \left(2 c^2+18 c d+115 d^2\right) (c+d \text{Sec}[e+f x])^3 \text{Tan}[e+f x]}{15 f \left(a^3+a^3 \text{Sec}[e+f x]\right)}+\frac{(c-d) (2 c+13 d) (c+d \text{Sec}[e+f x])^4 \text{Tan}[e+f x]}{15 a f (a+a \text{Sec}[e+f x])^2}+\frac{(c-d) (c+d \text{Sec}[e+f x])^5 \text{Tan}[e+f x]}{5 f (a+a \text{Sec}[e+f x])^3}$$

Result (type 3, 1338 leaves):

$$\left(4 \left(-40 c^3 d^3+90 c^2 d^4-78 c d^5+23 d^6\right) \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]-\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c+d \text{Sec}[e+f x])^6\right) \Big/ \left(f (d+c \text{Cos}[e+f x])^6 (a+a \text{Sec}[e+f x])^3\right)-\left(4 \left(-40 c^3 d^3+90 c^2 d^4-78 c d^5+23 d^6\right) \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^6 \text{Cos}[e+f x]^3 \text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right] (c+d \text{Sec}[e+f x])^6\right) \Big/ \left(f (d+c \text{Cos}[e+f x])^6 (a+a \text{Sec}[e+f x])^3\right)+\left(2 \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Cos}[e+f x]^3 \text{Sec}\left[\frac{e}{2}\right] (c+d \text{Sec}[e+f x])^6 \left(c^6 \text{Sin}\left[\frac{e}{2}\right]-6 c^5 d \text{Sin}\left[\frac{e}{2}\right]+15 c^4 d^2 \text{Sin}\left[\frac{e}{2}\right]-20 c^3 d^3 \text{Sin}\left[\frac{e}{2}\right]+15 c^2 d^4 \text{Sin}\left[\frac{e}{2}\right]-6 c d^5 \text{Sin}\left[\frac{e}{2}\right]+d^6 \text{Sin}\left[\frac{e}{2}\right]\right)\right) \Big/$$

$$\left(5\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\left(8\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^4 \text{Cos}[e + f\, x]^3\, \text{Sec}\left[\frac{e}{2}\right]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(-4\, c^6\, \text{Sin}\left[\frac{e}{2}\right] + 9\, c^5\, d\, \text{Sin}\left[\frac{e}{2}\right] + 15\, c^4\, d^2\, \text{Sin}\left[\frac{e}{2}\right] - 70\, c^3\, d^3\, \text{Sin}\left[\frac{e}{2}\right] + 90\, c^2\, d^4\, \text{Sin}\left[\frac{e}{2}\right] - 51\, c\, d^5\, \text{Sin}\left[\frac{e}{2}\right] + 11\, d^6\, \text{Sin}\left[\frac{e}{2}\right]\right)\right) \Big/$$
$$\left(15\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\left(2\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right] \text{Cos}[e + f\, x]^3\, \text{Sec}\left[\frac{e}{2}\right]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(c^6\, \text{Sin}\left[\frac{f\, x}{2}\right] - 6\, c^5\, d\, \text{Sin}\left[\frac{f\, x}{2}\right] + 15\, c^4\, d^2\, \text{Sin}\left[\frac{f\, x}{2}\right] - 20\, c^3\, d^3\, \text{Sin}\left[\frac{f\, x}{2}\right] + 15\, c^2\, d^4\, \text{Sin}\left[\frac{f\, x}{2}\right] - 6\, c\, d^5\, \text{Sin}\left[\frac{f\, x}{2}\right] + d^6\, \text{Sin}\left[\frac{f\, x}{2}\right]\right)\right) \Big/$$
$$\left(5\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\left(8\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^3 \text{Cos}[e + f\, x]^3\, \text{Sec}\left[\frac{e}{2}\right]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(-4\, c^6\, \text{Sin}\left[\frac{f\, x}{2}\right] + 9\, c^5\, d\, \text{Sin}\left[\frac{f\, x}{2}\right] + 15\, c^4\, d^2\, \text{Sin}\left[\frac{f\, x}{2}\right] - 70\, c^3\, d^3\, \text{Sin}\left[\frac{f\, x}{2}\right] + 90\, c^2\, d^4\, \text{Sin}\left[\frac{f\, x}{2}\right] - 51\, c\, d^5\, \text{Sin}\left[\frac{f\, x}{2}\right] + 11\, d^6\, \text{Sin}\left[\frac{f\, x}{2}\right]\right)\right) \Big/ \left(15\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\left(8\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^5 \text{Cos}[e + f\, x]^3\, \text{Sec}\left[\frac{e}{2}\right]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(7\, c^6\, \text{Sin}\left[\frac{f\, x}{2}\right] + 18\, c^5\, d\, \text{Sin}\left[\frac{f\, x}{2}\right] + 30\, c^4\, d^2\, \text{Sin}\left[\frac{f\, x}{2}\right] - 440\, c^3\, d^3\, \text{Sin}\left[\frac{f\, x}{2}\right] + 855\, c^2\, d^4\, \text{Sin}\left[\frac{f\, x}{2}\right] - 642\, c\, d^5\, \text{Sin}\left[\frac{f\, x}{2}\right] + 172\, d^6\, \text{Sin}\left[\frac{f\, x}{2}\right]\right)\right) \Big/ \left(15\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\frac{8\, d^6\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^6 \text{Sec}[e]\, (c + d\, \text{Sec}[e + f\, x])^6\, \text{Sin}[f\, x]}{3\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3} -$$
$$\left(4\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^6 \text{Cos}[e + f\, x]^2\, \text{Sec}[e]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(-18\, c\, d^5\, \text{Sin}[e] + 9\, d^6\, \text{Sin}[e] - 90\, c^2\, d^4\, \text{Sin}[f\, x] + 108\, c\, d^5\, \text{Sin}[f\, x] - 40\, d^6\, \text{Sin}[f\, x]\right)\right) \Big/$$
$$\left(3\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right) +$$
$$\left(4\, \text{Cos}\left[\frac{e}{2} + \frac{f\, x}{2}\right]^6 \text{Cos}[e + f\, x]\, \text{Sec}[e]\, (c + d\, \text{Sec}[e + f\, x])^6\, \left(2\, d^6\, \text{Sin}[e] + 18\, c\, d^5\, \text{Sin}[f\, x] - 9\, d^6\, \text{Sin}[f\, x]\right)\right) \Big/ \left(3\, f\, (d + c\, \text{Cos}[e + f\, x])^6\, (a + a\, \text{Sec}[e + f\, x])^3\right)$$

Problem 228: Result more than twice size of optimal antiderivative.

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

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

$$\frac{d^3 \text{ArcTanh}[\text{Sin}[e+f x]]}{a^3 f}+\frac{(c-d)\,(c+d\,\text{Sec}[e+f x])^2\,\text{Tan}[e+f x]}{5 f\,(a+a\,\text{Sec}[e+f x])^3}+ \left((c-d)\,\left(2\,\left(2 c^2+8 c d+11 d^2\right)+\left(2 c^2+11 c d+29 d^2\right)\text{Sec}[e+f x]\right)\text{Tan}[e+f x]\right)\Big/\left(15 a f\,(a+a\,\text{Sec}[e+f x])^2\right)$$

Result (type 3, 295 leaves):

$$\frac{1}{30 a^3 f\,(1+\text{Cos}[e+f x])^3}\left(-240 d^3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]^6 \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)+ (c-d)\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]\text{Sec}\left[\frac{e}{2}\right] \left(5\left(8 c^2+17 c d+29 d^2\right)\text{Sin}\left[\frac{f x}{2}\right]-15\left(2 c^2+5 c d+5 d^2\right)\text{Sin}\left[e+\frac{f x}{2}\right]+20 c^2\,\text{Sin}\left[e+\frac{3 f x}{2}\right]+ 65 c d\,\text{Sin}\left[e+\frac{3 f x}{2}\right]+95 d^2\,\text{Sin}\left[e+\frac{3 f x}{2}\right]-15 c^2\,\text{Sin}\left[2 e+\frac{3 f x}{2}\right]-15 c d\,\text{Sin}\left[2 e+\frac{3 f x}{2}\right]- 15 d^2\,\text{Sin}\left[2 e+\frac{3 f x}{2}\right]+7 c^2\,\text{Sin}\left[2 e+\frac{5 f x}{2}\right]+16 c d\,\text{Sin}\left[2 e+\frac{5 f x}{2}\right]+22 d^2\,\text{Sin}\left[2 e+\frac{5 f x}{2}\right]\right)\right)$$

Problem 231: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 181 leaves, 7 steps):

$$-\frac{2 d^3\,\text{ArcTanh}\left[\frac{\sqrt{c-d}\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c+d}}\right]}{a^3\,(c-d)^{7/2}\sqrt{c+d}\,f}+\frac{\text{Tan}[e+f x]}{5\,(c-d)\,f\,(a+a\,\text{Sec}[e+f x])^3}+ \frac{(2 c-7 d)\,\text{Tan}[e+f x]}{15 a\,(c-d)^2 f\,(a+a\,\text{Sec}[e+f x])^2}+\frac{\left(2 c^2-9 c d+22 d^2\right)\text{Tan}[e+f x]}{15\,(c-d)^3 f\,\left(a^3+a^3\,\text{Sec}[e+f x]\right)}$$

Result (type 3, 345 leaves):

$$\frac{1}{30\,a^3\,(c-d)^3\,f\,(1+\text{Cos}[e+f\,x])^3}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\left(\left(480\,d^3\,\text{ArcTan}\left[\frac{(\mathrm{i}\,\text{Cos}[e]+\text{Sin}[e])\,\left(c\,\text{Sin}[e]+(-d+c\,\text{Cos}[e])\,\text{Tan}\left[\frac{f\,x}{2}\right]\right)}{\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}}\right]\right.\right.$$
$$\left.\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]^5\,(\mathrm{i}\,\text{Cos}[e]+\text{Sin}[e])\right)\Big/\left(\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\right)+\text{Sec}\left[\frac{e}{2}\right]$$
$$\left(5\,(8\,c^2-27\,c\,d+37\,d^2)\,\text{Sin}\left[\frac{f\,x}{2}\right]-15\,(2\,c^2-7\,c\,d+9\,d^2)\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+20\,c^2\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-\right.$$
$$75\,c\,d\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+115\,d^2\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-15\,c^2\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+45\,c\,d\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-$$
$$\left.\left.45\,d^2\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+7\,c^2\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]-24\,c\,d\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]+32\,d^2\,\text{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]\right)\right)$$

Problem 232: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 288 leaves, 8 steps):

$$-\frac{2\,d^3\,(4\,c+3\,d)\,\text{ArcTanh}\left[\frac{\sqrt{c-d}\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{c+d}}\right]}{a^3\,(c-d)^{9/2}\,(c+d)^{3/2}\,f}+\frac{d\,(2\,c^3-12\,c^2\,d+43\,c\,d^2+72\,d^3)\,\text{Tan}[e+f\,x]}{15\,a^3\,(c-d)^4\,(c+d)\,f\,(c+d\,\text{Sec}[e+f\,x])}+$$
$$\frac{\text{Tan}[e+f\,x]}{5\,(c-d)\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])}+$$
$$\frac{(2\,c-9\,d)\,\text{Tan}[e+f\,x]}{15\,a\,(c-d)^2\,f\,(a+a\,\text{Sec}[e+f\,x])^2\,(c+d\,\text{Sec}[e+f\,x])}+$$
$$\frac{(2\,c^2-12\,c\,d+45\,d^2)\,\text{Tan}[e+f\,x]}{15\,(c-d)^3\,f\,(a^3+a^3\,\text{Sec}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])}$$

Result (type 3, 1772 leaves):

$$\left((4\,c+3\,d)\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(d+c\,\text{Cos}[e+f\,x])^2\right.$$
$$\text{Sec}[e+f\,x]^5\left(\left(16\,\mathrm{i}\,d^3\,\text{ArcTan}\left[\text{Sec}\left[\frac{f\,x}{2}\right]\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}-\right.\right.\right.\right.$$
$$\left.\left.\frac{\mathrm{i}\,\text{Sin}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}\right)\left(-\mathrm{i}\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+\mathrm{i}\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)\right]\text{Cos}[e]\right)\Big/$$
$$\left(\sqrt{c^2-d^2}\,f\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}\right)+\left(16\,d^3\,\text{ArcTan}\left[\text{Sec}\left[\frac{f\,x}{2}\right]\right.\right.$$

$$\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\ \sqrt{\text{Cos}[2\,e]-i\,\text{Sin}[2\,e]}}-\frac{i\,\text{Sin}[e]}{\sqrt{c^2-d^2}\ \sqrt{\text{Cos}[2\,e]-i\,\text{Sin}[2\,e]}}\right)$$

$$\left(-i\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+i\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)\Big]$$

$$\text{Sin}[e]\Bigg)\Bigg/\left(\sqrt{c^2-d^2}\ f\,\sqrt{\text{Cos}[2\,e]-i\,\text{Sin}[2\,e]}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-c+d\right)^4\left(c+d\right)\left(a+a\,\text{Sec}[e+f\,x]\right)^3\left(c+d\,\text{Sec}[e+f\,x]\right)^2\right)+$$

$$\frac{1}{120\,c\left(-c+d\right)^4\left(c+d\right)f\left(a+a\,\text{Sec}[e+f\,x]\right)^3\left(c+d\,\text{Sec}[e+f\,x]\right)^2}$$

$$\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]$$

$$\left(d+c\,\text{Cos}[e+f\,x]\right)\text{Sec}\left[\frac{e}{2}\right]\text{Sec}[e]$$

$$\text{Sec}[e+f\,x]^5$$

$$\Bigg(-55\,c^5\,\text{Sin}\left[\frac{f\,x}{2}\right]+135\,c^4\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]-20\,c^3\,d^2\,\text{Sin}\left[\frac{f\,x}{2}\right]-810\,c^2\,d^3\,\text{Sin}\left[\frac{f\,x}{2}\right]-$$

$$450\,c\,d^4\,\text{Sin}\left[\frac{f\,x}{2}\right]+150\,d^5\,\text{Sin}\left[\frac{f\,x}{2}\right]+47\,c^5\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]-137\,c^4\,d\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]+$$

$$88\,c^3\,d^2\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]+812\,c^2\,d^3\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]+690\,c\,d^4\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]+$$

$$75\,d^5\,\text{Sin}\left[\frac{3\,f\,x}{2}\right]-50\,c^5\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+130\,c^4\,d\,\text{Sin}\left[e-\frac{f\,x}{2}\right]-10\,c^3\,d^2\,\text{Sin}\left[e-\frac{f\,x}{2}\right]-$$

$$1030\,c^2\,d^3\,\text{Sin}\left[e-\frac{f\,x}{2}\right]-990\,c\,d^4\,\text{Sin}\left[e-\frac{f\,x}{2}\right]-150\,d^5\,\text{Sin}\left[e-\frac{f\,x}{2}\right]+$$

$$50\,c^5\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-130\,c^4\,d\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+10\,c^3\,d^2\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+$$

$$1030\,c^2\,d^3\,\text{Sin}\left[e+\frac{f\,x}{2}\right]+765\,c\,d^4\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-150\,d^5\,\text{Sin}\left[e+\frac{f\,x}{2}\right]-$$

$$55\,c^5\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]+135\,c^4\,d\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-20\,c^3\,d^2\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-$$

$$810\,c^2\,d^3\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-675\,c\,d^4\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-150\,d^5\,\text{Sin}\left[2\,e+\frac{f\,x}{2}\right]-$$

$$30\,c^5\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+90\,c^4\,d\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-60\,c^3\,d^2\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-$$

$$360\,c^2\,d^3\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]-30\,c\,d^4\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+75\,d^5\,\text{Sin}\left[e+\frac{3\,f\,x}{2}\right]+$$

$$47\,c^5\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-137\,c^4\,d\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+88\,c^3\,d^2\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+$$

$$812\,c^2\,d^3\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]+525\,c\,d^4\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-75\,d^5\,\text{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-$$

$$30\,c^5\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+90\,c^4\,d\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]-60\,c^3\,d^2\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]-$$

$$360\,c^2\,d^3\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]-195\,c\,d^4\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]-75\,d^5\,\text{Sin}\left[3\,e+\frac{3\,f\,x}{2}\right]+$$

$$20 c^5 \text{Sin}\left[e+\frac{5 f x}{2}\right]-76 c^4 d \text{Sin}\left[e+\frac{5 f x}{2}\right]+106 c^3 d^2 \text{Sin}\left[e+\frac{5 f x}{2}\right]+$$
$$346 c^2 d^3 \text{Sin}\left[e+\frac{5 f x}{2}\right]+219 c d^4 \text{Sin}\left[e+\frac{5 f x}{2}\right]+15 d^5 \text{Sin}\left[e+\frac{5 f x}{2}\right]-$$
$$15 c^5 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+45 c^4 d \text{Sin}\left[2 e+\frac{5 f x}{2}\right]-30 c^3 d^2 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]-$$
$$90 c^2 d^3 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+75 c d^4 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+15 d^5 \text{Sin}\left[2 e+\frac{5 f x}{2}\right]+$$
$$20 c^5 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-76 c^4 d \text{Sin}\left[3 e+\frac{5 f x}{2}\right]+106 c^3 d^2 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]+$$
$$346 c^2 d^3 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]+144 c d^4 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-15 d^5 \text{Sin}\left[3 e+\frac{5 f x}{2}\right]-$$
$$15 c^5 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+45 c^4 d \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-30 c^3 d^2 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-$$
$$90 c^2 d^3 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]-15 d^5 \text{Sin}\left[4 e+\frac{5 f x}{2}\right]+7 c^5 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]-$$
$$27 c^4 d \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+38 c^3 d^2 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+72 c^2 d^3 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+$$
$$15 c d^4 \text{Sin}\left[2 e+\frac{7 f x}{2}\right]+15 c d^4 \text{Sin}\left[3 e+\frac{7 f x}{2}\right]+7 c^5 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]-$$
$$27 c^4 d \text{Sin}\left[4 e+\frac{7 f x}{2}\right]+38 c^3 d^2 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]+72 c^2 d^3 \text{Sin}\left[4 e+\frac{7 f x}{2}\right]\Bigg)\Bigg)$$

Problem 233: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 368 leaves, 9 steps):

$$-\frac{d^3 \left(20 c^2+30 c d+13 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{c-d} \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{c+d}}\right]}{a^3 (c-d)^{11/2} (c+d)^{5/2} f}+$$
$$\frac{d \left(4 c^3-30 c^2 d+146 c d^2+195 d^3\right) \text{Tan}[e+f x]}{30 a^3 (c-d)^4 (c+d) f (c+d \text{Sec}[e+f x])^2}+$$
$$\frac{\text{Tan}[e+f x]}{5 (c-d) f (a+a \text{Sec}[e+f x])^3 (c+d \text{Sec}[e+f x])^2}+$$
$$\frac{(2 c-11 d) \text{Tan}[e+f x]}{15 a (c-d)^2 f (a+a \text{Sec}[e+f x])^2 (c+d \text{Sec}[e+f x])^2}+$$
$$\frac{\left(2 c^2-15 c d+76 d^2\right) \text{Tan}[e+f x]}{15 (c-d)^3 f \left(a^3+a^3 \text{Sec}[e+f x]\right) (c+d \text{Sec}[e+f x])^2}+$$
$$\frac{d \left(4 c^4-30 c^3 d+142 c^2 d^2+525 c d^3+304 d^4\right) \text{Tan}[e+f x]}{30 a^3 (c-d)^5 (c+d)^2 f (c+d \text{Sec}[e+f x])}$$

Result (type 3, 1096 leaves) :

$$\left(4\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^4\,(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sec}[e+f\,x]^6\,\left(-8\,c\,\text{Sin}\left[\frac{e}{2}\right]+23\,d\,\text{Sin}\left[\frac{e}{2}\right]\right)\right)\Big/$$
$$\left(15\,(-c+d)^4\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)+$$
$$\Bigg(\left(20\,c^2+30\,c\,d+13\,d^2\right)\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}[e+f\,x]^6$$
$$\Bigg(-\Bigg(\Bigg(8\,\mathrm{i}\,d^3\,\text{ArcTan}\Big[\text{Sec}\left[\frac{f\,x}{2}\right]\,\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}-\right.$$
$$\left.\frac{\mathrm{i}\,\text{Sin}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}\right)\,\left(-\mathrm{i}\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+\mathrm{i}\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)\Big]\,\text{Cos}[e]\Bigg)\Big/$$
$$\left(\sqrt{c^2-d^2}\,f\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}\right)\Bigg)-\Bigg(8\,d^3\,\text{ArcTan}\Big[\text{Sec}\left[\frac{f\,x}{2}\right]$$
$$\left(\frac{\text{Cos}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}-\frac{\mathrm{i}\,\text{Sin}[e]}{\sqrt{c^2-d^2}\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}}\right)\,\Big(-\mathrm{i}\,d$$
$$\text{Sin}\left[\frac{f\,x}{2}\right]+\mathrm{i}\,c\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\Big)\Big]\,\text{Sin}[e]\Bigg)\Big/\left(\sqrt{c^2-d^2}\,f\,\sqrt{\text{Cos}[2\,e]-\mathrm{i}\,\text{Sin}[2\,e]}\right)\Bigg)\Bigg)\Big/$$
$$\left((-c+d)^5\,(c+d)^2\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)-$$
$$\frac{2\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\,(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sec}[e+f\,x]^6\,\text{Sin}\left[\frac{f\,x}{2}\right]}{5\,(-c+d)^3\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3}+$$
$$\Bigg(4\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^3$$
$$(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sec}[e+f\,x]^6$$
$$\left(-8\,c\,\text{Sin}\left[\frac{f\,x}{2}\right]+23\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]\right)\Bigg)\Big/$$
$$\left(15\,(-c+d)^4\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)-$$
$$\Bigg(8\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^5\,(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}\left[\frac{e}{2}\right]\,\text{Sec}[e+f\,x]^6$$
$$\left(7\,c^2\,\text{Sin}\left[\frac{f\,x}{2}\right]-44\,c\,d\,\text{Sin}\left[\frac{f\,x}{2}\right]+127\,d^2\,\text{Sin}\left[\frac{f\,x}{2}\right]\right)\Bigg)\Big/$$
$$\left(15\,(-c+d)^5\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)+$$
$$\left(4\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(d+c\,\text{Cos}[e+f\,x])\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^6\,\left(d^6\,\text{Sin}[e]-c\,d^5\,\text{Sin}[f\,x]\right)\right)\Big/$$
$$\left(c^2\,(-c+d)^4\,(c+d)\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)-$$
$$\Bigg(4\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^6\,(d+c\,\text{Cos}[e+f\,x])^2\,\text{Sec}[e]\,\text{Sec}[e+f\,x]^6\,\Big(-11\,c^2\,d^5\,\text{Sin}[e]-$$
$$6\,c\,d^6\,\text{Sin}[e]+2\,d^7\,\text{Sin}[e]+10\,c^3\,d^4\,\text{Sin}[f\,x]+6\,c^2\,d^5\,\text{Sin}[f\,x]-c\,d^6\,\text{Sin}[f\,x]\Big)\Bigg)\Big/$$
$$\left(c^2\,(-c+d)^5\,(c+d)^2\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3\right)-$$
$$\frac{2\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\,(d+c\,\text{Cos}[e+f\,x])^3\,\text{Sec}[e+f\,x]^6\,\text{Tan}\left[\frac{e}{2}\right]}{5\,(-c+d)^3\,f\,(a+a\,\text{Sec}[e+f\,x])^3\,(c+d\,\text{Sec}[e+f\,x])^3}$$

Problem 239: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 149 leaves, 5 steps):

$$\frac{2 \sqrt{a}\, g^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a} \sqrt{g} \operatorname{Tan}[e+f x]}{\sqrt{g \operatorname{Sec}[e+f x]} \sqrt{a+a \operatorname{Sec}[e+f x]}}\right]}{d f}-\frac{2 \sqrt{a} \sqrt{c}\, g^{3/2} \operatorname{ArcTanh}\left[\frac{\sqrt{a} \sqrt{c} \sqrt{g} \operatorname{Tan}[e+f x]}{\sqrt{c+d} \sqrt{g \operatorname{Sec}[e+f x]} \sqrt{a+a \operatorname{Sec}[e+f x]}}\right]}{d \sqrt{c+d}\, f}$$

Result (type 3, 427 leaves):

$$\frac{1}{4 \left(i+\sqrt{2}\right) d \sqrt{c+d}\, f \sqrt{g \operatorname{Sec}[e+f x]}} \left(-2 i+\sqrt{2}\right) g^2 \left(2 \sqrt{c+d} \operatorname{ArcTan}\left[\frac{\operatorname{Cos}\left[\frac{1}{4}(e+f x)\right]-\left(-1+\sqrt{2}\right) \operatorname{Sin}\left[\frac{1}{4}(e+f x)\right]}{\left(1+\sqrt{2}\right) \operatorname{Cos}\left[\frac{1}{4}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{4}(e+f x)\right]}\right]+\right.$$
$$2 \sqrt{c+d} \operatorname{ArcTan}\left[\frac{\operatorname{Cos}\left[\frac{1}{4}(e+f x)\right]-\left(1+\sqrt{2}\right) \operatorname{Sin}\left[\frac{1}{4}(e+f x)\right]}{\left(-1+\sqrt{2}\right) \operatorname{Cos}\left[\frac{1}{4}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{4}(e+f x)\right]}\right]+$$
$$i \left(2 \sqrt{c+d} \operatorname{Log}\left[\sqrt{2}+2 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-\right.$$
$$\sqrt{c+d} \operatorname{Log}\left[2-\sqrt{2} \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{2} \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-$$
$$\sqrt{c+d} \operatorname{Log}\left[2+\sqrt{2} \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{2} \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+2 \sqrt{c}$$
$$\operatorname{Log}\left[\sqrt{2} \sqrt{c+d}-2 \sqrt{c} \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]-$$
$$\left.\left.2 \sqrt{c} \operatorname{Log}\left[\sqrt{2} \sqrt{c+d}+2 \sqrt{c} \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]\right)\right) \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right] \sqrt{a (1+\operatorname{Sec}[e+f x])}$$

Problem 243: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 231 leaves, 8 steps):

$$\frac{2\,g^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{g}\,\text{Tan}[e+f\,x]}{\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{a+a\,\text{Sec}[e+f\,x]}}\right]}{\sqrt{a}\,d\,f}+\frac{\sqrt{2}\,g^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{g}\,\text{Tan}[e+f\,x]}{\sqrt{2}\,\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{a+a\,\text{Sec}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)\,f}-$$

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

Result (type 3, 1097 leaves) :

$$\frac{1}{2\left(\mathrm{i}+\sqrt{2}\right) d\left(-c+d\right)\sqrt{c+d}\, f\sqrt{a\left(1+\mathrm{Sec}[e+f x]\right)}}\, g^2 \mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]$$

$$\left(-2\left(-2\,\mathrm{i}+\sqrt{2}\right)\left(c-d\right)\sqrt{c+d}\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]}\right]-\right.$$

$$2\left(-2\,\mathrm{i}+\sqrt{2}\right)\left(c-d\right)\sqrt{c+d}\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]}\right]+$$

$$4\,\mathrm{i}\, d\sqrt{c+d}\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]-\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]\right]+$$

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

$$4\,\mathrm{i}\, d\sqrt{c+d}\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{4}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{4}\left(e+f x\right)\right]\right]-$$

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

$$4\, c\sqrt{c+d}\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-2\,\mathrm{i}\sqrt{2}\, c\sqrt{c+d}\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+$$

$$4\, d\sqrt{c+d}\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+2\,\mathrm{i}\sqrt{2}\, d\sqrt{c+d}\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+$$

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

$$\mathrm{i}\sqrt{2}\, c\sqrt{c+d}\,\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-$$

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

$$\mathrm{i}\sqrt{2}\, d\sqrt{c+d}\,\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+$$

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

$$\mathrm{i}\sqrt{2}\, c\sqrt{c+d}\,\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-$$

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

$$\mathrm{i}\sqrt{2}\, d\sqrt{c+d}\,\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\sqrt{2}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-$$

$$4\, c^{3/2}\,\mathrm{Log}\left[\sqrt{2}\sqrt{c+d}-2\sqrt{c}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-2\,\mathrm{i}\sqrt{2}\, c^{3/2}$$

$$\mathrm{Log}\left[\sqrt{2}\sqrt{c+d}-2\sqrt{c}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+4\, c^{3/2}\,\mathrm{Log}\left[\sqrt{2}\sqrt{c+d}+2\sqrt{c}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]+$$

$$\left.2\,\mathrm{i}\sqrt{2}\, c^{3/2}\,\mathrm{Log}\left[\sqrt{2}\sqrt{c+d}+2\sqrt{c}\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right]\right)\sqrt{g\,\mathrm{Sec}[e+f x]}$$

Problem 245: Result more than twice size of optimal antiderivative.

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

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

$$\frac{\left(8 a c^3+12 b c^2 d+12 a c d^2+3 b d^3\right) \text{ArcTanh}[\text{Sin}[e+f x]]}{8 f}+\frac{\left(4 a d \left(4 c^2+d^2\right)+3 b \left(c^3+4 c d^2\right)\right) \text{Tan}[e+f x]}{6 f}+\frac{d \left(6 b c^2+20 a c d+9 b d^2\right) \text{Sec}[e+f x] \text{Tan}[e+f x]}{24 f}+\frac{(3 b c+4 a d) (c+d \,\text{Sec}[e+f x])^2 \text{Tan}[e+f x]}{12 f}+\frac{b (c+d \,\text{Sec}[e+f x])^3 \text{Tan}[e+f x]}{4 f}$$

Result (type 3, 1179 leaves):

$$\left(\left(-8 a c^3-12 b c^2 d-12 a c d^2-3 b d^3\right) \text{Cos}[e+f x]^4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right] (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(8 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3\right)+$$
$$\left(\left(8 a c^3+12 b c^2 d+12 a c d^2+3 b d^3\right) \text{Cos}[e+f x]^4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right] (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(8 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3\right)+$$
$$\left(b d^3 \text{Cos}[e+f x]^4 (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(16 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4\right)+$$
$$\left(\left(36 b c^2 d+36 a c d^2+12 b c d^2+4 a d^3+9 b d^3\right) \text{Cos}[e+f x]^4 (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(48 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right)-$$
$$\left(b d^3 \text{Cos}[e+f x]^4 (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(16 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4\right)+$$
$$\left(\left(-36 b c^2 d-36 a c d^2-12 b c d^2-4 a d^3-9 b d^3\right) \text{Cos}[e+f x]^4 (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3\right) \Big/ \left(48 f (b+a \,\text{Cos}[e+f x]) (d+c \,\text{Cos}[e+f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right)+$$
$$\left(\text{Cos}[e+f x]^4 (a+b \,\text{Sec}[e+f x]) (c+d \,\text{Sec}[e+f x])^3 \left(3 b c d^2 \text{Sin}\left[\frac{1}{2} (e+f x)\right]+a d^3 \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right) \Big/$$

$$\left(6 f (b + a \text{Cos}[e + f x]) (d + c \text{Cos}[e + f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e + f x)\right] - \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^3\right) + \left(\text{Cos}[e + f x]^4 (a + b \text{Sec}[e + f x]) (c + d \text{Sec}[e + f x])^3 \left(3 b c d^2 \text{Sin}\left[\frac{1}{2} (e + f x)\right] + a d^3 \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)\right) \Big/ \left(6 f (b + a \text{Cos}[e + f x]) (d + c \text{Cos}[e + f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e + f x)\right] + \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^3\right) + \left(\text{Cos}[e + f x]^4 (a + b \text{Sec}[e + f x]) (c + d \text{Sec}[e + f x])^3 \left(3 b c^3 \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 9 a c^2 d \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 6 b c d^2 \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 2 a d^3 \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)\right) \Big/ \left(3 f (b + a \text{Cos}[e + f x]) (d + c \text{Cos}[e + f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e + f x)\right] - \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)\right) + \left(\text{Cos}[e + f x]^4 (a + b \text{Sec}[e + f x]) (c + d \text{Sec}[e + f x])^3 \left(3 b c^3 \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 9 a c^2 d \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 6 b c d^2 \text{Sin}\left[\frac{1}{2} (e + f x)\right] + 2 a d^3 \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)\right) \Big/ \left(3 f (b + a \text{Cos}[e + f x]) (d + c \text{Cos}[e + f x])^3 \left(\text{Cos}\left[\frac{1}{2} (e + f x)\right] + \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)\right)$$

Problem 246: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 115 leaves, 6 steps):

$$\frac{\left(2 b c d + a \left(2 c^2 + d^2\right)\right) \text{ArcTanh}[\text{Sin}[e + f x]]}{2 f} + \frac{2 \left(3 a c d + b \left(c^2 + d^2\right)\right) \text{Tan}[e + f x]}{3 f} + \frac{d (2 b c + 3 a d) \text{Sec}[e + f x] \text{Tan}[e + f x]}{6 f} + \frac{b (c + d \text{Sec}[e + f x])^2 \text{Tan}[e + f x]}{3 f}$$

Result (type 3, 239 leaves):

$$\frac{1}{6 f} \text{Sec}[e + f x]^3 \left(-\frac{9}{4} \left(2 b c d + a \left(2 c^2 + d^2\right)\right) \text{Cos}[e + f x] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e + f x)\right] - \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right] - \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e + f x)\right] + \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right]\right) - \frac{3}{4} \left(2 b c d + a \left(2 c^2 + d^2\right)\right) \text{Cos}[3 (e + f x)] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2} (e + f x)\right] - \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right] - \text{Log}\left[\text{Cos}\left[\frac{1}{2} (e + f x)\right] + \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right]\right) + \left(3 b c^2 + 6 a c d + 4 b d^2 + 3 d (2 b c + a d) \text{Cos}[e + f x] + \left(3 b c^2 + 6 a c d + 2 b d^2\right) \text{Cos}[2 (e + f x)]\right) \text{Sin}[e + f x]\right)$$

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

$$\int \text{Sec}[e+f x] (a+b\,\text{Sec}[e+f x]) (c+d\,\text{Sec}[e+f x]) \, dx$$

Optimal (type 3, 61 leaves, 5 steps):

$$\frac{(2 a c+b d)\,\text{ArcTanh}[\text{Sin}[e+f x]]}{2 f}+\frac{(b c+a d)\,\text{Tan}[e+f x]}{f}+\frac{b d\,\text{Sec}[e+f x]\,\text{Tan}[e+f x]}{2 f}$$

Result (type 3, 164 leaves):

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

Problem 252: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 247 leaves, 12 steps):

$$\frac{d^3 (4 b c-a d)\,\text{ArcTanh}[\text{Sin}[e+f x]]}{2 b^2 f}+\frac{d (2 b c-a d) \left(2 b^2 c^2-2 a b c d+a^2 d^2\right) \text{ArcTanh}[\text{Sin}[e+f x]]}{b^4 f}+\frac{2 (b c-a d)^4\,\text{ArcTanh}\left[\frac{\sqrt{a-b}\,\text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{a+b}}\right]}{\sqrt{a-b}\, b^4 \sqrt{a+b}\, f}+\frac{d^4\,\text{Tan}[e+f x]}{b f}+\frac{d^2 \left(6 b^2 c^2-4 a b c d+a^2 d^2\right) \text{Tan}[e+f x]}{b^3 f}+\frac{d^3 (4 b c-a d)\,\text{Sec}[e+f x]\,\text{Tan}[e+f x]}{2 b^2 f}+\frac{d^4\,\text{Tan}[e+f x]^3}{3 b f}$$

Result (type 3, 1150 leaves):

$$-\left(\left(2\,(b\,c-a\,d)^4\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{a^2-b^2}}\right]\,\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])\right.\right.$$

$$\left.\left.(c+d\,\text{Sec}[e+f\,x])^4\right)\Big/\left(b^4\,\sqrt{a^2-b^2}\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\right)\right)+$$

$$\left(\left(-8\,b^3\,c^3\,d+12\,a\,b^2\,c^2\,d^2-8\,a^2\,b\,c\,d^3-4\,b^3\,c\,d^3+2\,a^3\,d^4+a\,b^2\,d^4\right)\,\text{Cos}[e+f\,x]^3\right.$$

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

$$\left(2\,b^4\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\right)+$$

$$\left(\left(8\,b^3\,c^3\,d-12\,a\,b^2\,c^2\,d^2+8\,a^2\,b\,c\,d^3+4\,b^3\,c\,d^3-2\,a^3\,d^4-a\,b^2\,d^4\right)\,\text{Cos}[e+f\,x]^3\right.$$

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

$$\left(2\,b^4\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\right)+$$

$$\left(\left(12\,b\,c\,d^3-3\,a\,d^4+b\,d^4\right)\,\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])^4\right)\Big/$$

$$\left(12\,b^2\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)+$$

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

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

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

$$\left(6\,b\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3\right)+$$

$$\left(\left(-12\,b\,c\,d^3+3\,a\,d^4-b\,d^4\right)\,\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])^4\right)\Big/$$

$$\left(12\,b^2\,f\,(d+c\,\text{Cos}[e+f\,x])^4\,(a+b\,\text{Sec}[e+f\,x])\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)+$$

$$\left(\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])^4\,\left(18\,b^2\,c^2\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-\right.\right.$$

$$\left.\left.12\,a\,b\,c\,d^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+3\,a^2\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+2\,b^2\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\Big/$$

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

$$\left(\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])^4\,\left(18\,b^2\,c^2\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-\right.\right.$$

$$\left.\left.12\,a\,b\,c\,d^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+3\,a^2\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+2\,b^2\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\Big/$$

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

Problem 253: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 170 leaves, 10 steps):

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

Result (type 3, 389 leaves):

$$\frac{1}{4 b^3 f (d+c \text{Cos}[e+f x])^3 (a+b \text{Sec}[e+f x])}$$

$$\text{Cos}[e+f x]^2 (b+a \text{Cos}[e+f x]) (c+d \text{Sec}[e+f x])^3 \left(\frac{8 (-b c+a d)^3 \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}}-\right.$$

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

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

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

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

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

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

Optimal (type 3, 379 leaves, 16 steps):

$$\frac{d^4\left(5bc-2ad\right)\text{ArcTanh}[\text{Sin}[e+fx]]}{2b^3f}+\frac{d^2\left(10b^3c^3-20ab^2c^2d+15a^2bcd^2-4a^3d^3\right)\text{ArcTanh}[\text{Sin}[e+fx]]}{b^5f}+\frac{2\left(bc-ad\right)^5\text{ArcTanh}\left[\frac{\sqrt{a-b}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{a+b}}\right]}{a\left(a-b\right)^{3/2}b^3\left(a+b\right)^{3/2}f}+\frac{2\left(bc-ad\right)^4\left(bc+4ad\right)\text{ArcTanh}\left[\frac{\sqrt{a-b}\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{a+b}}\right]}{a\sqrt{a-b}\,b^5\sqrt{a+b}\,f}-\frac{\left(bc-ad\right)^5\text{Sin}[e+fx]}{b^4\left(a^2-b^2\right)f\left(b+a\,\text{Cos}[e+fx]\right)}+\frac{d^5\,\text{Tan}[e+fx]}{b^2f}+\frac{d^3\left(10b^2c^2-10abcd+3a^2d^2\right)\text{Tan}[e+fx]}{b^4f}+\frac{d^4\left(5bc-2ad\right)\text{Sec}[e+fx]\,\text{Tan}[e+fx]}{2b^3f}+\frac{d^5\,\text{Tan}[e+fx]^3}{3b^2f}$$

Result (type 3, 1137 leaves) :

$$-\left(\left(2\,(b\,c-a\,d)^4\,\left(-a\,b\,c-4\,a^2\,d+5\,b^2\,d\right)\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{a^2-b^2}}\right]\right.\right.$$

$$\left.\text{Cos}[e+f\,x]^3\,(b+a\,\text{Cos}[e+f\,x])^2\,(c+d\,\text{Sec}[e+f\,x])^5\right)\Big/$$

$$\left.\left(b^5\,\sqrt{a^2-b^2}\,\left(-a^2+b^2\right)\,f\,(d+c\,\text{Cos}[e+f\,x])^5\,(a+b\,\text{Sec}[e+f\,x])^2\right)\right)+$$

$$\left(\left(-20\,b^3\,c^3\,d^2+40\,a\,b^2\,c^2\,d^3-30\,a^2\,b\,c\,d^4-5\,b^3\,c\,d^4+8\,a^3\,d^5+2\,a\,b^2\,d^5\right)\,\text{Cos}[e+f\,x]^3\right.$$

$$\left.(b+a\,\text{Cos}[e+f\,x])^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]\,(c+d\,\text{Sec}[e+f\,x])^5\right)\Big/$$

$$\left(2\,b^5\,f\,(d+c\,\text{Cos}[e+f\,x])^5\,(a+b\,\text{Sec}[e+f\,x])^2\right)+$$

$$\left(\left(20\,b^3\,c^3\,d^2-40\,a\,b^2\,c^2\,d^3+30\,a^2\,b\,c\,d^4+5\,b^3\,c\,d^4-8\,a^3\,d^5-2\,a\,b^2\,d^5\right)\,\text{Cos}[e+f\,x]^3\right.$$

$$\left.(b+a\,\text{Cos}[e+f\,x])^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]\,(c+d\,\text{Sec}[e+f\,x])^5\right)\Big/$$

$$\left(2\,b^5\,f\,(d+c\,\text{Cos}[e+f\,x])^5\,(a+b\,\text{Sec}[e+f\,x])^2\right)+$$

$$\frac{1}{24\,b^4\,\left(-a^2+b^2\right)\,f\,(d+c\,\text{Cos}[e+f\,x])^5\,(a+b\,\text{Sec}[e+f\,x])^2}$$

$$(b+a\,\text{Cos}[e+f\,x])\,(c+d\,\text{Sec}[e+f\,x])^5$$

$$\left(-60\,a^2\,b^3\,c^2\,d^3\,\text{Sin}[e+f\,x]+60\,b^5\,c^2\,d^3\,\text{Sin}[e+f\,x]+45\,a^3\,b^2\,c\,d^4\,\text{Sin}[e+f\,x]-\right.$$

$$45\,a\,b^4\,c\,d^4\,\text{Sin}[e+f\,x]-12\,a^4\,b\,d^5\,\text{Sin}[e+f\,x]+12\,b^5\,d^5\,\text{Sin}[e+f\,x]+6\,b^5\,c^5\,\text{Sin}[2\,(e+f\,x)]-$$

$$30\,a\,b^4\,c^4\,d\,\text{Sin}[2\,(e+f\,x)]+60\,a^2\,b^3\,c^3\,d^2\,\text{Sin}[2\,(e+f\,x)]-120\,a^3\,b^2\,c^2\,d^3\,\text{Sin}[2\,(e+f\,x)]+$$

$$60\,a\,b^4\,c^2\,d^3\,\text{Sin}[2\,(e+f\,x)]+90\,a^4\,b\,c\,d^4\,\text{Sin}[2\,(e+f\,x)]-90\,a^2\,b^3\,c\,d^4\,\text{Sin}[2\,(e+f\,x)]+$$

$$30\,b^5\,c\,d^4\,\text{Sin}[2\,(e+f\,x)]-24\,a^5\,d^5\,\text{Sin}[2\,(e+f\,x)]+22\,a^3\,b^2\,d^5\,\text{Sin}[2\,(e+f\,x)]-$$

$$4\,a\,b^4\,d^5\,\text{Sin}[2\,(e+f\,x)]-60\,a^2\,b^3\,c^2\,d^3\,\text{Sin}[3\,(e+f\,x)]+60\,b^5\,c^2\,d^3\,\text{Sin}[3\,(e+f\,x)]+$$

$$45\,a^3\,b^2\,c\,d^4\,\text{Sin}[3\,(e+f\,x)]-45\,a\,b^4\,c\,d^4\,\text{Sin}[3\,(e+f\,x)]-12\,a^4\,b\,d^5\,\text{Sin}[3\,(e+f\,x)]+$$

$$8\,a^2\,b^3\,d^5\,\text{Sin}[3\,(e+f\,x)]+4\,b^5\,d^5\,\text{Sin}[3\,(e+f\,x)]+3\,b^5\,c^5\,\text{Sin}[4\,(e+f\,x)]-$$

$$15\,a\,b^4\,c^4\,d\,\text{Sin}[4\,(e+f\,x)]+30\,a^2\,b^3\,c^3\,d^2\,\text{Sin}[4\,(e+f\,x)]-60\,a^3\,b^2\,c^2\,d^3\,\text{Sin}[4\,(e+f\,x)]+$$

$$30\,a\,b^4\,c^2\,d^3\,\text{Sin}[4\,(e+f\,x)]+45\,a^4\,b\,c\,d^4\,\text{Sin}[4\,(e+f\,x)]-30\,a^2\,b^3\,c\,d^4\,\text{Sin}[4\,(e+f\,x)]-$$

$$\left.12\,a^5\,d^5\,\text{Sin}[4\,(e+f\,x)]+7\,a^3\,b^2\,d^5\,\text{Sin}[4\,(e+f\,x)]+2\,a\,b^4\,d^5\,\text{Sin}[4\,(e+f\,x)]\right)$$

Problem 264: Unable to integrate problem.

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

Optimal (type 4, 213 leaves, 3 steps):

$$\frac{1}{d f}2 \sqrt{a+b}\ \text{Cot}[e+f x]\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[e+f x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b\,(1-\text{Sec}[e+f x])}{a+b}}\ \sqrt{-\frac{b\,(1+\text{Sec}[e+f x])}{a-b}} - \left(2\,(b c-a d)\ \text{EllipticPi}\left[\frac{2 d}{c+d}, \text{ArcSin}\left[\frac{\sqrt{1-\text{Sec}[e+f x]}}{\sqrt{2}}\right], \frac{2 b}{a+b}\right] \sqrt{\frac{a+b\,\text{Sec}[e+f x]}{a+b}}\ \text{Tan}[e+f x]\right) \Big/ \left(d\,(c+d)\, f \sqrt{a+b\,\text{Sec}[e+f x]}\ \sqrt{-\text{Tan}[e+f x]^2}\right)$$

Result (type 8, 35 leaves):

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

Problem 265: Unable to integrate problem.

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

Optimal (type 4, 196 leaves, 1 step):

$$\frac{1}{d \sqrt{\frac{a+b}{c+d}}\ f} 2\,\text{Cot}[e+f x]\ \text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\, d}, \text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{c+d}}\ \sqrt{c+d\,\text{Sec}[e+f x]}}{\sqrt{a+b\,\text{Sec}[e+f x]}}\right], \frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right] \sqrt{-\frac{(b c-a d)\,(1-\text{Sec}[e+f x])}{(c+d)\,(a+b\,\text{Sec}[e+f x])}}\ \sqrt{\frac{(b c-a d)\,(1+\text{Sec}[e+f x])}{(c-d)\,(a+b\,\text{Sec}[e+f x])}}\ (a+b\,\text{Sec}[e+f x])$$

Result (type 8, 37 leaves):

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

Problem 269: Unable to integrate problem.

$$\int \frac{\text{Sec}[e+f x]^2}{\sqrt{a+b\,\text{Sec}[e+f x]}\ \sqrt{c+d\,\text{Sec}[e+f x]}}\, dx$$

Optimal (type 4, 396 leaves, 3 steps):

$$\frac{1}{b\,d\,\sqrt{\frac{a+b}{c+d}}\,f}$$

$$2\,\text{Cot}[e+f\,x]\,\text{EllipticPi}\Big[\frac{b\,(c+d)}{(a+b)\,d},\,\text{ArcSin}\Big[\frac{\sqrt{\frac{a+b}{c+d}}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}{\sqrt{a+b\,\text{Sec}[e+f\,x]}}\Big],\,\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\Big]$$
$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sec}[e+f\,x])}{(c+d)\,(a+b\,\text{Sec}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sec}[e+f\,x])}{(c-d)\,(a+b\,\text{Sec}[e+f\,x])}}\,(a+b\,\text{Sec}[e+f\,x])\,-$$
$$\Big(2\,a\,\sqrt{a+b}\,\text{Cot}[e+f\,x]\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sec}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}\Big],\,\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]$$
$$\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sec}[e+f\,x])}{(a+b)\,(c+d\,\text{Sec}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sec}[e+f\,x])}{(a-b)\,(c+d\,\text{Sec}[e+f\,x])}}$$
$$(c+d\,\text{Sec}[e+f\,x])\Big)\Big/\Big(b\,\sqrt{c+d}\,(b\,c-a\,d)\,f\Big)$$

Result (type 8, 39 leaves):

$$\int\frac{\text{Sec}[e+f\,x]^2}{\sqrt{a+b\,\text{Sec}[e+f\,x]}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}\,dx$$

Problem 270: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 170 leaves, 7 steps):

$$\frac{2\,d\,g\,\sqrt{\frac{d+c\,\text{Cos}[e+f\,x]}{c+d}}\,\text{EllipticPi}\Big[2,\,\frac{1}{2}\,(e+f\,x),\,\frac{2\,c}{c+d}\Big]\,\sqrt{g\,\text{Sec}[e+f\,x]}}{b\,f\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}\,+$$
$$\Big(2\,(b\,c-a\,d)\,g\,\sqrt{\frac{d+c\,\text{Cos}[e+f\,x]}{c+d}}\,\text{EllipticPi}\Big[\frac{2\,a}{a+b},\,\frac{1}{2}\,(e+f\,x),\,\frac{2\,c}{c+d}\Big]\,\sqrt{g\,\text{Sec}[e+f\,x]}\Big)\Big/$$
$$\Big(b\,(a+b)\,f\,\sqrt{c+d\,\text{Sec}[e+f\,x]}\Big)$$

Result (type 4, 223 leaves):

$$-\left(\left(2\,i\,g\sqrt{-\frac{c\,(-1+\text{Cos}[e+f\,x])}{c+d}}\,\sqrt{\frac{c\,(1+\text{Cos}[e+f\,x])}{c-d}}\,\text{Cot}[e+f\,x]\left(\text{EllipticPi}\left[1-\frac{c}{d},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{c-d}}\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right],\,\frac{-c+d}{c+d}\right]-\text{EllipticPi}\left[\frac{a\,(-c+d)}{-b\,c+a\,d},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{c-d}}\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right],\,\frac{-c+d}{c+d}\right]\right)\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}\right)\Big/\left(b\sqrt{\frac{1}{c-d}}\,f\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right)\right)$$

Problem 272: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}{a+b\,\text{Cos}[e+f\,x]}\,dx$$

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

$$\frac{2\,d\sqrt{\frac{d+c\,\text{Cos}[e+f\,x]}{c+d}}\,\text{EllipticPi}\left[2,\,\frac{1}{2}\,(e+f\,x),\,\frac{2\,c}{c+d}\right]\sqrt{g\,\text{Sec}[e+f\,x]}}{a\,f\,\sqrt{c+d\,\text{Sec}[e+f\,x]}}+\left(2\,(a\,c-b\,d)\sqrt{\frac{d+c\,\text{Cos}[e+f\,x]}{c+d}}\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\,\frac{1}{2}\,(e+f\,x),\,\frac{2\,c}{c+d}\right]\sqrt{g\,\text{Sec}[e+f\,x]}\right)\Big/\left(a\,(a+b)\,f\,\sqrt{c+d\,\text{Sec}[e+f\,x]}\right)$$

Result (type 4, 222 leaves):

$$-\left(\left(2\,i\sqrt{-\frac{c\,(-1+\text{Cos}[e+f\,x])}{c+d}}\,\sqrt{\frac{c\,(1+\text{Cos}[e+f\,x])}{c-d}}\,\text{Cot}[e+f\,x]\left(\text{EllipticPi}\left[1-\frac{c}{d},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{c-d}}\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right],\,\frac{-c+d}{c+d}\right]-\text{EllipticPi}\left[\frac{b\,(-c+d)}{-a\,c+b\,d},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{c-d}}\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right],\,\frac{-c+d}{c+d}\right]\right)\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{c+d\,\text{Sec}[e+f\,x]}\right)\Big/\left(a\sqrt{\frac{1}{c-d}}\,f\,\sqrt{d+c\,\text{Cos}[e+f\,x]}\right)\right)$$

Problem 273: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 95 leaves, 1 step):

$$\frac{\text{EllipticE}\left[\text{ArcSin}\left[\frac{\text{Tan}[e+f x]}{1+\text{Sec}[e+f x]}\right], \frac{a-b}{a+b}\right] \sqrt{\frac{1}{1+\text{Sec}[e+f x]}} \sqrt{a+b \text{Sec}[e+f x]}}{c f \sqrt{\frac{a+b \text{Sec}[e+f x]}{(a+b) (1+\text{Sec}[e+f x])}}}$$

Result (type 4, 1999 leaves):

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

$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 \text{Sec}\left[\frac{1}{2} (e+f x)\right]^5 \left(\frac{b}{\sqrt{b+a \text{Cos}[e+f x]} \sqrt{\text{Sec}[e+f x]}}+\frac{a \sqrt{\text{Sec}[e+f x]}}{\sqrt{b+a \text{Cos}[e+f x]}}+\right.\right.$$

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

$$\sqrt{\text{Sec}[e+f x]} \sqrt{1+\text{Sec}[e+f x]} \sqrt{a+b \text{Sec}[e+f x]}$$

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

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

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

$$\left(-\left(\left(a \text{Sec}\left[\frac{1}{2} (e+f x)\right]^5 \sqrt{1+\text{Sec}[e+f x]} \text{Sin}[e+f x]\right.\right.\right.$$

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

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

$$\left(8\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\sqrt{b+a\,\text{Cos}[e+f\,x]}\,\sqrt{\frac{b+a\,\text{Cos}[e+f\,x]}{(a+b)\,(1+\text{Cos}[e+f\,x])}}\right)-$$

$$\Bigg(3\,\sqrt{b+a\,\text{Cos}[e+f\,x]}\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\sqrt{1+\text{Sec}[e+f\,x]}\,\text{Sin}[e+f\,x]$$

$$\Bigg(2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\sqrt{\frac{\text{Cos}[e+f\,x]}{1+\text{Cos}[e+f\,x]}}\,\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right],\frac{a-b}{a+b}\right]+$$

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

$$\left(8\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{\frac{b+a\,\text{Cos}[e+f\,x]}{(a+b)\,(1+\text{Cos}[e+f\,x])}}\right)-$$

$$\Bigg(\sqrt{b+a\,\text{Cos}[e+f\,x]}\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\sqrt{1+\text{Sec}[e+f\,x]}$$

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

$$\Bigg(2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\sqrt{\frac{\text{Cos}[e+f\,x]}{1+\text{Cos}[e+f\,x]}}\,\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right],\frac{a-b}{a+b}\right]+$$

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

$$\left(8\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\left(\frac{b+a\,\text{Cos}[e+f\,x]}{(a+b)\,(1+\text{Cos}[e+f\,x])}\right)^{3/2}\right)+$$

$$\Bigg(5\,\sqrt{b+a\,\text{Cos}[e+f\,x]}\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\sqrt{1+\text{Sec}[e+f\,x]}$$

$$\Bigg(2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\sqrt{\frac{\text{Cos}[e+f\,x]}{1+\text{Cos}[e+f\,x]}}\,\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right],\frac{a-b}{a+b}\right]+$$

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

$$\left.\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\bigg/\left(8\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\sqrt{\frac{b+a\,\text{Cos}[e+f\,x]}{(a+b)\,(1+\text{Cos}[e+f\,x])}}\right)+$$

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

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\sqrt{1+\text{Sec}[e+f\,x]}$$

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

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

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

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

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

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

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

$$\left(\sqrt{b+a\,\text{Cos}[e+f\,x]}\ \text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^5\text{Sec}[e+f\,x]\right.$$

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

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

$$\left(8\,\left(\frac{1}{1+\mathrm{Cos}[e+f\,x]}\right)^{3/2}\,\sqrt{\frac{b+a\,\mathrm{Cos}[e+f\,x]}{(a+b)\,(1+\mathrm{Cos}[e+f\,x])}}\,\sqrt{1+\mathrm{Sec}[e+f\,x]}\right)\right)\right)$$

Problem 274: Unable to integrate problem.

$$\int \frac{(g\,\mathrm{Sec}[e+f\,x])^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}{c+c\,\mathrm{Sec}[e+f\,x]}\,dx$$

Optimal (type 4, 295 leaves, 11 steps):

$$\frac{g\,(b+a\,\mathrm{Cos}[e+f\,x])\,\mathrm{EllipticE}\left[\frac{1}{2}\,(e+f\,x),\frac{2\,a}{a+b}\right]\,\sqrt{g\,\mathrm{Sec}[e+f\,x]}}{c\,f\,\sqrt{\frac{b+a\,\mathrm{Cos}[e+f\,x]}{a+b}}\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}+$$

$$\frac{(a-b)\,g\,\sqrt{\frac{b+a\,\mathrm{Cos}[e+f\,x]}{a+b}}\,\mathrm{EllipticF}\left[\frac{1}{2}\,(e+f\,x),\frac{2\,a}{a+b}\right]\,\sqrt{g\,\mathrm{Sec}[e+f\,x]}}{c\,f\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}+$$

$$\frac{2\,b\,g\,\sqrt{\frac{b+a\,\mathrm{Cos}[e+f\,x]}{a+b}}\,\mathrm{EllipticPi}\left[2,\frac{1}{2}\,(e+f\,x),\frac{2\,a}{a+b}\right]\,\sqrt{g\,\mathrm{Sec}[e+f\,x]}}{c\,f\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}-$$

$$\frac{g\,(b+a\,\mathrm{Cos}[e+f\,x])\,\sqrt{g\,\mathrm{Sec}[e+f\,x]}\,\mathrm{Sin}[e+f\,x]}{f\,(c+c\,\mathrm{Cos}[e+f\,x])\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}$$

Result (type 8, 41 leaves):

$$\int \frac{(g\,\mathrm{Sec}[e+f\,x])^{3/2}\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}}{c+c\,\mathrm{Sec}[e+f\,x]}\,dx$$

Problem 275: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Sec}[e+f\,x]}{\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}\,(c+c\,\mathrm{Sec}[e+f\,x])}\,dx$$

Optimal (type 4, 209 leaves, 3 steps):

$$-\frac{1}{(a-b)\,c\,f}2\sqrt{a+b}\,\text{Cot}[e+f\,x]\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[e+f\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[e+f\,x])}{a+b}}\sqrt{-\frac{b\,(1+\text{Sec}[e+f\,x])}{a-b}}+\left(\text{EllipticE}\left[\text{ArcSin}\left[\frac{\text{Tan}[e+f\,x]}{1+\text{Sec}[e+f\,x]}\right],\frac{a-b}{a+b}\right]\sqrt{\frac{1}{1+\text{Sec}[e+f\,x]}}\sqrt{a+b\,\text{Sec}[e+f\,x]}\right)\Big/\left((a-b)\,c\,f\sqrt{\frac{a+b\,\text{Sec}[e+f\,x]}{(a+b)\,(1+\text{Sec}[e+f\,x])}}\right)$$

Result (type 4, 2173 leaves):

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

$$\left(2\,\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2\left(-\frac{b}{(-a+b)\sqrt{b+a\,\text{Cos}[e+f\,x]}\sqrt{\text{Sec}[e+f\,x]}}-\frac{a\sqrt{\text{Sec}[e+f\,x]}}{(-a+b)\sqrt{b+a\,\text{Cos}[e+f\,x]}}+\frac{b\sqrt{\text{Sec}[e+f\,x]}}{(-a+b)\sqrt{b+a\,\text{Cos}[e+f\,x]}}-\frac{a\,\text{Cos}[2\,(e+f\,x)]\sqrt{\text{Sec}[e+f\,x]}}{(-a+b)\sqrt{b+a\,\text{Cos}[e+f\,x]}}\right)\text{Sec}[e+f\,x]^{3/2}\sqrt{\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Sec}[e+f\,x]}\left((a-b)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{a-b}{a+b}}\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right],\frac{a+b}{a-b}\right]\sqrt{\frac{(b+a\,\text{Cos}[e+f\,x])\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}}+\sqrt{2}\sqrt{\frac{a-b}{a+b}}\sqrt{\frac{\text{Cos}[e+f\,x]}{1+\text{Cos}[e+f\,x]}}(b+a\,\text{Cos}[e+f\,x])\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)\Big/$$

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

$$(c + c\,\text{Sec}[e + f x]) \Bigg(- \Bigg(\Bigg(\Bigg(2\,\text{Sec}\Big[\frac{1}{2}(e + f x)\Big]^2 \sqrt{\text{Cos}\Big[\frac{1}{2}(e + f x)\Big]^2 \text{Sec}[e + f x]}$$

$$\text{Tan}\Big[\frac{1}{2}(e + f x)\Big] \Bigg((a - b)\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\frac{a - b}{a + b}}\,\text{Tan}\Big[\frac{1}{2}(e + f x)\Big]\Big], \frac{a + b}{a - b}\Big]$$

$$\sqrt{\frac{(b + a\,\text{Cos}[e + f x])\,\text{Sec}\big[\frac{1}{2}(e + f x)\big]^2}{a + b}} +$$

$$\sqrt{2}\sqrt{\frac{a - b}{a + b}}\sqrt{\frac{\text{Cos}[e + f x]}{1 + \text{Cos}[e + f x]}}\,(b + a\,\text{Cos}[e + f x])\,\text{Tan}\Big[\frac{1}{2}(e + f x)\Big] \Bigg) \Bigg) \Bigg/$$

$$\Bigg(\Big(\frac{a - b}{a + b}\Big)^{3/2} (a + b) \sqrt{b + a\,\text{Cos}[e + f x]} \sqrt{\text{Cos}[e + f x]\,\text{Sec}\Big[\frac{1}{2}(e + f x)\Big]^4} \Bigg) \Bigg) -$$

$$\Bigg(a \sqrt{\text{Cos}\Big[\frac{1}{2}(e + f x)\Big]^2 \text{Sec}[e + f x]}\,\text{Sin}[e + f x] \Bigg((a - b)\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\frac{a - b}{a + b}}$$

$$\text{Tan}\Big[\frac{1}{2}(e + f x)\Big]\Big], \frac{a + b}{a - b}\Big] \sqrt{\frac{(b + a\,\text{Cos}[e + f x])\,\text{Sec}\big[\frac{1}{2}(e + f x)\big]^2}{a + b}} + \sqrt{2}\sqrt{\frac{a - b}{a + b}}$$

$$\sqrt{\frac{\text{Cos}[e + f x]}{1 + \text{Cos}[e + f x]}}\,(b + a\,\text{Cos}[e + f x])\,\text{Tan}\Big[\frac{1}{2}(e + f x)\Big] \Bigg) \Big(-1 + \text{Tan}\Big[\frac{1}{2}(e + f x)\Big]^2 \Big) \Bigg) \Bigg/$$

$$\Bigg(\Big(\frac{a - b}{a + b}\Big)^{3/2} (a + b)\,(b + a\,\text{Cos}[e + f x])^{3/2} \sqrt{\text{Cos}[e + f x]\,\text{Sec}\Big[\frac{1}{2}(e + f x)\Big]^4} \Bigg) +$$

$$\Bigg(\sqrt{\text{Cos}\Big[\frac{1}{2}(e + f x)\Big]^2 \text{Sec}[e + f x]} \Bigg((a - b)\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\frac{a - b}{a + b}}\,\text{Tan}\Big[\frac{1}{2}(e + f x)\Big]\Big],$$

$$\frac{a + b}{a - b}\Big] \sqrt{\frac{(b + a\,\text{Cos}[e + f x])\,\text{Sec}\big[\frac{1}{2}(e + f x)\big]^2}{a + b}} + \sqrt{2}\sqrt{\frac{a - b}{a + b}}\sqrt{\frac{\text{Cos}[e + f x]}{1 + \text{Cos}[e + f x]}}$$

$$\left.(b + a\,\mathrm{Cos}[e + f\,x])\,\mathrm{Tan}\left[\frac{1}{2}\,(e + f\,x)\right]\right)\,\left(-\mathrm{Sec}\left[\frac{1}{2}\,(e + f\,x)\right]^4\,\mathrm{Sin}[e + f\,x] + \right.$$

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

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

$$\left(1\Big/\left(\left(\frac{a - b}{a + b}\right)^{3/2}\,(a + b)\,\sqrt{b + a\,\mathrm{Cos}[e + f\,x]}\,\sqrt{\mathrm{Cos}[e + f\,x]\,\mathrm{Sec}\left[\frac{1}{2}\,(e + f\,x)\right]^4}\right)\right)$$

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

$$\left(\frac{\sqrt{\frac{a-b}{a+b}}\,\sqrt{\frac{\mathrm{Cos}[e+f\,x]}{1+\mathrm{Cos}[e+f\,x]}}\,(b + a\,\mathrm{Cos}[e + f\,x])\,\mathrm{Sec}\left[\frac{1}{2}\,(e + f\,x)\right]^2}{\sqrt{2}} - \right.$$

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

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

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

$$\left((a - b)\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\sqrt{\frac{a - b}{a + b}}\,\mathrm{Tan}\left[\frac{1}{2}\,(e + f\,x)\right]\right],\,\frac{a + b}{a - b}\right]\right.$$

$$\left(-\frac{a\,\mathrm{Sec}\left[\frac{1}{2}\,(e + f\,x)\right]^2\,\mathrm{Sin}[e + f\,x]}{a + b} + \frac{1}{a + b}(b + a\,\mathrm{Cos}[e + f\,x])\,\mathrm{Sec}\left[\frac{1}{2}\,(e + f\,x)\right]^2\right.$$

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

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

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

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

$$\sqrt{\frac{(b+a\,\text{Cos}[e+f x])\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}}+$$

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

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

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

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

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

Problem 276: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 4, 214 leaves, 3 steps):

$$\frac{1}{(a-b)\, b\, c\, f} 2\, a\, \sqrt{a+b}\, \mathrm{Cot}[e+f x]\, \mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b\,\mathrm{Sec}[e+f x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b\,(1-\mathrm{Sec}[e+f x])}{a+b}}\, \sqrt{-\frac{b\,(1+\mathrm{Sec}[e+f x])}{a-b}} - \left(\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\mathrm{Tan}[e+f x]}{1+\mathrm{Sec}[e+f x]}\right], \frac{a-b}{a+b}\right] \sqrt{\frac{1}{1+\mathrm{Sec}[e+f x]}}\, \sqrt{a+b\,\mathrm{Sec}[e+f x]}\right) \Big/ \left((a-b)\, c\, f \sqrt{\frac{a+b\,\mathrm{Sec}[e+f x]}{(a+b)\,(1+\mathrm{Sec}[e+f x])}}\right)$$

Result (type 4, 1482 leaves) :

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

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

$$\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2 (b+a\,\mathrm{Cos}[e+f x])\, \mathrm{Sec}[e+f x]^2 \left(-\frac{2\,\mathrm{Sin}[e+f x]}{-a+b}+\frac{2\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]}{-a+b}\right)\right) \Big/ \left(f\, \sqrt{a+b\,\mathrm{Sec}[e+f x]}\, (c+c\,\mathrm{Sec}[e+f x])\right) -$$

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

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

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

$$4\,\mathrm{i}\,a\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}}-$$

$$2\,\mathrm{i}\,b\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}}+$$

$$4\,\mathrm{i}\,a\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}}-$$

$$2\,\mathrm{i}\,b\,\mathrm{EllipticPi}\left[-\frac{a+b}{a-b},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}}+$$

$$\mathrm{i}\left(a-b\right)\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\sqrt{\frac{a+b-a\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2+b\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}}-$$

$$2\,\mathrm{i}\left(a-b\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{\frac{-a+b}{a+b}}\ \mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right],\,\frac{a+b}{a-b}\right]$$

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

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

Problem 277: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(g\,\text{Sec}[e+f\,x])^{3/2}}{\sqrt{a+b\,\text{Sec}[e+f\,x]}\,(c+c\,\text{Sec}[e+f\,x])}\,dx$$

Optimal (type 4, 229 leaves, 7 steps):

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

Result (type 6, 1019 leaves):

$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]^2(b+a\,\text{Cos}[e+f\,x])\,(g\,\text{Sec}[e+f\,x])^{3/2}\left(\frac{2\,\text{Csc}[e]}{(-a+b)\,f}+\frac{2\,\text{Sec}\left[\frac{e}{2}\right]\text{Sec}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\text{Sin}\left[\frac{f\,x}{2}\right]}{(-a+b)\,f}\right)\right)\Big/\left(\sqrt{a+b\,\text{Sec}[e+f\,x]}\,(c+c\,\text{Sec}[e+f\,x])\right)+$$

$$\frac{1}{(-a+b)\,f\sqrt{1+\text{Cot}[e]^2}\sqrt{a+b\,\text{Sec}[e+f\,x]}\,(c+c\,\text{Sec}[e+f\,x])}$$

$$\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\frac{\text{Csc}[e]\left(b-a\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right)}{a\sqrt{1+\text{Cot}[e]^2}\left(1+\frac{b\,\text{Csc}[e]}{a\sqrt{1+\text{Cot}[e]^2}}\right)},\right.$$

$$\frac{\text{Csc}[e]\left(b-a\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\ \text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]\right)}{a\sqrt{1+\text{Cot}[e]^2}\left(-1+\frac{b\,\text{Csc}[e]}{a\sqrt{1+\text{Cot}[e]^2}}\right)}\Bigg]\ \text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2$$

$$\sqrt{b+a\,\text{Cos}[e+f x]}\ \text{Csc}\left[\frac{e}{2}\right]\text{Sec}\left[\frac{e}{2}\right]\left(g\,\text{Sec}[e+f x]\right)^{3/2}\text{Sec}[f x-\text{ArcTan}[\text{Cot}[e]]]$$

$$\sqrt{\frac{a\sqrt{1+\text{Cot}[e]^2}-a\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]}{a\sqrt{1+\text{Cot}[e]^2}-b\,\text{Csc}[e]}}$$

$$\sqrt{\frac{a\sqrt{1+\text{Cot}[e]^2}+a\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]}{a\sqrt{1+\text{Cot}[e]^2}+b\,\text{Csc}[e]}}$$

$$\sqrt{b-a\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\ \text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]}\ +$$

$$\Bigg(a\,\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]^2\sqrt{b+a\,\text{Cos}[e+f x]}\ \text{Csc}\left[\frac{e}{2}\right]\text{Sec}\left[\frac{e}{2}\right]\left(g\,\text{Sec}[e+f x]\right)^{3/2}$$

$$\Bigg(\Bigg(\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Bigg(\Big(\text{Sec}[e]\ \Big(b+a\,\text{Cos}[e]\ \text{Cos}[f x+\text{ArcTan}[\text{Tan}[e]]]$$

$$\sqrt{1+\text{Tan}[e]^2}\Big)\Big)\Big/\left(a\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{b\,\text{Sec}[e]}{a\sqrt{1+\text{Tan}[e]^2}}\right)\right)\Bigg),$$

$$-\Bigg(\Big(\text{Sec}[e]\ \Big(b+a\,\text{Cos}[e]\ \text{Cos}[f x+\text{ArcTan}[\text{Tan}[e]]]\Big)\sqrt{1+\text{Tan}[e]^2}\Big)\Big)\Big/$$

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

$$\Bigg(\sqrt{1+\text{Tan}[e]^2}\ \sqrt{\Big(\Big(a\sqrt{1+\text{Tan}[e]^2}-a\,\text{Cos}[f x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\Big)\Big/}$$

$$\overline{\Big(b\,\text{Sec}[e]+a\sqrt{1+\text{Tan}[e]^2}\Big)\Big)}\ \sqrt{\Big(\Big(a\sqrt{1+\text{Tan}[e]^2}+}$$

$$\overline{a\,\text{Cos}[f x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\Big)\Big/\Big(-b\,\text{Sec}[e]+a\sqrt{1+\text{Tan}[e]^2}\Big)\Big)}$$

$$\sqrt{b+a\,\text{Cos}[e]\ \text{Cos}[f x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\ \Bigg)-$$

$$\Bigg(\frac{\text{Sin}[f x+\text{ArcTan}[\text{Tan}[e]]]\ \text{Tan}[e]}{\sqrt{1+\text{Tan}[e]^2}}+\Big(2\,a\,\text{Cos}[e]\ \Big(b+a\,\text{Cos}[e]\ \text{Cos}[$$

$$\text{f x} + \text{ArcTan}[\text{Tan}[e]]] \sqrt{1+\text{Tan}[e]^2}\Big)\Big) \Big/ \left(a^2 \text{Cos}[e]^2 + a^2 \text{Sin}[e]^2\right)\Big) \Big/$$

$$\left(\sqrt{b + a\,\text{Cos}[e]\,\text{Cos}[\text{f x} + \text{ArcTan}[\text{Tan}[e]]] \sqrt{1+\text{Tan}[e]^2}}\right)\Big)\Big) \Big/$$

$$\left(2\,(-a+b)\,f \sqrt{a+b\,\text{Sec}[e+f x]}\,(c+c\,\text{Sec}[e+f x])\right)$$

Problem 278: Unable to integrate problem.

$$\int \frac{(g\,\text{Sec}[e+f x])^{5/2}}{\sqrt{a+b\,\text{Sec}[e+f x]}\,(c+c\,\text{Sec}[e+f x])}\,dx$$

Optimal (type 4, 312 leaves, 11 steps):

$$-\frac{g^2\,(b+a\,\text{Cos}[e+f x])\,\text{EllipticE}\left[\frac{1}{2}(e+f x), \frac{2a}{a+b}\right] \sqrt{g\,\text{Sec}[e+f x]}}{(a-b)\,c\,f \sqrt{\frac{b+a\,\text{Cos}[e+f x]}{a+b}} \sqrt{a+b\,\text{Sec}[e+f x]}} - \frac{g^2 \sqrt{\frac{b+a\,\text{Cos}[e+f x]}{a+b}}\,\text{EllipticF}\left[\frac{1}{2}(e+f x), \frac{2a}{a+b}\right] \sqrt{g\,\text{Sec}[e+f x]}}{c\,f \sqrt{a+b\,\text{Sec}[e+f x]}} + \frac{2\,g^2 \sqrt{\frac{b+a\,\text{Cos}[e+f x]}{a+b}}\,\text{EllipticPi}\left[2, \frac{1}{2}(e+f x), \frac{2a}{a+b}\right] \sqrt{g\,\text{Sec}[e+f x]}}{c\,f \sqrt{a+b\,\text{Sec}[e+f x]}} + \frac{g^2\,(b+a\,\text{Cos}[e+f x]) \sqrt{g\,\text{Sec}[e+f x]}\,\text{Sin}[e+f x]}{(a-b)\,f\,(c+c\,\text{Cos}[e+f x]) \sqrt{a+b\,\text{Sec}[e+f x]}}$$

Result (type 8, 41 leaves):

$$\int \frac{(g\,\text{Sec}[e+f x])^{5/2}}{\sqrt{a+b\,\text{Sec}[e+f x]}\,(c+c\,\text{Sec}[e+f x])}\,dx$$

Problem 279: Unable to integrate problem.

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

Optimal (type 4, 213 leaves, 3 steps):

$$\frac{1}{d f}2 \sqrt{a+b} \operatorname{Cot}[e+f x] \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{a+b \operatorname{Sec}[e+f x]}}{\sqrt{a+b}}\right], \frac{a+b}{a-b}\right] \sqrt{\frac{b (1-\operatorname{Sec}[e+f x])}{a+b}} \sqrt{-\frac{b (1+\operatorname{Sec}[e+f x])}{a-b}} - \left(2 (b c-a d) \operatorname{EllipticPi}\left[\frac{2 d}{c+d}, \operatorname{ArcSin}\left[\frac{\sqrt{1-\operatorname{Sec}[e+f x]}}{\sqrt{2}}\right], \frac{2 b}{a+b}\right] \sqrt{\frac{a+b \operatorname{Sec}[e+f x]}{a+b}} \operatorname{Tan}[e+f x]\right) \Big/ \left(d (c+d) f \sqrt{a+b \operatorname{Sec}[e+f x]} \sqrt{-\operatorname{Tan}[e+f x]^2}\right)$$

Result (type 8, 35 leaves):

$$\int \frac{\operatorname{Sec}[e+f x] \sqrt{a+b \operatorname{Sec}[e+f x]}}{c+d \operatorname{Sec}[e+f x]} \, dx$$

Problem 280: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 170 leaves, 7 steps):

$$\frac{2 b g \sqrt{\frac{b+a \operatorname{Cos}[e+f x]}{a+b}} \operatorname{EllipticPi}\left[2, \frac{1}{2} (e+f x), \frac{2 a}{a+b}\right] \sqrt{g \operatorname{Sec}[e+f x]}}{d f \sqrt{a+b \operatorname{Sec}[e+f x]}} - \left(2 (b c-a d) g \sqrt{\frac{b+a \operatorname{Cos}[e+f x]}{a+b}} \operatorname{EllipticPi}\left[\frac{2 c}{c+d}, \frac{1}{2} (e+f x), \frac{2 a}{a+b}\right] \sqrt{g \operatorname{Sec}[e+f x]}\right) \Big/ \left(d (c+d) f \sqrt{a+b \operatorname{Sec}[e+f x]}\right)$$

Result (type 4, 223 leaves):

$$-\left(\left(2\,i\,g\,\sqrt{-\frac{a\,(-1+\text{Cos}[e+f\,x])}{a+b}}\,\sqrt{\frac{a\,(1+\text{Cos}[e+f\,x])}{a-b}}\,\text{Cot}[e+f\,x]\right.\right.$$
$$\left(\text{EllipticPi}\left[1-\frac{a}{b},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[e+f\,x]}\right],\,\frac{-a+b}{a+b}\right]-\right.$$
$$\left.\text{EllipticPi}\left[\frac{(a-b)\,c}{-b\,c+a\,d},\,i\,\text{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\text{Cos}[e+f\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)$$
$$\left.\left.\sqrt{g\,\text{Sec}[e+f\,x]}\,\sqrt{a+b\,\text{Sec}[e+f\,x]}\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,d\,f\,\sqrt{b+a\,\text{Cos}[e+f\,x]}\right)\right)$$

Problem 281: Unable to integrate problem.

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

Optimal (type 4, 102 leaves, 1 step):

$$\left(2\,\text{EllipticPi}\left[\frac{2\,d}{c+d},\,\text{ArcSin}\left[\frac{\sqrt{1-\text{Sec}[e+f\,x]}}{\sqrt{2}}\right],\,\frac{2\,b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sec}[e+f\,x]}{a+b}}\,\text{Tan}[e+f\,x]\right)\Big/$$
$$\left((c+d)\,f\,\sqrt{a+b\,\text{Sec}[e+f\,x]}\,\sqrt{-\text{Tan}[e+f\,x]^2}\right)$$

Result (type 8, 35 leaves):

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

Problem 282: Unable to integrate problem.

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

Optimal (type 4, 209 leaves, 3 steps):

$$\frac{1}{b\,d\,f}2\sqrt{a+b}\;\text{Cot}[e+f\,x]\;\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{a+b\,\text{Sec}[e+f\,x]}}{\sqrt{a+b}}\right],\frac{a+b}{a-b}\right]\sqrt{\frac{b\,(1-\text{Sec}[e+f\,x])}{a+b}}\;\sqrt{-\frac{b\,(1+\text{Sec}[e+f\,x])}{a-b}}\;-$$

$$\left(2\,c\;\text{EllipticPi}\left[\frac{2\,d}{c+d},\text{ArcSin}\left[\frac{\sqrt{1-\text{Sec}[e+f\,x]}}{\sqrt{2}}\right],\frac{2\,b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sec}[e+f\,x]}{a+b}}\;\text{Tan}[e+f\,x]\right)\Big/$$

$$\left(d\,(c+d)\,f\,\sqrt{a+b\,\text{Sec}[e+f\,x]}\;\sqrt{-\text{Tan}[e+f\,x]^2}\right)$$

Result (type 8, 37 leaves):

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

Problem 284: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(g\,\text{Sec}[e+f\,x])^{5/2}}{\sqrt{a+b\,\text{Sec}[e+f\,x]}\;(c+d\,\text{Sec}[e+f\,x])}\,dx$$

Optimal (type 4, 166 leaves, 7 steps):

$$\frac{2\,g^2\sqrt{\frac{b+a\,\text{Cos}[e+f\,x]}{a+b}}\;\text{EllipticPi}\left[2,\frac{1}{2}(e+f\,x),\frac{2\,a}{a+b}\right]\sqrt{g\,\text{Sec}[e+f\,x]}}{d\,f\,\sqrt{a+b\,\text{Sec}[e+f\,x]}}-$$

$$\left(2\,c\,g^2\sqrt{\frac{b+a\,\text{Cos}[e+f\,x]}{a+b}}\;\text{EllipticPi}\left[\frac{2\,c}{c+d},\frac{1}{2}(e+f\,x),\frac{2\,a}{a+b}\right]\sqrt{g\,\text{Sec}[e+f\,x]}\right)\Big/$$

$$\left(d\,(c+d)\,f\,\sqrt{a+b\,\text{Sec}[e+f\,x]}\right)$$

Result (type 4, 246 leaves):

$$-\left(\left(2\,i\,g\,\sqrt{-\frac{a\,(-1+\mathrm{Cos}[e+f\,x])}{a+b}}\,\sqrt{\frac{a\,(1+\mathrm{Cos}[e+f\,x])}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[e+f\,x]}\,\mathrm{Cot}[e+f\,x]\right.\right.$$
$$\left((-b\,c+a\,d)\,\mathrm{EllipticPi}\left[1-\frac{a}{b},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[e+f\,x]}\right],\,\frac{-a+b}{a+b}\right]+\right.$$
$$\left.b\,c\,\mathrm{EllipticPi}\left[\frac{(a-b)\,c}{-b\,c+a\,d},\,i\,\mathrm{ArcSinh}\left[\sqrt{\frac{1}{a-b}}\,\sqrt{b+a\,\mathrm{Cos}[e+f\,x]}\right],\,\frac{-a+b}{a+b}\right]\right)$$
$$\left.\left.(g\,\mathrm{Sec}[e+f\,x])^{3/2}\right)\Big/\left(\sqrt{\frac{1}{a-b}}\,b\,d\,(-b\,c+a\,d)\,f\,\sqrt{a+b\,\mathrm{Sec}[e+f\,x]}\right)\right)$$

Problem 285: Result more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[e+f\,x]\,\mathrm{Tan}[e+f\,x]^4}{(c-c\,\mathrm{Sec}[e+f\,x])^7}\,dx$$

Optimal (type 3, 67 leaves, 4 steps):

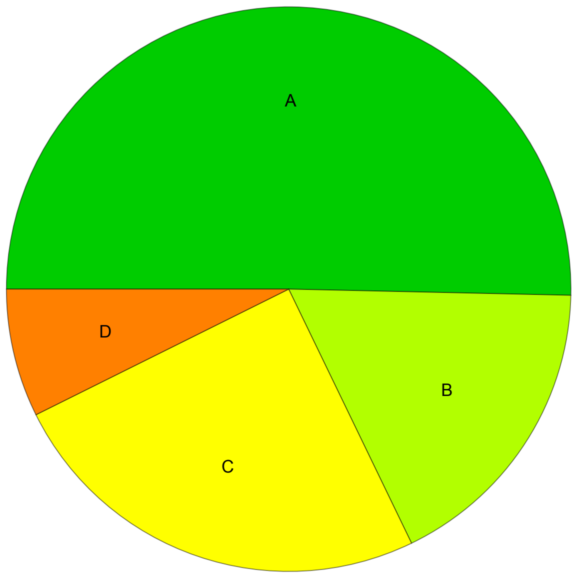
$$\frac{\mathrm{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]^5}{20\,c^7\,f}-\frac{\mathrm{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]^7}{14\,c^7\,f}+\frac{\mathrm{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]^9}{36\,c^7\,f}$$

Result (type 3, 151 leaves):

$$\frac{1}{23\,063\,040\,c^7\,f}$$
$$\mathrm{Csc}\left[\frac{e}{2}\right]\mathrm{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]^9\left(-971\,082\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]-718\,830\,\mathrm{Sin}\left[e+\frac{f\,x}{2}\right]+467\,208\,\mathrm{Sin}\left[e+\frac{3\,f\,x}{2}\right]+\right.$$
$$659\,400\,\mathrm{Sin}\left[2\,e+\frac{3\,f\,x}{2}\right]-303\,192\,\mathrm{Sin}\left[2\,e+\frac{5\,f\,x}{2}\right]-179\,640\,\mathrm{Sin}\left[3\,e+\frac{5\,f\,x}{2}\right]+$$
$$\left.30\,753\,\mathrm{Sin}\left[3\,e+\frac{7\,f\,x}{2}\right]+89\,955\,\mathrm{Sin}\left[4\,e+\frac{7\,f\,x}{2}\right]-13\,427\,\mathrm{Sin}\left[4\,e+\frac{9\,f\,x}{2}\right]+15\,\mathrm{Sin}\left[5\,e+\frac{9\,f\,x}{2}\right]\right)$$

Summary of Integration Test Results

286 integration problems



A - 144 optimal antiderivatives

B - 50 more than twice size of optimal antiderivatives

C - 71 unnecessarily complex antiderivatives

D - 21 unable to integrate problems

E - 0 integration timeouts