Mathematica 11.3 Integration Test Results

Test results for the 837 problems in "4.1.2.1 (a+b sin)^m (c+d sin)^n.m"

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

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

Optimal (type 3, 42 leaves, 2 steps):

$$\frac{3\,x}{2\,a} + \frac{2\,\mathrm{Cos}[x]}{a} - \frac{3\,\mathrm{Cos}[x]\,\mathrm{Sin}[x]}{2\,a} + \frac{\mathrm{Cos}[x]\,\mathrm{Sin}[x]^2}{a + a\,\mathrm{Sin}[x]}$$

Result (type 3, 87 leaves):

$$\frac{1}{8\,a\,\left(1 + \mathrm{Sin}[x]\right)}\left(\mathrm{Cos}\left[\frac{x}{2}\right] + \mathrm{Sin}\left[\frac{x}{2}\right]\right)$$
$$\left(4\,\left(1 + 3\,x\right)\,\mathrm{Cos}\left[\frac{x}{2}\right] + 3\,\mathrm{Cos}\left[\frac{3\,x}{2}\right] + \mathrm{Cos}\left[\frac{5\,x}{2}\right] - 20\,\mathrm{Sin}\left[\frac{x}{2}\right] + 12\,x\,\mathrm{Sin}\left[\frac{x}{2}\right] + 3\,\mathrm{Sin}\left[\frac{3\,x}{2}\right] - \mathrm{Sin}\left[\frac{5\,x}{2}\right]\right)$$

Problem 6: Result more than twice size of optimal antiderivative.

$$\int \frac{\mathrm{Sin}[x]}{a + a\,\mathrm{Sin}[x]}\,dx$$

Optimal (type 3, 17 leaves, 2 steps):

$$\frac{x}{a} + \frac{\mathrm{Cos}[x]}{a + a\,\mathrm{Sin}[x]}$$

Result (type 3, 42 leaves):

$$\frac{\left(\mathrm{Cos}\left[\frac{x}{2}\right] + \mathrm{Sin}\left[\frac{x}{2}\right]\right)\,\left(x\,\mathrm{Cos}\left[\frac{x}{2}\right] + \left(-2 + x\right)\,\mathrm{Sin}\left[\frac{x}{2}\right]\right)}{a\,\left(1 + \mathrm{Sin}[x]\right)}$$

Problem 7: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{a + a\,\mathrm{Sin}[x]}\,dx$$

Optimal (type 3, 12 leaves, 1 step):

$$-\frac{\mathrm{Cos}[x]}{a + a\,\mathrm{Sin}[x]}$$

Result (type 3, 29 leaves):

$$\frac{2\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)}{a+a\,\text{Sin}[x]}$$

Problem 8: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Csc}[x]}{a+a\,\text{Sin}[x]}\,dx$$

Optimal (type 3, 20 leaves, 3 steps):

$$-\frac{\text{ArcTanh}[\text{Cos}[x]]}{a}+\frac{\text{Cos}[x]}{a+a\,\text{Sin}[x]}$$

Result (type 3, 74 leaves):

$$-\frac{1}{a\,(1+\text{Sin}[x])}\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)$$
$$\left(\text{Cos}\left[\frac{x}{2}\right]\left(\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]-\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\right)+\left(2+\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]-\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\right)\text{Sin}\left[\frac{x}{2}\right]\right)$$

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

$$\int \frac{\text{Csc}[x]^2}{a+a\,\text{Sin}[x]}\,dx$$

Optimal (type 3, 26 leaves, 5 steps):

$$\frac{\text{ArcTanh}[\text{Cos}[x]]}{a}-\frac{2\,\text{Cot}[x]}{a}+\frac{\text{Cot}[x]}{a+a\,\text{Sin}[x]}$$

Result (type 3, 63 leaves):

$$\frac{-\text{Cot}\left[\frac{x}{2}\right]+2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]-2\,\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]+\frac{4\,\text{Sin}\left[\frac{x}{2}\right]}{\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]}+\text{Tan}\left[\frac{x}{2}\right]}{2\,a}$$

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

$$\int \frac{\text{Csc}[x]^4}{a+a\,\text{Sin}[x]}\,dx$$

Optimal (type 3, 55 leaves, 6 steps):

$$\frac{3\,\text{ArcTanh}[\text{Cos}[x]]}{2\,a}-\frac{4\,\text{Cot}[x]}{a}-\frac{4\,\text{Cot}[x]^3}{3\,a}+\frac{3\,\text{Cot}[x]\,\text{Csc}[x]}{2\,a}+\frac{\text{Cot}[x]\,\text{Csc}[x]^2}{a+a\,\text{Sin}[x]}$$

Result (type 3, 113 leaves):

$$\frac{1}{24\,a}\left(-20\,\mathrm{Cot}\left[\frac{x}{2}\right]+3\,\mathrm{Csc}\left[\frac{x}{2}\right]^2+36\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]-36\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]-3\,\mathrm{Sec}\left[\frac{x}{2}\right]^2+8\,\mathrm{Csc}[x]^3\,\mathrm{Sin}\left[\frac{x}{2}\right]^4+\frac{48\,\mathrm{Sin}\left[\frac{x}{2}\right]}{\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]}-\frac{1}{2}\,\mathrm{Csc}\left[\frac{x}{2}\right]^4\,\mathrm{Sin}[x]+20\,\mathrm{Tan}\left[\frac{x}{2}\right]\right)$$

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

$$\int\frac{\mathrm{Csc}[x]}{(a+a\,\mathrm{Sin}[x])^2}\,dx$$

Optimal (type 3, 38 leaves, 4 steps):

$$-\frac{\mathrm{ArcTanh}[\mathrm{Cos}[x]]}{a^2}+\frac{4\,\mathrm{Cos}[x]}{3\,a^2\,(1+\mathrm{Sin}[x])}+\frac{\mathrm{Cos}[x]}{3\,(a+a\,\mathrm{Sin}[x])^2}$$

Result (type 3, 129 leaves):

$$\left(\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{3\,x}{2}\right]\left(8+3\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]-3\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)+\mathrm{Cos}\left[\frac{x}{2}\right]\left(-6-9\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]+9\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)-6\left(3+2\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]+\mathrm{Cos}[x]\left(\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]-\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)-2\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)\mathrm{Sin}\left[\frac{x}{2}\right]\right)\right)\Big/\left(6\,a^2\,(1+\mathrm{Sin}[x])^2\right)$$

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

$$\int\frac{\mathrm{Csc}[x]^2}{(a+a\,\mathrm{Sin}[x])^2}\,dx$$

Optimal (type 3, 45 leaves, 6 steps):

$$\frac{2\,\mathrm{ArcTanh}[\mathrm{Cos}[x]]}{a^2}-\frac{10\,\mathrm{Cot}[x]}{3\,a^2}+\frac{2\,\mathrm{Cot}[x]}{a^2\,(1+\mathrm{Sin}[x])}+\frac{\mathrm{Cot}[x]}{3\,(a+a\,\mathrm{Sin}[x])^2}$$

Result (type 3, 166 leaves):

$$\frac{1}{6\,(a+a\,\mathrm{Sin}[x])^2}\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)\left(4\,\mathrm{Sin}\left[\frac{x}{2}\right]-2\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)+28\,\mathrm{Sin}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^2-3\,\mathrm{Cot}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3+12\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3-12\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3+3\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3\mathrm{Tan}\left[\frac{x}{2}\right]\right)$$

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

$$\int \frac{\operatorname{Csc}[x]^3}{(a + a \operatorname{Sin}[x])^2} \, dx$$

Optimal (type 3, 64 leaves, 7 steps):

$$-\frac{7 \operatorname{ArcTanh}[\operatorname{Cos}[x]]}{2 a^2} + \frac{16 \operatorname{Cot}[x]}{3 a^2} - \frac{7 \operatorname{Cot}[x] \operatorname{Csc}[x]}{2 a^2} + \frac{8 \operatorname{Cot}[x] \operatorname{Csc}[x]}{3 a^2 (1 + \operatorname{Sin}[x])} + \frac{\operatorname{Cot}[x] \operatorname{Csc}[x]}{3 (a + a \operatorname{Sin}[x])^2}$$

Result (type 3, 203 leaves):

$$\frac{1}{24 a^2 (1 + \operatorname{Sin}[x])^2} \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right) \left(-16 \operatorname{Sin}\left[\frac{x}{2}\right] - 3 \left(1 + \operatorname{Cot}\left[\frac{x}{2}\right]\right)^3 \operatorname{Sin}\left[\frac{x}{2}\right] + 8 \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right) - 160 \operatorname{Sin}\left[\frac{x}{2}\right] \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right)^2 + 24 \operatorname{Cot}\left[\frac{x}{2}\right] \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right)^3 - 84 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{x}{2}\right]\right] \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right)^3 + 84 \operatorname{Log}\left[\operatorname{Sin}\left[\frac{x}{2}\right]\right] \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right)^3 - 24 \left(\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right)^3 \operatorname{Tan}\left[\frac{x}{2}\right] + 3 \operatorname{Cos}\left[\frac{x}{2}\right] \left(1 + \operatorname{Tan}\left[\frac{x}{2}\right]\right)^3\right)$$

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

$$\int \frac{\operatorname{Csc}[x]^4}{(a + a \operatorname{Sin}[x])^2} \, dx$$

Optimal (type 3, 65 leaves, 7 steps):

$$\frac{5 \operatorname{ArcTanh}[\operatorname{Cos}[x]]}{a^2} - \frac{4 \operatorname{Cot}[x]}{a^2} - \frac{\operatorname{Cot}[x]^3}{3 a^2} + \frac{\operatorname{Cot}[x] \operatorname{Csc}[x]}{a^2} - \frac{\operatorname{Cos}[x]}{3 a^2 (1 + \operatorname{Sin}[x])^2} - \frac{13 \operatorname{Cos}[x]}{3 a^2 (1 + \operatorname{Sin}[x])}$$

Result (type 3, 374 leaves):

$$\frac{2\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)}{3\left(a+a\,\text{Sin}[x]\right)^2}-\frac{\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^2}{3\left(a+a\,\text{Sin}[x]\right)^2}+\frac{26\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^3}{3\left(a+a\,\text{Sin}[x]\right)^2}-$$
$$\frac{11\,\text{Cot}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{6\left(a+a\,\text{Sin}[x]\right)^2}+\frac{\text{Csc}\left[\frac{x}{2}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{4\left(a+a\,\text{Sin}[x]\right)^2}-$$
$$\frac{\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{24\left(a+a\,\text{Sin}[x]\right)^2}+\frac{5\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{\left(a+a\,\text{Sin}[x]\right)^2}-$$
$$\frac{5\,\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{\left(a+a\,\text{Sin}[x]\right)^2}-\frac{\text{Sec}\left[\frac{x}{2}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}{4\left(a+a\,\text{Sin}[x]\right)^2}+$$
$$\frac{11\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4\text{Tan}\left[\frac{x}{2}\right]}{6\left(a+a\,\text{Sin}[x]\right)^2}+\frac{\text{Sec}\left[\frac{x}{2}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4\text{Tan}\left[\frac{x}{2}\right]}{24\left(a+a\,\text{Sin}[x]\right)^2}$$

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

$$\int\frac{\text{Csc}[x]}{\left(a+a\,\text{Sin}[x]\right)^3}\,dx$$

Optimal (type 3, 58 leaves, 5 steps):

$$-\frac{\text{ArcTanh}[\text{Cos}[x]]}{a^3}+\frac{\text{Cos}[x]}{5\left(a+a\,\text{Sin}[x]\right)^3}+\frac{7\,\text{Cos}[x]}{15\,a\left(a+a\,\text{Sin}[x]\right)^2}+\frac{22\,\text{Cos}[x]}{15\left(a^3+a^3\,\text{Sin}[x]\right)}$$

Result (type 3, 160 leaves):

$$\left(\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\right.$$
$$\left(-6\,\text{Sin}\left[\frac{x}{2}\right]+3\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)-14\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^2+7\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^3-\right.$$
$$44\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4-15\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5+$$
$$\left.\left.15\,\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5\right)\right)\Big/\left(15\left(a+a\,\text{Sin}[x]\right)^3\right)$$

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

$$\int\frac{\text{Csc}[x]^2}{\left(a+a\,\text{Sin}[x]\right)^3}\,dx$$

Optimal (type 3, 65 leaves, 7 steps):

$$\frac{3\,\text{ArcTanh}[\text{Cos}[x]]}{a^3}-\frac{24\,\text{Cot}[x]}{5\,a^3}+\frac{\text{Cot}[x]}{5\left(a+a\,\text{Sin}[x]\right)^3}+\frac{3\,\text{Cot}[x]}{5\,a\left(a+a\,\text{Sin}[x]\right)^2}+\frac{3\,\text{Cot}[x]}{a^3+a^3\,\text{Sin}[x]}$$

Result (type 3, 206 leaves):

$$\frac{1}{10\,(a+a\,\mathrm{Sin}[x])^3}\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)\left(4\,\mathrm{Sin}\left[\frac{x}{2}\right]-2\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)+16\,\mathrm{Sin}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^2-\right.$$
$$8\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3+76\,\mathrm{Sin}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^4-$$
$$5\,\mathrm{Cot}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5+30\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5-$$
$$\left.30\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5+5\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5\mathrm{Tan}\left[\frac{x}{2}\right]\right)$$

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

$$\int\frac{\mathrm{Csc}[x]^3}{(a+a\,\mathrm{Sin}[x])^3}\,dx$$

Optimal (type 3, 86 leaves, 8 steps):

$$-\frac{13\,\mathrm{ArcTanh}[\mathrm{Cos}[x]]}{2\,a^3}+\frac{152\,\mathrm{Cot}[x]}{15\,a^3}-\frac{13\,\mathrm{Cot}[x]\,\mathrm{Csc}[x]}{2\,a^3}+\frac{\mathrm{Cot}[x]\,\mathrm{Csc}[x]}{5\,(a+a\,\mathrm{Sin}[x])^3}+\frac{11\,\mathrm{Cot}[x]\,\mathrm{Csc}[x]}{15\,a\,(a+a\,\mathrm{Sin}[x])^2}+\frac{76\,\mathrm{Cot}[x]\,\mathrm{Csc}[x]}{15\,(a^3+a^3\,\mathrm{Sin}[x])}$$

Result (type 3, 247 leaves):

$$\frac{1}{120\,a^3\,(1+\mathrm{Sin}[x])^3}\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)\left(-48\,\mathrm{Sin}\left[\frac{x}{2}\right]-15\left(1+\mathrm{Cot}\left[\frac{x}{2}\right]\right)^5\mathrm{Sin}\left[\frac{x}{2}\right]^3+24\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)-\right.$$
$$272\,\mathrm{Sin}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^2+136\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^3-$$
$$1712\,\mathrm{Sin}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^4+180\,\mathrm{Cot}\left[\frac{x}{2}\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5-$$
$$780\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5+780\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5-$$
$$\left.180\left(\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right)^5\mathrm{Tan}\left[\frac{x}{2}\right]+15\,\mathrm{Cos}\left[\frac{x}{2}\right]^3\left(1+\mathrm{Tan}\left[\frac{x}{2}\right]\right)^5\right)$$

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

$$\int\frac{\mathrm{Csc}[x]^4}{(a+a\,\mathrm{Sin}[x])^3}\,dx$$

Optimal (type 3, 103 leaves, 8 steps):

$$\frac{23\,\text{ArcTanh}[\text{Cos}[x]]}{2\,a^3}-\frac{136\,\text{Cot}[x]}{5\,a^3}-\frac{136\,\text{Cot}[x]^3}{15\,a^3}+\frac{23\,\text{Cot}[x]\,\text{Csc}[x]}{2\,a^3}+\frac{\text{Cot}[x]\,\text{Csc}[x]^2}{5\,(a+a\,\text{Sin}[x])^3}+\frac{13\,\text{Cot}[x]\,\text{Csc}[x]^2}{15\,a\,(a+a\,\text{Sin}[x])^2}+\frac{23\,\text{Cot}[x]\,\text{Csc}[x]^2}{3\,(a^3+a^3\,\text{Sin}[x])}$$

Result (type 3, 299 leaves):

$$\frac{1}{120\,a^3\,(1+\text{Sin}[x])^3}\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\left(48\,\text{Sin}\left[\frac{x}{2}\right]-5\,\text{Cos}\left[\frac{x}{2}\right]\left(1+\text{Cot}\left[\frac{x}{2}\right]\right)^5\text{Sin}\left[\frac{x}{2}\right]^2+45\left(1+\text{Cot}\left[\frac{x}{2}\right]\right)^5\text{Sin}\left[\frac{x}{2}\right]^3-\right.$$
$$24\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)+352\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^2-$$
$$176\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^3+2752\,\text{Sin}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4-$$
$$400\,\text{Cot}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5+1380\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5-$$
$$1380\,\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5+400\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^5\text{Tan}\left[\frac{x}{2}\right]-$$
$$\left.45\,\text{Cos}\left[\frac{x}{2}\right]^3\left(1+\text{Tan}\left[\frac{x}{2}\right]\right)^5+5\,\text{Cos}\left[\frac{x}{2}\right]^2\text{Sin}\left[\frac{x}{2}\right]\left(1+\text{Tan}\left[\frac{x}{2}\right]\right)^5\right)$$

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

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

Optimal (type 3, 26 leaves, 1 step):

$$-\frac{2\,a\,\text{Cos}[c+d\,x]}{d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 65 leaves):

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

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

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

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

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

Result (type 3, 94 leaves):

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

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

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

Optimal (type 3, 64 leaves, 3 steps):

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

Result (type 3, 178 leaves):

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

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

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

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

$$-\frac{3\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{4\,d}-\frac{3\,a\,\text{Cot}[c+d\,x]}{4\,d\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{a\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{2\,d\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 249 leaves):

$$\frac{1}{4 d \left(1+\text{Cot}\left[\frac{1}{2} (c+d x)\right]\right) \left(\text{Csc}\left[\frac{1}{4} (c+d x)\right]^2-\text{Sec}\left[\frac{1}{4} (c+d x)\right]^2\right)^2}\text{Csc}\left[\frac{1}{2} (c+d x)\right]^7 \sqrt{a (1+\text{Sin}[c+d x])}\left(-2 \text{Cos}\left[\frac{1}{2} (c+d x)\right]-6 \text{Cos}\left[\frac{3}{2} (c+d x)\right]-3 \text{Log}\left[1+\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+3 \text{Cos}[2 (c+d x)] \text{Log}\left[1+\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+3 \text{Log}\left[1-\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]-3 \text{Cos}[2 (c+d x)] \text{Log}\left[1-\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right]+2 \text{Sin}\left[\frac{1}{2} (c+d x)\right]-6 \text{Sin}\left[\frac{3}{2} (c+d x)\right]\right)$$

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

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

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

$$-\frac{5 \sqrt{a} \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[c+d x]}{\sqrt{a+a \text{Sin}[c+d x]}}\right]}{8 d}-\frac{5 a \text{Cot}[c+d x]}{8 d \sqrt{a+a \text{Sin}[c+d x]}}-\frac{5 a \text{Cot}[c+d x] \text{Csc}[c+d x]}{12 d \sqrt{a+a \text{Sin}[c+d x]}}-\frac{a \text{Cot}[c+d x] \text{Csc}[c+d x]^2}{3 d \sqrt{a+a \text{Sin}[c+d x]}}$$

Result (type 3, 285 leaves):

$$\frac{1}{24 d \left(1+\text{Cot}\left[\frac{1}{2} (c+d x)\right]\right) \left(\text{Csc}\left[\frac{1}{4} (c+d x)\right]^2-\text{Sec}\left[\frac{1}{4} (c+d x)\right]^2\right)^3}\text{Csc}\left[\frac{1}{2} (c+d x)\right]^{10} \sqrt{a (1+\text{Sin}[c+d x])}\left(-84 \text{Cos}\left[\frac{1}{2} (c+d x)\right]-10 \text{Cos}\left[\frac{3}{2} (c+d x)\right]+30 \text{Cos}\left[\frac{5}{2} (c+d x)\right]+84 \text{Sin}\left[\frac{1}{2} (c+d x)\right]-45 \text{Log}\left[1+\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] \text{Sin}[c+d x]+45 \text{Log}\left[1-\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] \text{Sin}[c+d x]-10 \text{Sin}\left[\frac{3}{2} (c+d x)\right]-30 \text{Sin}\left[\frac{5}{2} (c+d x)\right]+15 \text{Log}\left[1+\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] \text{Sin}[3 (c+d x)]-15 \text{Log}\left[1-\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right] \text{Sin}[3 (c+d x)]\right)$$

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

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

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

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

Result (type 3, 97 leaves):

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

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

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

Optimal (type 3, 39 leaves, 2 steps):

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

Result (type 3, 96 leaves):

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

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

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

Optimal (type 3, 40 leaves, 2 steps):

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

Result (type 3, 95 leaves):

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

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

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

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

$$-\frac{3\,a^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{d}-\frac{a^2\,\text{Cot}[c+d\,x]}{d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 180 leaves):

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

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

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

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

$$-\frac{7\,a^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{4\,d}-\frac{7\,a^2\,\text{Cot}[c+d\,x]}{4\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{a^2\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{2\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 250 leaves):

$$\frac{1}{4\,d\,\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(\text{Csc}\left[\frac{1}{4}\,(c+d\,x)\right]^2-\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2\right)^2}\,a\,\text{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^7\,\sqrt{a\,(1+\text{Sin}[c+d\,x])}\,\left(6\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-14\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]-7\,\text{Log}\left[1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+7\,\text{Cos}[2\,(c+d\,x)]\,\text{Log}\left[1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+7\,\text{Log}\left[1-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-7\,\text{Cos}[2\,(c+d\,x)]\,\text{Log}\left[1-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-6\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-14\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)$$

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

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

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

$$-\frac{19\,a^{5/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{4\,d}-\frac{9\,a^3\,\text{Cot}[c+d\,x]}{4\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{a^2\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}{2\,d}$$

Result (type 3, 252 leaves):

$$\frac{1}{4\,d\,\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(\text{Csc}\left[\frac{1}{4}\,(c+d\,x)\right]^2-\text{Sec}\left[\frac{1}{4}\,(c+d\,x)\right]^2\right)^2}$$
$$a^2\,\text{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^7\,\sqrt{a\,(1+\text{Sin}[c+d\,x])}$$
$$\Big(14\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-22\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]-19\,\text{Log}\left[1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$19\,\text{Cos}[2\,(c+d\,x)]\,\text{Log}\left[1+\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$19\,\text{Log}\left[1-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-19\,\text{Cos}[2\,(c+d\,x)]$$
$$\text{Log}\left[1-\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-14\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-22\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\Big)$$

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

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

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

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

Result (type 3, 370 leaves):

$$-\frac{1}{192\, d \left(1+\operatorname{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(\operatorname{Csc}\left[\frac{1}{4}(c+d\,x)\right]^2-\operatorname{Sec}\left[\frac{1}{4}(c+d\,x)\right]^2\right)^4}$$
$$a^2\operatorname{Csc}\left[\frac{1}{2}(c+d\,x)\right]^{13}\sqrt{a\left(1+\operatorname{Sin}[c+d\,x]\right)}$$
$$\left(-1030\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+3102\operatorname{Cos}\left[\frac{3}{2}(c+d\,x)\right]-326\operatorname{Cos}\left[\frac{5}{2}(c+d\,x)\right]-978\operatorname{Cos}\left[\frac{7}{2}(c+d\,x)\right]+\right.$$
$$1467\operatorname{Log}\left[1+\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$1956\operatorname{Cos}[2(c+d\,x)]\operatorname{Log}\left[1+\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$489\operatorname{Cos}[4(c+d\,x)]\operatorname{Log}\left[1+\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$1467\operatorname{Log}\left[1-\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+$$
$$1956\operatorname{Cos}[2(c+d\,x)]\operatorname{Log}\left[1-\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]-$$
$$489\operatorname{Cos}[4(c+d\,x)]\operatorname{Log}\left[1-\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]+1030\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\left.3102\operatorname{Sin}\left[\frac{3}{2}(c+d\,x)\right]+326\operatorname{Sin}\left[\frac{5}{2}(c+d\,x)\right]-978\operatorname{Sin}\left[\frac{7}{2}(c+d\,x)\right]\right)$$

Problem 61: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\operatorname{Sin}[c+d\,x]^3}{\sqrt{a+a\operatorname{Sin}[c+d\,x]}}\,dx$$

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

$$\frac{\sqrt{2}\operatorname{ArcTanh}\left[\frac{\sqrt{a}\operatorname{Cos}[c+d\,x]}{\sqrt{2}\sqrt{a+a\operatorname{Sin}[c+d\,x]}}\right]}{\sqrt{a}\,d}-\frac{28\operatorname{Cos}[c+d\,x]}{15\,d\sqrt{a+a\operatorname{Sin}[c+d\,x]}}-$$
$$\frac{2\operatorname{Cos}[c+d\,x]\operatorname{Sin}[c+d\,x]^2}{5\,d\sqrt{a+a\operatorname{Sin}[c+d\,x]}}+\frac{2\operatorname{Cos}[c+d\,x]\sqrt{a+a\operatorname{Sin}[c+d\,x]}}{15\,a\,d}$$

Result (type 3, 150 leaves):

$$\left(\left(\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\right.$$
$$\left(\left(-60-60\,i\right)(-1)^{3/4}\operatorname{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\operatorname{Tan}\left[\frac{1}{4}(c+d\,x)\right]\right)\right]-\right.$$
$$60\operatorname{Cos}\left[\frac{1}{2}(c+d\,x)\right]+5\operatorname{Cos}\left[\frac{3}{2}(c+d\,x)\right]+3\operatorname{Cos}\left[\frac{5}{2}(c+d\,x)\right]+60\operatorname{Sin}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\left.\left.5\operatorname{Sin}\left[\frac{3}{2}(c+d\,x)\right]-3\operatorname{Sin}\left[\frac{5}{2}(c+d\,x)\right]\right)\right)\Big/\left(30\,d\sqrt{a\left(1+\operatorname{Sin}[c+d\,x]\right)}\right)$$

Problem 62: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 105 leaves, 4 steps):

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

Result (type 3, 105 leaves):

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

Problem 63: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 98 leaves):

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

Problem 64: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 73 leaves):

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

Problem 65: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 84 leaves, 5 steps):

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

Result (type 3, 128 leaves):

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

Problem 66: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Csc}[c+d\,x]^2}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\,dx$$

Optimal (type 3, 109 leaves, 6 steps):

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

Result (type 3, 168 leaves):

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

Problem 67: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{\text{Csc}[c+d x]^3}{\sqrt{a+a \text{Sin}[c+d x]}} \, dx$$

Optimal (type 3, 146 leaves, 7 steps):

$$-\frac{7 \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[c+d x]}{\sqrt{a+a \text{Sin}[c+d x]}}\right]}{4 \sqrt{a} d}+\frac{\sqrt{2} \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[c+d x]}{\sqrt{2} \sqrt{a+a \text{Sin}[c+d x]}}\right]}{\sqrt{a} d}+\frac{\text{Cot}[c+d x]}{4 d \sqrt{a+a \text{Sin}[c+d x]}}-\frac{\text{Cot}[c+d x] \text{Csc}[c+d x]}{2 d \sqrt{a+a \text{Sin}[c+d x]}}$$

Result (type 3, 767 leaves):

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

Problem 68: Result unnecessarily involves imaginary or complex numbers.

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

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

$$\frac{15\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d}+\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^3}{2\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}-\frac{31\,\text{Cos}[c+d\,x]}{5\,a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{9\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^2}{10\,a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}+\frac{13\,\text{Cos}[c+d\,x]\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}{10\,a^2\,d}$$

Result (type 3, 178 leaves):

$$\frac{1}{20\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{3/2}}\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(-55\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-41\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]-3\,\text{Cos}\left[\frac{5}{2}\,(c+d\,x)\right]+\text{Cos}\left[\frac{7}{2}\,(c+d\,x)\right]+55\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-(150+150\,i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(1+\text{Sin}[c+d\,x]\right)-41\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]+3\,\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{7}{2}\,(c+d\,x)\right]\right)$$

Problem 69: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 6 steps):

$$-\frac{11\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d}+\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^2}{2\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}+\frac{13\,\text{Cos}[c+d\,x]}{3\,a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{7\,\text{Cos}[c+d\,x]\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}{6\,a^2\,d}$$

Result (type 3, 156 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(11\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+7\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]+\text{Cos}\left[\frac{5}{2}\,(c+d\,x)\right]-11\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+(33+33\,i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(1+\text{Sin}[c+d\,x]\right)+7\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(6\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{3/2}\right)$$

Problem 70: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 105 leaves, 4 steps):

$$\frac{7\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d}-\frac{\text{Cos}[c+d\,x]}{2\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}-\frac{2\,\text{Cos}[c+d\,x]}{a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 134 leaves):

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

Problem 71: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 108 leaves):

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

Problem 72: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 108 leaves):

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

Problem 73: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 114 leaves, 6 steps):

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

Result (type 3, 223 leaves):

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

Problem 74: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{3\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{a^{3/2}\,d}-\frac{9\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{2\sqrt{2}\,a^{3/2}\,d}+\frac{\text{Cot}[c+d\,x]}{2\,d\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}-\frac{3\,\text{Cot}[c+d\,x]}{2\,a\,d\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 449 leaves):

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

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

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

Optimal (type 3, 186 leaves, 8 steps):

$$-\frac{19\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{4\,a^{3/2}\,d}+\frac{13\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,d}+$$
$$\frac{\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{2\,d\,(a+a\,\text{Sin}[c+d\,x])^{3/2}}+\frac{7\,\text{Cot}[c+d\,x]}{4\,a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{a\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 889 leaves):

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

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

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

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

$$\frac{\text{Csc}\left[\frac{1}{4}(c+d x)\right]^2\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3}{32 d\left(a\left(1+\text{Sin}[c+d x]\right)\right)^{3/2}}-$$

$$\left(19\,\text{Log}\left[1+\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3\right)\Big/$$
$$\left(8 d\left(a\left(1+\text{Sin}[c+d x]\right)\right)^{3/2}\right)+$$

$$\left(19\,\text{Log}\left[1-\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3\right)\Big/$$

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

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

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

$$\frac{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3}{16 d\left(\text{Cos}\left[\frac{1}{4}(c+d x)\right]+\text{Sin}\left[\frac{1}{4}(c+d x)\right]\right)^2\left(a\left(1+\text{Sin}[c+d x]\right)\right)^{3/2}}+$$

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

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

Problem 76: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 221 leaves, 8 steps):

$$\frac{283 \operatorname{ArcTanh}\left[\frac{\sqrt{a} \operatorname{Cos}[c+d x]}{\sqrt{2} \sqrt{a+a \operatorname{Sin}[c+d x]}}\right]}{16 \sqrt{2} a^{5/2} d}+\frac{\operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]^4}{4 d (a+a \operatorname{Sin}[c+d x])^{5/2}}+\frac{21 \operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]^3}{16 a d (a+a \operatorname{Sin}[c+d x])^{3/2}}-$$
$$\frac{1729 \operatorname{Cos}[c+d x]}{120 a^2 d \sqrt{a+a \operatorname{Sin}[c+d x]}}-\frac{157 \operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]^2}{80 a^2 d \sqrt{a+a \operatorname{Sin}[c+d x]}}+\frac{787 \operatorname{Cos}[c+d x] \sqrt{a+a \operatorname{Sin}[c+d x]}}{240 a^3 d}$$

Result (type 3, 221 leaves):

$$-\frac{1}{480 d (a (1+\operatorname{Sin}[c+d x]))^{5/2}}\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)$$
$$\left(2547 \operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+3603 \operatorname{Cos}\left[\frac{3}{2}(c+d x)\right]-872 \operatorname{Cos}\left[\frac{5}{2}(c+d x)\right]+52 \operatorname{Cos}\left[\frac{7}{2}(c+d x)\right]+\right.$$
$$12 \operatorname{Cos}\left[\frac{9}{2}(c+d x)\right]-2547 \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]+(8490+8490 i)(-1)^{3/4}$$
$$\operatorname{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\operatorname{Tan}\left[\frac{1}{4}(c+d x)\right]\right)\right]\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4+$$
$$\left.3603 \operatorname{Sin}\left[\frac{3}{2}(c+d x)\right]+872 \operatorname{Sin}\left[\frac{5}{2}(c+d x)\right]+52 \operatorname{Sin}\left[\frac{7}{2}(c+d x)\right]-12 \operatorname{Sin}\left[\frac{9}{2}(c+d x)\right]\right)$$

Problem 77: Result unnecessarily involves imaginary or complex numbers.

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

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

$$-\frac{163 \operatorname{ArcTanh}\left[\frac{\sqrt{a} \operatorname{Cos}[c+d x]}{\sqrt{2} \sqrt{a+a \operatorname{Sin}[c+d x]}}\right]}{16 \sqrt{2} a^{5/2} d}+\frac{\operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]^3}{4 d (a+a \operatorname{Sin}[c+d x])^{5/2}}+$$
$$\frac{17 \operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]^2}{16 a d (a+a \operatorname{Sin}[c+d x])^{3/2}}+\frac{197 \operatorname{Cos}[c+d x]}{24 a^2 d \sqrt{a+a \operatorname{Sin}[c+d x]}}-\frac{95 \operatorname{Cos}[c+d x] \sqrt{a+a \operatorname{Sin}[c+d x]}}{48 a^3 d}$$

Result (type 3, 197 leaves):

$$\frac{1}{96\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{5/2}}$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(279\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+399\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]-\right.$$
$$88\,\text{Cos}\left[\frac{5}{2}\,(c+d\,x)\right]+8\,\text{Cos}\left[\frac{7}{2}\,(c+d\,x)\right]-279\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+(978+978\,\mathbb{i})\,(-1)^{3/4}$$
$$\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\,(-1)^{3/4}\,\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4+$$
$$\left.399\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]+88\,\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]+8\,\text{Sin}\left[\frac{7}{2}\,(c+d\,x)\right]\right)$$

Problem 78: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 145 leaves, 6 steps):

$$\frac{75\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,d}+\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^2}{4\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{5/2}}-$$
$$\frac{13\,\text{Cos}[c+d\,x]}{16\,a\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}-\frac{9\,\text{Cos}[c+d\,x]}{4\,a^2\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 173 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.$$
$$\left(-45\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-69\,\text{Cos}\left[\frac{3}{2}\,(c+d\,x)\right]+16\,\text{Cos}\left[\frac{5}{2}\,(c+d\,x)\right]+45\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-\right.$$
$$(150+150\,\mathbb{i})\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\,(-1)^{3/4}\,\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4-69\,\text{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]-$$
$$\left.\left.16\,\text{Sin}\left[\frac{5}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(32\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{5/2}\right)$$

Problem 79: Result unnecessarily involves imaginary or complex numbers.

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

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

$$-\frac{19\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,d}-\frac{\text{Cos}[c+d\,x]}{4\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{5/2}}+\frac{13\,\text{Cos}[c+d\,x]}{16\,a\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}$$

Result (type 3, 196 leaves):

$$\frac{1}{16\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{5/2}}\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(8\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-4\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)-26\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2+13\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3+(19+19\,i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4\right)$$

Problem 80: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 196 leaves):

$$\frac{1}{16\,d\,\left(a\,\left(1+\text{Sin}[c+d\,x]\right)\right)^{5/2}}\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(-8\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+4\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+10\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2-5\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3+(5+5\,i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4\right)$$

Problem 81: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 196 leaves):

$$\frac{1}{16\,d\,\left(a\,\left(1+\mathrm{Sin}[c+d\,x]\right)\right)^{5/2}}\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(8\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-4\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+6\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2-3\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3+(3+3\,i)\,(-1)^{3/4}\,\mathrm{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\mathrm{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4\right)$$

Problem 82: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Csc}[c+d\,x]}{\left(a+a\,\mathrm{Sin}[c+d\,x]\right)^{5/2}}\,dx$$

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

$$-\frac{2\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\mathrm{Cos}[c+d\,x]}{\sqrt{a+a\,\mathrm{Sin}[c+d\,x]}}\right]}{a^{5/2}\,d}+\frac{43\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\mathrm{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sin}[c+d\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,d}+\frac{\mathrm{Cos}[c+d\,x]}{4\,d\,\left(a+a\,\mathrm{Sin}[c+d\,x]\right)^{5/2}}+\frac{11\,\mathrm{Cos}[c+d\,x]}{16\,a\,d\,\left(a+a\,\mathrm{Sin}[c+d\,x]\right)^{3/2}}$$

Result (type 3, 296 leaves):

$$\frac{1}{16\,d\,\left(a\,\left(1+\mathrm{Sin}[c+d\,x]\right)\right)^{5/2}}\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(-8\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+4\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)-22\,\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2+11\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3-(43+43\,i)\,(-1)^{3/4}\,\mathrm{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\mathrm{Tan}\left[\frac{1}{4}\,(c+d\,x)\right]\right)\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4-16\,\mathrm{Log}\left[1+\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4+16\,\mathrm{Log}\left[1-\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\left(\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4\right)$$

Problem 83: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 174 leaves, 8 steps):

$$\frac{5\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\mathrm{Cos}[c+d x]}{\sqrt{a+a\,\mathrm{Sin}[c+d x]}}\right]}{a^{5/2}\, d}-\frac{115\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\mathrm{Cos}[c+d x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sin}[c+d x]}}\right]}{16\sqrt{2}\, a^{5/2}\, d}+\frac{\mathrm{Cot}[c+d x]}{4 d\,(a+a\,\mathrm{Sin}[c+d x])^{5/2}}+\frac{15\,\mathrm{Cot}[c+d x]}{16 a d\,(a+a\,\mathrm{Sin}[c+d x])^{3/2}}-\frac{35\,\mathrm{Cot}[c+d x]}{16 a^2 d\sqrt{a+a\,\mathrm{Sin}[c+d x]}}$$

Result (type 3, 509 leaves):

$$\frac{1}{16 d\,(a\,(1+\mathrm{Sin}[c+d x]))^{5/2}}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)$$
$$\left(8\,\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]-4\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)+38\,\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right.$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2-19\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3+$$
$$8\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4+(115+115\,i)\,(-1)^{3/4}$$
$$\mathrm{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\mathrm{Tan}\left[\frac{1}{4}(c+d x)\right]\right)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4-$$
$$4\,\mathrm{Cot}\left[\frac{1}{4}(c+d x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4+$$
$$40\,\mathrm{Log}\left[1+\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4-$$
$$40\,\mathrm{Log}\left[1-\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4+$$
$$\frac{8\,\mathrm{Sin}\left[\frac{1}{4}(c+d x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}{\mathrm{Cos}\left[\frac{1}{4}(c+d x)\right]-\mathrm{Sin}\left[\frac{1}{4}(c+d x)\right]}-$$
$$\frac{8\,\mathrm{Sin}\left[\frac{1}{4}(c+d x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}{\mathrm{Cos}\left[\frac{1}{4}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{4}(c+d x)\right]}-$$
$$\left.4\left(\mathrm{Cos}\left[\frac{1}{2}(c+d x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4\mathrm{Tan}\left[\frac{1}{4}(c+d x)\right]\right)$$

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

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

Optimal (type 3, 224 leaves, 9 steps):

$$-\frac{39\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{4\,a^{5/2}\,d}+\frac{219\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[c+d\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,d}+\frac{\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{4\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{5/2}}+$$
$$\frac{19\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{16\,a\,d\,\left(a+a\,\text{Sin}[c+d\,x]\right)^{3/2}}+\frac{63\,\text{Cot}[c+d\,x]}{16\,a^2\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}-\frac{31\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{16\,a^2\,d\,\sqrt{a+a\,\text{Sin}[c+d\,x]}}$$

Result (type 3, 680 leaves):

$$\frac{1}{32\, d\, \left(a\, \left(1+\text{Sin}[c+d\, x]\right)\right)^{5/2}}\left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)$$

$$\left(-16\, \text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]+8\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)-108\, \text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^2+54\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^3-$$

$$40\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4-(438+438\, i)\, (-1)^{3/4}$$

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

$$20\, \text{Cot}\left[\frac{1}{4}\, (c+d\, x)\right]\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4-$$

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

$$156\, \text{Log}\left[1+\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]-\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right]\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4+$$

$$156\, \text{Log}\left[1-\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right]\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4+$$

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

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

$$\frac{40\, \text{Sin}\left[\frac{1}{4}\, (c+d\, x)\right]\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4}{\text{Cos}\left[\frac{1}{4}\, (c+d\, x)\right]-\text{Sin}\left[\frac{1}{4}\, (c+d\, x)\right]}-$$

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

$$\frac{40\, \text{Sin}\left[\frac{1}{4}\, (c+d\, x)\right]\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4}{\text{Cos}\left[\frac{1}{4}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{4}\, (c+d\, x)\right]}+$$

$$\left.20\, \left(\text{Cos}\left[\frac{1}{2}\, (c+d\, x)\right]+\text{Sin}\left[\frac{1}{2}\, (c+d\, x)\right]\right)^4\, \text{Tan}\left[\frac{1}{4}\, (c+d\, x)\right]\right)$$

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

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

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

$$-\frac{2\sqrt{a}\,\text{ArcSin}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{f}$$

Result (type 3, 143 leaves):

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

Problem 86: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{2\sqrt{a}\,\text{ArcSin}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{a-a\,\text{Sin}[e+f\,x]}}\right]}{f}$$

Result (type 3, 143 leaves):

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

Problem 87: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Sin}[x]}\,\sqrt{1+\text{Sin}[x]}}\,dx$$

Optimal (type 3, 17 leaves, 2 steps):

$$-\sqrt{2}\,\text{ArcSin}\left[\frac{\text{Cos}[x]}{1+\text{Sin}[x]}\right]$$

Result (type 4, 123 leaves):

$$\left(2\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[1-\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[1+\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]\right)\text{Sec}\left[\frac{x}{4}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\sqrt{\text{Sin}[x]}\right)\Big/\left(\sqrt{1-\text{Cot}\left[\frac{x}{4}\right]^2}\sqrt{1+\text{Sin}[x]}\ \text{Tan}\left[\frac{x}{4}\right]^{3/2}\right)$$

Problem 88: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{\text{Sin}[x]}\ \sqrt{a+a\,\text{Sin}[x]}}\,dx$$

Optimal (type 3, 42 leaves, 2 steps):

$$-\frac{\sqrt{2}\ \text{ArcTan}\left[\frac{\sqrt{a}\ \text{Cos}[x]}{\sqrt{2}\ \sqrt{\text{Sin}[x]}\ \sqrt{a+a\,\text{Sin}[x]}}\right]}{\sqrt{a}}$$

Result (type 4, 125 leaves):

$$\left(2\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[1-\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[1+\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]\right)\text{Sec}\left[\frac{x}{4}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\sqrt{\text{Sin}[x]}\right)\Big/\left(\sqrt{1-\text{Cot}\left[\frac{x}{4}\right]^2}\sqrt{a\left(1+\text{Sin}[x]\right)}\ \text{Tan}\left[\frac{x}{4}\right]^{3/2}\right)$$

Problem 89: Result unnecessarily involves higher level functions and more than

twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{1-\text{Sin}[x]}\ \sqrt{\text{Sin}[x]}}\,dx$$

Optimal (type 3, 31 leaves, 2 steps):

$$\sqrt{2}\ \text{ArcTanh}\left[\frac{\text{Cos}[x]}{\sqrt{2}\ \sqrt{1-\text{Sin}[x]}\ \sqrt{\text{Sin}[x]}}\right]$$

Result (type 4, 125 leaves):

$$\left(2\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[-1-\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[-1+\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]\right)\text{Sec}\left[\frac{x}{4}\right]^2\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)\text{Sin}[x]\right)\Big/\left(\sqrt{1-\text{Cot}\left[\frac{x}{4}\right]^2}\ \sqrt{-(-1+\text{Sin}[x])\ \text{Sin}[x]}\ \text{Tan}\left[\frac{x}{4}\right]^{3/2}\right)$$

Problem 90: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Sin}[x]}\ \sqrt{a-a\,\text{Sin}[x]}}\,dx$$

Optimal (type 3, 42 leaves, 2 steps):

$$\frac{\sqrt{2}\ \text{ArcTanh}\left[\frac{\sqrt{a}\ \text{Cos}[x]}{\sqrt{2}\ \sqrt{\text{Sin}[x]}\ \sqrt{a-a\,\text{Sin}[x]}}\right]}{\sqrt{a}}$$

Result (type 4, 128 leaves):

$$\left(2\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\text{EllipticPi}\left[-1-\sqrt{2},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{4}\right]}}\right],-1\right]+\right.\right.$$

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

$$\left.\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)\sqrt{\text{Sin}[x]}\right)\Big/\left(\sqrt{1-\text{Cot}\left[\frac{x}{4}\right]^2}\,\sqrt{a-a\,\text{Sin}[x]}\;\text{Tan}\left[\frac{x}{4}\right]^{3/2}\right)$$

Problem 91: Mathematica result simpler than optimal antiderivative, IF it can be verified!

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

Optimal (type 5, 184 leaves, 5 steps):

$$\left(4\,\text{Cos}[c+d\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{6},\frac{1}{2},\frac{7}{6},\text{Sin}[c+d\,x]^2\right]\text{Sin}[c+d\,x]^{1/3}\right)\Big/$$
$$\left(9\,a^2\,d\,\sqrt{\text{Cos}[c+d\,x]^2}\right)-$$
$$\left(\text{Cos}[c+d\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{5}{3},\text{Sin}[c+d\,x]^2\right]\text{Sin}[c+d\,x]^{4/3}\right)\Big/$$
$$\left(36\,a^2\,d\,\sqrt{\text{Cos}[c+d\,x]^2}\right)-\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^{1/3}}{9\,a^2\,d\,(1+\text{Sin}[c+d\,x])}-\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^{1/3}}{3\,d\,(a+a\,\text{Sin}[c+d\,x])^2}$$

Result (type 4, 4139 leaves):

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

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

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

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

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

$$\left((-1)^{1/6}\left(-\mathrm{i}\sqrt{3}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d x]^{2/3}}}{3^{1/4}}\right],(-1)^{1/3}\right]+\right.\right.$$

$$\left.(-1)^{1/3}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d x]^{2/3}}}{3^{1/4}}\right],(-1)^{1/3}\right]\right)$$

$$\sqrt{(-1)^{5/6}\left(-1+\text{Sin}[c+d x]^{2/3}\right)}\ \text{Sin}[c+d x]^{1/3}\sqrt{1+\text{Sin}[c+d x]^{2/3}+\text{Sin}[c+d x]^{4/3}}\ -$$

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

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

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

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

$$\left(27\,d\,\text{Sin}[c+d x]^{2/3}\,(a+a\,\text{Sin}[c+d x])^2\left(\frac{\text{Cos}[c+d x]}{3\,\text{Sin}[c+d x]^{2/3}}+\right.\right.$$

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

$$\left((-1)^{1/6}\left(-\mathrm{i}\sqrt{3}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d x]^{2/3}}}{3^{1/4}}\right],(-1)^{1/3}\right]+\right.\right.$$

$$\left.(-1)^{1/3}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d x]^{2/3}}}{3^{1/4}}\right],(-1)^{1/3}\right]\right)$$

$$\sqrt{(-1)^{5/6}\left(-1+\text{Sin}[c+d x]^{2/3}\right)}\ \text{Sin}[c+d x]^{1/3}\sqrt{1+\text{Sin}[c+d x]^{2/3}+\text{Sin}[c+d x]^{4/3}}\ -$$

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

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

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

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

$$\frac{1}{3\times 3^{1/4}\,\text{Sin}[c+d\,x]^{4/3}\sqrt{1-\text{Sin}[c+d\,x]^2}}\,\text{Cos}[c+d\,x]$$

$$\left((-1)^{1/6}\left(-\mathrm{i}\sqrt{3}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]+\right.\right.$$

$$\left.\left.(-1)^{1/3}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]\right)\right.$$

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

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

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

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

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

$$\frac{1}{3^{1/4}\,\text{Sin}[c+d\,x]^{1/3}\sqrt{1-\text{Sin}[c+d\,x]^2}}$$

$$\left(\left((-1)^{1/6}\left(-\mathrm{i}\sqrt{3}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]+\right.\right.\right.$$

$$\left.(-1)^{1/3}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\text{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]\right)$$

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

$$\left.\mathrm{Sin}[c+d\,x]^{1/3}\right)\Big/\left(2\sqrt{1+\mathrm{Sin}[c+d\,x]^{2/3}+\mathrm{Sin}[c+d\,x]^{4/3}}\right)-$$

$$\left(\mathrm{Cos}[c+d\,x]\left(-\mathrm{i}\sqrt{3}\ \mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]+\right.\right.$$

$$\left.(-1)^{1/3}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\ (-1)^{1/3}\right]\right)$$

$$\left.\sqrt{1+\mathrm{Sin}[c+d\,x]^{2/3}+\mathrm{Sin}[c+d\,x]^{4/3}}\right)\Big/\left(3\sqrt{(-1)^{5/6}\left(-1+\mathrm{Sin}[c+d\,x]^{2/3}\right)}\right)+$$

$$\left((-1)^{1/6}\,\mathrm{Cos}[c+d\,x]\left(-\mathrm{i}\sqrt{3}\ \mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\right.\right.\right.$$

$$(-1)^{1/3}\Big]+(-1)^{1/3}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}}{3^{1/4}}\right],\right.$$

$$\left.\left.(-1)^{1/3}\right]\right)\sqrt{(-1)^{5/6}\left(-1+\mathrm{Sin}[c+d\,x]^{2/3}\right)}$$

$$\left.\sqrt{1+\mathrm{Sin}[c+d\,x]^{2/3}+\mathrm{Sin}[c+d\,x]^{4/3}}\right)\Big/\left(3\,\mathrm{Sin}[c+d\,x]^{2/3}\right)+$$

$$(-1)^{1/6}\left(-\left(\left((-1)^{5/6}\,\mathrm{Cos}[c+d\,x]\right)\Big/\left(3\times3^{1/4}\sqrt{1-\frac{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}{\sqrt{3}}}\right.\right.\right.$$

$$\sqrt{1-\frac{(-1)^{1/3}\left(-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}\right)}{\sqrt{3}}}$$

$$\left.\left.\sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}\ \mathrm{Sin}[c+d\,x]^{1/3}\right)\right)-$$

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

$$\left.\left.\sqrt{1-\frac{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}{\sqrt{3}}}\ \sqrt{-(-1)^{5/6}-\mathrm{i}\,\mathrm{Sin}[c+d\,x]^{2/3}}\ \mathrm{Sin}[c+d\,x]^{1/3}\right)\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(2\,\bigg(-\bigg(\Big(2\,(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Cos}[c+d\,x]\,\Big(1-(-1)^{1/3}\,\big(-1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)\Big)\Big/$$

$$\Big(3\,\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2\,\mathrm{Sin}[c+d\,x]^{1/3}\Big)\bigg)-$$

$$\Big(2\,(-1)^{1/3}\,\big(-1+\sqrt{3}\big)\,\mathrm{Cos}[c+d\,x]\Big)\Big/\Big(3\,\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)$$

$$\mathrm{Sin}[c+d\,x]^{1/3}\Big)\bigg)\,\Big(1+(-1)^{1/3}\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)$$

$$\mathrm{Sin}[c+d\,x]^{2/3}\,\sqrt{\frac{1-(-1)^{1/3}\,\mathrm{Sin}[c+d\,x]^{2/3}+(-1)^{2/3}\,\mathrm{Sin}[c+d\,x]^{4/3}}{\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}}\Bigg)\Bigg/$$

$$\left(\sqrt{\left(1-\frac{1}{4}\,\big(2+\sqrt{3}\big)\,\left(1-\frac{\Big(1-(-1)^{1/3}\,\big(-1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}{\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}\right)\right)}\right.$$

$$\sqrt{1-\frac{\Big(1-(-1)^{1/3}\,\big(-1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}{\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}}$$

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

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

$$\Big(1+(-1)^{1/3}\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)\,\mathrm{Sin}[c+d\,x]^{2/3}$$

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

$$\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2-\Big(4\,(-1)^{1/3}\,\big(1+\sqrt{3}\big)$$

$$\mathrm{Cos}[c+d\,x]\,\Big(1-(-1)^{1/3}\,\mathrm{Sin}[c+d\,x]^{2/3}+(-1)^{2/3}\,\mathrm{Sin}[c+d\,x]^{4/3}\Big)\Big)\Big/$$

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

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

$$\left.\sqrt{\frac{1-(-1)^{1/3}\,\mathrm{Sin}[c+d\,x]^{2/3}+(-1)^{2/3}\,\mathrm{Sin}[c+d\,x]^{4/3}}{\Big(1+(-1)^{1/3}\,\big(1+\sqrt{3}\big)\,\mathrm{Sin}[c+d\,x]^{2/3}\Big)^2}}\right)\Bigg)\Bigg)\Bigg)$$

Problem 96: Unable to integrate problem.

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

Optimal (type 6, 77 leaves, 4 steps):

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

Result (type 8, 23 leaves):

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

Problem 97: Mathematica result simpler than optimal antiderivative, IF it can be verified!

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

Optimal (type 6, 77 leaves, 4 steps):

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

Result (type 5, 143 leaves):

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

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

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

Optimal (type 5, 162 leaves, 6 steps):

$$-\left(\left(388\times 2^{5/6}\,a\,\text{Cos}[c+d\,x]\,\text{Hypergeometric2F1}\left[-\frac{5}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[c+d\,x])\right]\right.\right.$$
$$\left.\left.(a+a\,\text{Sin}[c+d\,x])^{1/3}\right)\Big/\left(455\,d\,(1+\text{Sin}[c+d\,x])^{5/6}\right)\right)-$$
$$\frac{72\,\text{Cos}[c+d\,x]\,(a+a\,\text{Sin}[c+d\,x])^{4/3}}{455\,d}-\frac{3\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]^2\,(a+a\,\text{Sin}[c+d\,x])^{4/3}}{13\,d}-$$
$$\frac{6\,\text{Cos}[c+d\,x]\,(a+a\,\text{Sin}[c+d\,x])^{7/3}}{65\,a\,d}$$

Result (type 5, 346 leaves):

$$\frac{1}{91\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^3}$$
$$(a\,(1+\text{Sin}[c+d\,x]))^{4/3}\left(-\frac{1}{40\,\left(1+i\,e^{-i\,(c+d\,x)}\right)^{2/3}\sqrt{1-\text{Sin}[c+d\,x]}}\right.$$
$$291\,(-1)^{3/4}\,e^{-\frac{3}{2}i\,(c+d\,x)}\,\left(i+e^{i\,(c+d\,x)}\right)\left(-20\,e^{i\,(c+d\,x)}\sqrt{\text{Cos}\left[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\right]^2}\right.$$
$$\text{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{3},\frac{2}{3},-i\,e^{-i\,(c+d\,x)}\right]+2\,\left(1+i\,e^{-i\,(c+d\,x)}\right)^{2/3}$$
$$\left(1+e^{2\,i\,(c+d\,x)}\right)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\text{Sin}\left[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\right]^2\right]-$$
$$\left.5\,i\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},-i\,e^{-i\,(c+d\,x)}\right]\sqrt{2-2\,\text{Sin}[c+d\,x]}\right)-$$
$$\frac{3}{40}\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,(-1940+790\,\text{Cos}[c+d\,x]-$$
$$\left.98\,\text{Cos}[3\,(c+d\,x)]+278\,\text{Sin}[2\,(c+d\,x)]-35\,\text{Sin}[4\,(c+d\,x)])\right)$$

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

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

Optimal (type 5, 127 leaves, 4 steps):

$$-\left(\left(37\times 2^{5/6}\,a\,\mathrm{Cos}[c+d\,x]\,\mathrm{Hypergeometric2F1}\left[-\frac{5}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sin}[c+d\,x])\right]\right.\right.$$
$$\left.\left.(a+a\,\mathrm{Sin}[c+d\,x])^{1/3}\right)\Big/\left(35\,d\,(1+\mathrm{Sin}[c+d\,x])^{5/6}\right)\right)+$$
$$\frac{9\,\mathrm{Cos}[c+d\,x]\,(a+a\,\mathrm{Sin}[c+d\,x])^{4/3}}{70\,d}-\frac{3\,\mathrm{Cos}[c+d\,x]\,(a+a\,\mathrm{Sin}[c+d\,x])^{7/3}}{10\,a\,d}$$

Result (type 5, 336 leaves):

$$\frac{1}{28\,d\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}$$
$$(a\,(1+\mathrm{Sin}[c+d\,x]))^{4/3}\left(-\frac{1}{40\,\left(1+i\,e^{-i\,(c+d\,x)}\right)^{2/3}\sqrt{1-\mathrm{Sin}[c+d\,x]}}\right.$$
$$111\,(-1)^{3/4}\,e^{-\frac{3}{2}i\,(c+d\,x)}\left(i+e^{i\,(c+d\,x)}\right)\left(-20\,e^{i\,(c+d\,x)}\sqrt{\mathrm{Cos}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2}\right.$$
$$\mathrm{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{3},\frac{2}{3},-i\,e^{-i\,(c+d\,x)}\right]+2\left(1+i\,e^{-i\,(c+d\,x)}\right)^{2/3}$$
$$\left(1+e^{2\,i\,(c+d\,x)}\right)\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\mathrm{Sin}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2\right]-$$
$$\left.5\,i\,\mathrm{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},-i\,e^{-i\,(c+d\,x)}\right]\sqrt{2-2\,\mathrm{Sin}[c+d\,x]}\right)-$$
$$\frac{3}{10}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(-185+60\,\mathrm{Cos}[c+d\,x]-\right.$$
$$\left.\left.7\,\mathrm{Cos}[3\,(c+d\,x)]+22\,\mathrm{Sin}[2\,(c+d\,x)]\right)\right)$$

Problem 100: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$-\left(\left(8\times 2^{5/6}\,a\,\mathrm{Cos}[c+d\,x]\,\mathrm{Hypergeometric2F1}\left[-\frac{5}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sin}[c+d\,x])\right]\right.\right.$$
$$\left.\left.(a+a\,\mathrm{Sin}[c+d\,x])^{1/3}\right)\Big/\left(7\,d\,(1+\mathrm{Sin}[c+d\,x])^{5/6}\right)\right)-\frac{3\,\mathrm{Cos}[c+d\,x]\,(a+a\,\mathrm{Sin}[c+d\,x])^{4/3}}{7\,d}$$

Result (type 5, 324 leaves):

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

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

$$3\,(-1)^{3/4}\,e^{-\frac{3}{2}i\,(c+d\,x)}\left(i+e^{i\,(c+d\,x)}\right)\left(-20\,e^{i\,(c+d\,x)}\sqrt{\text{Cos}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2}\right.$$

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

$$\left(1+e^{2\,i\,(c+d\,x)}\right)\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\text{Sin}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2\right]-$$

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

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

Problem 101: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 67 leaves, 2 steps):

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

Result (type 5, 314 leaves):

$$\frac{1}{2\,d\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}\left(-\frac{3}{2}\left(-5+\text{Cos}[c+d\,x]\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-\frac{1}{8\left(1+i\,e^{-i(c+d\,x)}\right)^{2/3}\sqrt{1-\text{Sin}[c+d\,x]}}\,3\,(-1)^{3/4}\,e^{-\frac{3}{2}i(c+d\,x)}\left(i+e^{i(c+d\,x)}\right)\left(-20\,e^{i(c+d\,x)}\sqrt{\text{Cos}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2}\,\text{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{3},\frac{2}{3},-i\,e^{-i(c+d\,x)}\right]+2\left(1+i\,e^{-i(c+d\,x)}\right)^{2/3}\left(1+e^{2i(c+d\,x)}\right)\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\text{Sin}\left[\frac{1}{4}(2\,c+\pi+2\,d\,x)\right]^2\right]-5\,i\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},-i\,e^{-i(c+d\,x)}\right]\sqrt{2-2\,\text{Sin}[c+d\,x]}\right)\right)\left(a\left(1+\text{Sin}[c+d\,x]\right)\right)^{4/3}$$

Problem 102: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 6, 78 leaves, 4 steps):

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

Result (type 6, 9193 leaves):

$$\frac{3\left(a\left(1+\text{Sin}[c+d\,x]\right)\right)^{4/3}}{d\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}-\left((120+120\,i)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\left(a\left(1+\text{Sin}[c+d\,x]\right)\right)^{4/3}\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left((5+5\,i)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\right.\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+\text{i}\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$
$$\left.\left.\left.\left.\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\right)\right)\Big/$$
$$\left(d\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^3\left(-400\,\text{i}\right.\right.$$
$$\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]^2$$
$$\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]-\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]^3+8$$
$$\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+\right.$$
$$\text{i}\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$
$$\left.\left.\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\right)^2\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2+$$
$$5\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left(-5\left(2\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+\text{i}\,\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]-2\,\text{AppellF1}\left[\frac{8}{3},\right.$$
$$\left.\left.\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\right)$$
$$\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2+\left(2+2\,\text{i}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left(-2+\text{Cos}\left[c+d\,x\right]+\text{Cos}\left[2\left(c+d\,x\right)\right]-3\,\text{Sin}\left[c+d\,x\right]\right)-\left(2-2\,\text{i}\right)\text{AppellF1}\left[\frac{5}{3},\right.$$
$$\left.\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left.\left.\left.\left(-2+\text{Cos}\left[c+d\,x\right]+\text{Cos}\left[2\left(c+d\,x\right)\right]-3\,\text{Sin}\left[c+d\,x\right]\right)\right)\right)\right)-$$
$$\left(\left(120+120\,\text{i}\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]^4\text{Csc}\left[c+d\,x\right]$$
$$\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$
$$\left(a\left(1+\text{Sin}\left[c+d\,x\right]\right)\right)^{4/3}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)$$
$$\left(\left(5+5\,i\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\right.\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+$$
$$\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+\right.$$
$$i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$
$$\left.\left.\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right)\Big/$$
$$\left(d\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^3\left(-8\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\right.\right.\right.\right.$$
$$\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\right.$$
$$\left.\left.\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\right)^2$$
$$\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2+5\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left(5\left(2\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]-2\,\text{AppellF1}\left[\frac{8}{3},\right.$$
$$\left.\left.\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\right)$$
$$\left(\text{Cos}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^2+\left(2+2\,i\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left(2+\text{Cos}\left[c+d\,x\right]-\text{Cos}\left[2\left(c+d\,x\right)\right]+3\,\text{Sin}\left[c+d\,x\right]\right)-\left(2-2\,i\right)\text{AppellF1}\left[\frac{5}{3},\right.$$
$$\left.\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]$$
$$\left.\left(2+\text{Cos}\left[c+d\,x\right]-\text{Cos}\left[2\left(c+d\,x\right)\right]+3\,\text{Sin}\left[c+d\,x\right]\right)\right)-50\,i$$
$$\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]^2$$
$$\left.\left.\left(3+4\,\text{Cos}\left[c+d\,x\right]+\text{Cos}\left[2\left(c+d\,x\right)\right]-2\,\text{Sin}\left[c+d\,x\right]-\text{Sin}\left[2\left(c+d\,x\right)\right]\right)\right)\right)-$$

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

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

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

$$\left(2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$
$$\left.\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\right)$$
$$\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right]$$
$$\left(i+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(\frac{(1+i)\left(-i+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)^{1/3}\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$
$$(5+5\,i)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\left(2^{2/3}\,\text{Hypergeometric2F1}\left[\right.\right.$$
$$\left.\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right]\left(i+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$
$$\left.\left.\left.\left(\frac{(1+i)\left(-i+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}\right)^{1/3}-(1-i)\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\Big/$$
$$\left(\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]+$$

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

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

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

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

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

$$\left(2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.\right.$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$

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

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

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

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

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

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

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

$$\Bigg(\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg(\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$

$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+$$

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

$$\left.\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/\left(1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Bigg)\Bigg)\Bigg)+$$

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

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

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

$$\Bigg(2^{2/3}\Bigg(\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$

$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\Bigg)$$

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

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

$$(5+5\,i)\,\text{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),\Big(\frac{1}{2}-\frac{i}{2}\Big)$$

$$\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\,\Bigg(2^{2/3}\,\text{Hypergeometric2F1}\Big[\frac{1}{3},$$

$$\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}{2+2\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}\Big]\Big(i+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)$$

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

$$\Bigg(\Big(1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big(\text{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),$$

$$\Big(\frac{1}{2}-\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),\Big(\frac{1}{2}-\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]+$$

$$\Big((5+5\,i)\,\text{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),\Big(\frac{1}{2}-\frac{i}{2}\Big)$$

$$\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big/\Big(1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big)\Bigg)+$$

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

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

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

$$\Bigg(\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Bigg(2^{2/3}\Big(\text{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),$$

$$\Big(\frac{1}{2}-\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\Big(\frac{1}{2}+\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big),\Big(\frac{1}{2}-\frac{i}{2}\Big)\Big(1+\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big]\Big)$$

$$\text{Hypergeometric2F1}\Big[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}{2+2\,\text{Tan}\big[\frac{1}{2}(c+d\,x)\big]}\Big]\Big(i+\text{Tan}\Big[$$

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

$$\left(5+5\,\mathbb{i}\right)\mathrm{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Bigg(2^{2/3}\,\mathrm{Hypergeometric2F1}\Big[$$

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

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

$$\Bigg(2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)^{2}\Bigg(\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+\mathbb{i}\,\mathrm{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]+$$

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

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

$$\Bigg(\Bigg(\left(-\frac{5}{24}+\frac{5\,\mathbb{i}}{24}\right)\mathrm{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\mathrm{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}-\left(\frac{5}{96}+\frac{5\,\mathbb{i}}{96}\right)\mathrm{AppellF1}\Big[\frac{8}{3},$$

$$\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]$$

$$\mathrm{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}+\mathbb{i}\,\Bigg(\left(-\frac{5}{96}+\frac{5\,\mathbb{i}}{96}\right)\mathrm{AppellF1}\Big[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\Big(1+$$

$$\left.\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]\mathrm{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}-$$

$$\left(\frac{5}{24}+\frac{5\,\mathbb{i}}{24}\right)\mathrm{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\right.$$

$$\left.\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]\mathrm{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^{2}\Bigg)-\Bigg(\left(\left(\frac{5}{2}+\frac{5\,\mathbb{i}}{2}\right)\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\right.$$

$$\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{\mathbb{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]$$

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

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

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

$$\Bigg(\left(5+5\,i\right)\Bigg(\left(-\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

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

$$\left(\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

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

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Bigg)\Bigg(2^{2/3}\Bigg(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\right.\right.$$

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

$$\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]\Bigg)$$

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

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

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

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

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

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

$$\Bigg(\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Bigg(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\right]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

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

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

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

$$\left(\frac{1}{2^{1/3}}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\right)\right.$$

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

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

$$\frac{1}{2^{1/3}}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\right)$$

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

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

$$2^{2/3}\left(\left(-\frac{5}{24}+\frac{5\,i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]^2-\left(\frac{5}{96}+\frac{5\,i}{96}\right)\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\right.$$

$$\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]^2+i\left(\left(-\frac{5}{96}+\frac{5\,i}{96}\right)\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]^2-\right.$$

$$\left.\left.\left(\frac{5}{24}+\frac{5\,i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)$$

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

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

$$\frac{1}{3\left(\frac{(1+\mathrm{i})\,\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}\right)^{2/3}}\,2^{2/3}\left(\mathrm{AppellF1}\left[\frac{5}{3},\,\frac{1}{3},\,\frac{4}{3},\,\frac{8}{3},\right.\right.$$

$$\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\,\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Big]+$$

$$\mathrm{i}\,\mathrm{AppellF1}\left[\frac{5}{3},\,\frac{4}{3},\,\frac{1}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.$$

$$\left.\left.\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\right)\,\mathrm{Hypergeometric2F1}\left[\frac{1}{3},\right.$$

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

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

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

$$\left(\frac{5}{2}+\frac{5\,\mathrm{i}}{2}\right)\mathrm{AppellF1}\left[\frac{2}{3},\,\frac{1}{3},\,\frac{1}{3},\,\frac{5}{3},\,\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.$$

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

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

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

$$(5+5\,\mathrm{i})\left(\left(-\frac{1}{30}+\frac{\mathrm{i}}{30}\right)\mathrm{AppellF1}\left[\frac{5}{3},\,\frac{1}{3},\,\frac{4}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.\right.$$

$$\left.\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\mathrm{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^2-\left(\frac{1}{30}+\frac{\mathrm{i}}{30}\right)\mathrm{AppellF1}\left[\frac{5}{3},\right.$$

$$\left.\frac{4}{3},\,\frac{1}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\,\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(1+\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]$$

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

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

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

$$\frac{1}{3\left((1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}2\times 2^{2/3}\Bigg(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\right.$$

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

$$\left.\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]\Bigg)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(-\mathrm{Hypergeometric2F1}\Big[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{\left(1+i\right)+\left(1-i\right)\mathrm{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]}{2+2\,\mathrm{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]}\Big]+\right.$$

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

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

$$\left(\left(1+\mathrm{Tan}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right)\left(\mathrm{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right),\right.\right.$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right)\Big]+i\,\mathrm{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\mathrm{Cot}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right)\Big]+$$

$$\left(\left(5+5\,i\right)\mathrm{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\mathrm{Cot}\Big[\frac{1}{2}\left(c+d\,x\right)\Big]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\right.$$

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

Problem 103: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 6, 78 leaves, 4 steps):

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

Result (type 6, 9202 leaves):

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

$$\left(\left((60+60 i) \,\text{AppellF1}\left[\frac{2}{3}, \frac{1}{3}, \frac{1}{3}, \frac{5}{3}, \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right), \left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right] \text{Cos}\left[\frac{1}{2}(c+d x)\right]^2 \text{Sin}\left[\frac{1}{2}(c+d x)\right]\right.\right.$$

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

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

$$\text{AppellF1}\left[\frac{5}{3}, \frac{1}{3}, \frac{4}{3}, \frac{8}{3}, \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right), \left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+i \,\text{AppellF1}\left[\frac{5}{3}, \frac{4}{3}, \frac{1}{3}, \frac{8}{3}, \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\right.$$

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

$$\left(d \left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3\left(-400 i\right.\right.$$

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

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

$$\left(\text{AppellF1}\left[\frac{5}{3}, \frac{1}{3}, \frac{4}{3}, \frac{8}{3}, \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right), \left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]+\right.$$

$$\text{i AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)^2\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$

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

$$\left(-5\left(2\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]+\text{i AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]-2\,\text{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2+(2+2\,\text{i})\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]$$

$$(-2+\text{Cos}[c+d x]+\text{Cos}[2(c+d x)]-3\,\text{Sin}[c+d x])-(2-2\,\text{i})\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]$$

$$\left.(-2+\text{Cos}[c+d x]+\text{Cos}[2(c+d x)]-3\,\text{Sin}[c+d x])\right)\Bigg)\Bigg)-$$

$$\left(\left(160+160\,\text{i}\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right.$$

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

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

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

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

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

$$\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]+\right.$$

$$\left.\left.\text{i AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{\text{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\Big/$$

$$\left(d\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3\left(-8\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)^2\right.\right.$$

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

$$\left(5\left(2\,\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]-2\,\text{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2+(2+2 i)\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]$$

$$(2+\text{Cos}[c+d x]-\text{Cos}[2(c+d x)]+3\,\text{Sin}[c+d x])-(2-2 i)\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]$$

$$\left.(2+\text{Cos}[c+d x]-\text{Cos}[2(c+d x)]+3\,\text{Sin}[c+d x])\right)-50 i$$

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

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

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

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

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

$$\left(2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\right)\right.$$

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

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

$$(5+5\,i)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(2^{2/3}\,\text{Hypergeometric2F1}\left[\right.\right.$$

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

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

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+\right.\right.$$

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

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

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

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

$$\left(2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.\right.$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

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

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

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

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

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

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

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

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),\right.\right.\right.$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

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

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

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

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

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

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

$$\Big(2^{2/3}\Big(\text{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

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

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

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

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

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

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

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

$$\Big(\left(1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Big(\text{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right),$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\Big]+$$

$$\Big((5+5i)\,\text{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)$$

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

$$\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\left(\frac{3}{4}+\frac{3i}{4}\right)\left(\frac{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2}}\right)^{2/3}$$

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

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

$$\Bigg(\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\Bigg(2^{2/3}\Big(\text{AppellF1}\Big[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},$$

$$\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\Big]\Big)$$

$$\text{Hypergeometric2F1}\Big[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\Big]\Big(i+\text{Tan}\Big[$$

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

$$(5+5i)\,\text{AppellF1}\Big[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),$$

$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\Big]\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]\Big(2^{2/3}\,\text{Hypergeometric2F1}\Big[$$

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

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

$$\left(2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\right.\right.\right.$$
$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$
$$\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]+$$
$$\left((5+5 i)\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\right.$$
$$\left.\left.\left.\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)-$$
$$\left(\left(\left(-\frac{5}{24}+\frac{5 i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\right.\right.\right.$$
$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2-\left(\frac{5}{96}+\frac{5 i}{96}\right)\text{AppellF1}\Big[\frac{8}{3},$$
$$\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]$$
$$\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2+i\left(\left(-\frac{5}{96}+\frac{5 i}{96}\right)\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\right.\right.\right.$$
$$\left.\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2-$$
$$\left(\frac{5}{24}+\frac{5 i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\right.$$
$$\left.\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(\left(\frac{5}{2}+\frac{5 i}{2}\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\right.\right.$$
$$\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$
$$\left(\left(\frac{5}{2}+\frac{5 i}{2}\right)\text{AppellF1}\left[\frac{2}{3},\frac{1}{3},\frac{1}{3},\frac{5}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\right.\right.$$
$$\left.\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+$$
$$\left((5+5 i)\left(\left(-\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\right.\right.\right.$$
$$\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2-$$
$$\left(\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]\text{Csc}\left[\frac{1}{2}(c+d x)\right]^2\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big/$$
$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\left(2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\right.\right.\right.\right.$$
$$\left.\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d x)\right]\right)\Big]+i\,\text{AppellF1}\Big[\frac{5}{3},\frac{4}{3},$$

$$\frac{1}{3},\ \frac{8}{3},\ \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\ \left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big]\Big)$$

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

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

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

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

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

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

$$\Big(\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big(\text{AppellF1}\left[\frac{5}{3},\ \frac{1}{3},\ \frac{4}{3},\ \frac{8}{3},\ \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\Big[\frac{5}{3},\ \frac{4}{3},\ \frac{1}{3},\ \frac{8}{3},$$

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

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

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

$$\Big(\frac{1}{2^{1/3}}\Big(\text{AppellF1}\left[\frac{5}{3},\ \frac{1}{3},\ \frac{4}{3},\ \frac{8}{3},\ \left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right),\ \left(\frac{1}{2}-\frac{i}{2}\right)\right.$$

$$\left.\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\Big[\frac{5}{3},\ \frac{4}{3},\ \frac{1}{3},\ \frac{8}{3},$$

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

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

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

$$\frac{1}{2^{1/3}}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\right.$$
$$\left.\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]\right)$$
$$\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(\frac{(1+i)\left(-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+$$
$$2^{2/3}\left(\left(-\frac{5}{24}+\frac{5i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{1}{3},\frac{7}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\right.\right.$$
$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+dx)\right]^2-\left(\frac{5}{96}+\frac{5i}{96}\right)\text{AppellF1}\left[\frac{8}{3},\right.$$
$$\left.\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]$$
$$\text{Csc}\left[\frac{1}{2}(c+dx)\right]^2+i\left(\left(-\frac{5}{96}+\frac{5i}{96}\right)\text{AppellF1}\left[\frac{8}{3},\frac{4}{3},\frac{4}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\right.\right.\right.$$
$$\left.\left.\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+dx)\right]^2-$$
$$\left(\frac{5}{24}+\frac{5i}{24}\right)\text{AppellF1}\left[\frac{8}{3},\frac{7}{3},\frac{1}{3},\frac{11}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\right.$$
$$\left.\left.\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]\text{Csc}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)$$
$$\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]$$
$$\left(i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\left(\frac{(1+i)\left(-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{1/3}\left(1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+$$
$$\frac{1}{3\left(\frac{(1+i)\left(-i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right)^{2/3}}2^{2/3}\left(\text{AppellF1}\left[\frac{5}{3},\frac{1}{3},\frac{4}{3},\frac{8}{3},\right.\right.$$
$$\left.\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]+$$
$$i\,\text{AppellF1}\left[\frac{5}{3},\frac{4}{3},\frac{1}{3},\frac{8}{3},\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right),\right.$$
$$\left.\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}(c+dx)\right]\right)\right]\right)\text{Hypergeometric2F1}\left[\frac{1}{3},\right.$$
$$\left.\frac{2}{3},\frac{5}{3},\frac{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}{2+2\,\text{Tan}\left[\frac{1}{2}(c+dx)\right]}\right]\left(i+\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)$$

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

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

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

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

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

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

$$(5+5\,i)\,\left(\left(-\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{3},\,\frac{4}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\,\text{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]^2-\left(\frac{1}{30}+\frac{i}{30}\right)\text{AppellF1}\left[\frac{5}{3},\right.$$

$$\left.\frac{4}{3},\,\frac{1}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\,\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]$$

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

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

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

$$\frac{1}{3\,\left((1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}\,2\times 2^{2/3}\,\left(\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{3},\,\frac{4}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{i}{2}\right)\right.\right.$$

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

$$\left.\left.\frac{1}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\,\left(\frac{1}{2}-\frac{i}{2}\right)\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\left(\text{AppellF1}\left[\frac{5}{3},\,\frac{1}{3},\,\frac{4}{3},\,\frac{8}{3},\,\left(\frac{1}{2}+\frac{i}{2}\right)\,\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right),\right.\right.\right.$$

$$\left.\left(\frac{1}{2}-\frac{i}{2}\right)\,\left(1+\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right]+i\,\text{AppellF1}\left[\frac{5}{3},\,\frac{4}{3},\,\frac{1}{3},\,\frac{8}{3},\right.$$

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

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

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

Problem 108: Unable to integrate problem.

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

Optimal (type 6, 77 leaves, 4 steps):

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

Result (type 8, 23 leaves) :

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

Problem 109: Mathematica result simpler than optimal antiderivative, IF it can be verified!

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

Optimal (type 6, 77 leaves, 4 steps) :

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

Result (type 5, 182 leaves) :

$$\left(2\times2^{2/3}\,\text{Cos}\left[\frac{1}{4}\,(2\,c-\pi+2\,d\,x)\right]^{2/3}\,(\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x])\,\left(1+4\,\text{Sin}[c+d\,x]+4\,i\,\text{Cos}[c+d\,x]\right.\right.$$
$$\left.\left.\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{4}{3},-i\,e^{-i\,(c+d\,x)}\right]\,(1+i\,\text{Cos}[c+d\,x]+\text{Sin}[c+d\,x])^{2/3}\right)\right)\Big/$$
$$\left(5\,d\,\left(e^{-\frac{1}{4}i\,(2\,c+\pi+2\,d\,x)}\,\left(i+e^{i\,(c+d\,x)}\right)\right)^{2/3}\,\left(1+e^{2\,i\,(c+d\,x)}\right)\,(a\,(1+\text{Sin}[c+d\,x]))^{1/3}\right)$$

Problem 114: Unable to integrate problem.

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

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

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},1,\frac{11}{6},\frac{3}{2},1-\text{Sin}[c+d\,x],\frac{1}{2}\,(1-\text{Sin}[c+d\,x])\right]\,\text{Cos}[c+d\,x]\right)\Big/\left(2^{5/6}\,a\,d\,(1+\text{Sin}[c+d\,x])^{1/6}\,(a+a\,\text{Sin}[c+d\,x])^{1/3}\right)\right)$$

Result (type 8, 23 leaves) :

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

Problem 115: Mathematica result simpler than optimal antiderivative, IF it can

be verified!

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

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

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2}, 2, \frac{11}{6}, \frac{3}{2}, 1-\text{Sin}[c+d x], \frac{1}{2} (1-\text{Sin}[c+d x])\right] \text{Cos}[c+d x]\right) \Big/ \left(2^{5/6} a d (1+\text{Sin}[c+d x])^{1/6} (a+a \,\text{Sin}[c+d x])^{1/3}\right)\right)$$

Result (type 5, 308 leaves):

$$\left(4 i \, 2^{2/3} \,\text{Cos}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]^{8/3} \left(14+35 e^{i \left(-c+\frac{\pi}{2}-d x\right)}+12 e^{2 i \left(-c+\frac{\pi}{2}-d x\right)}+35 e^{3 i \left(-c+\frac{\pi}{2}-d x\right)}+14 e^{4 i \left(-c+\frac{\pi}{2}-d x\right)}+ 14 \left(-1+e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right) \left(1+e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right)^{11/3} \text{Hypergeometric2F1}\left[\frac{1}{3}, \frac{2}{3}, \frac{4}{3}, -e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right]\right)\right) \Big/ \left(55 d \left(-1+e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right) \left(1+e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right)^3 \left(e^{-\frac{1}{2} i \left(-c+\frac{\pi}{2}-d x\right)} \left(1+e^{i \left(-c+\frac{\pi}{2}-d x\right)}\right)\right)^{2/3} (a+a \,\text{Sin}[c+d x])^{4/3}\right)$$

Problem 116: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \text{Sin}[e+f x]^n (1+\text{Sin}[e+f x])^{3/2} \, dx$$

Optimal (type 5, 96 leaves, 4 steps):

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

Result (type 6, 20 237 leaves): Display of huge result suppressed!

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

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

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

$$-\frac{2 \,\text{Cos}[e+f x] \,\text{Hypergeometric2F1}\left[\frac{1}{2}, -n, \frac{3}{2}, 1-\text{Sin}[e+f x]\right]}{f \sqrt{1+\text{Sin}[e+f x]}}$$

Result (type 5, 196 leaves):

$$\left(2^{1-n}\left(1-e^{2 i (e+f x)}\right)^{-n}\left(-i e^{-i (e+f x)}\left(-1+e^{2 i (e+f x)}\right)\right)^n\right.$$
$$\left((1-2 n)\,\text{Hypergeometric2F1}\left[\frac{1}{4}(-1-2 n),-n,\frac{1}{4}(3-2 n),e^{2 i (e+f x)}\right]+\right.$$
$$\left.i e^{i (e+f x)}(1+2 n)\,\text{Hypergeometric2F1}\left[\frac{1}{4}(1-2 n),-n,\frac{1}{4}(5-2 n),e^{2 i (e+f x)}\right]\right)$$
$$\left.\sqrt{1+\text{Sin}[e+f x]}\right)\Big/\left(\left(i+e^{i (e+f x)}\right) f\,(-1+2 n)\,(1+2 n)\right)$$

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

$$\int\frac{\text{Sin}[e+f x]^n}{\sqrt{1+\text{Sin}[e+f x]}}\,dx$$

Optimal (type 6, 58 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,1,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\right)\Big/\right.$$
$$\left.\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 387 leaves):

$$\frac{1}{f}\text{Sec}[e+f x]\,\text{Sin}[e+f x]^n\,(1+\text{Sin}[e+f x])^{3/2}$$
$$\left(\left(4\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)\Big/\right.$$
$$\left(8\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\right.$$
$$\left(-4\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\right.$$
$$\left.\left.\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)(1+\text{Sin}[e+f x])\right)-$$
$$\left((-1+2 n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right.$$
$$\left.(-1+\text{Sin}[e+f x])\right)\Big/\left((1+2 n)\right.$$
$$\left(2\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\right.\right.\right.$$
$$\left.\left.\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+(-1+2 n)\,\text{AppellF1}\left[\right.$$
$$\left.\left.\left.-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](1+\text{Sin}[e+f x])\right)\right)\right)$$

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

$$\int \frac{\text{Sin}[e+f x]^n}{(1+\text{Sin}[e+f x])^{3/2}} \, dx$$

Optimal (type 6, 60 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,2,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\right)\Big/\left(2 f \sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 624 leaves):

$$\frac{1}{2 f}\text{Sec}[e+f x]\,\text{Sin}[e+f x]^n\sqrt{1+\text{Sin}[e+f x]}$$
$$\left(\left(4\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right](1+\text{Sin}[e+f x])\right)\Big/\right.$$
$$\left(8\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\right.$$
$$\left(-4\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\right.$$
$$\left.\left.\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)(1+\text{Sin}[e+f x])\right)-$$
$$\left((-1+2 n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right.$$
$$\left.(-1+\text{Sin}[e+f x])(1+\text{Sin}[e+f x])\right)\Big/\left((1+2 n)\right.$$
$$\left(2\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\right.\right.\right.$$
$$\left.\left.\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+(-1+2 n)\,\text{AppellF1}\left[\right.$$
$$\left.\left.\left.-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](1+\text{Sin}[e+f x])\right)\right)-$$
$$\left(2(-3+2 n)\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right.$$
$$\left.(-1+\text{Sin}[e+f x])\right)\Big/\left((-1+2 n)\right.$$
$$\left(2\left(n\,\text{AppellF1}\left[\frac{3}{2}-n,-\frac{1}{2},1-n,\frac{5}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\right.\right.\right.$$
$$\left.\left.\frac{3}{2}-n,\frac{1}{2},-n,\frac{5}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+(-3+2 n)\,\text{AppellF1}\left[\right.$$
$$\left.\left.\left.\left.\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](1+\text{Sin}[e+f x])\right)\right)\right)$$

Problem 120: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 5, 106 leaves, 4 steps):

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

Result (type 6, 20 239 leaves): Display of huge result suppressed!

Problem 121: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sin}[e+f x]^n \sqrt{a+a \text{Sin}[e+f x]} \, dx$$

Optimal (type 5, 46 leaves, 2 steps):

$$-\frac{2 a \text{Cos}[e+f x] \text{Hypergeometric2F1}\left[\frac{1}{2},-n,\frac{3}{2},1-\text{Sin}[e+f x]\right]}{f \sqrt{a+a \text{Sin}[e+f x]}}$$

Result (type 5, 264 leaves):

$$\frac{1}{f (-1+2 n) (1+2 n) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)} (1+i) e^{-\frac{1}{2} i f x} \left(e^{i f x} (1+2 n) \text{Hypergeometric2F1}\left[\frac{1}{4} (1-2 n),-n,\frac{1}{4} (5-2 n),e^{2 i f x} (\text{Cos}[e]+i \text{Sin}[e])^2\right] \left(\text{Cos}\left[\frac{e}{2}\right]+i \text{Sin}\left[\frac{e}{2}\right]\right)+(-1+2 n) \text{Hypergeometric2F1}\left[\frac{1}{4} (-1-2 n),-n,\frac{1}{4} (3-2 n),e^{2 i f x} (\text{Cos}[e]+i \text{Sin}[e])^2\right] \left(i \text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\right) \left(1-e^{2 i f x} \text{Cos}[e]^2+e^{2 i f x} \text{Sin}[e]^2-i e^{2 i f x} \text{Sin}[2 e]\right)^{-n} \text{Sin}[e+f x]^n \sqrt{a (1+\text{Sin}[e+f x])}$$

Problem 122: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sin}[e+f x]^n}{\sqrt{a+a \text{Sin}[e+f x]}} \, dx$$

Optimal (type 6, 60 leaves, 4 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,1,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\right)\Big/\left(f\sqrt{a+a\,\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 426 leaves):

$$\frac{1}{f\sqrt{a\,(1+\text{Sin}[e+f x])}}\text{Sec}[e+f x]\,(1+\text{Sin}[e+f x])^2\left(\left(4\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right](-\text{Sin}[e+f x])^{-n}\left(-\text{Sin}[e+f x]^2\right)^n\right)\Big/\left(8\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]-\left(4\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]-\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)(1+\text{Sin}[e+f x])\right)-\left((-1+2n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](-1+\text{Sin}[e+f x])\,\text{Sin}[e+f x]^n\right)\Big/\left((1+2n)\left(2\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+(-1+2n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](1+\text{Sin}[e+f x])\right)\right)\right)$$

Problem 123: Result more than twice size of optimal antiderivative.

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

Optimal (type 6, 65 leaves, 4 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,2,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\right)\Big/\left(2\,a\,f\sqrt{a+a\,\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 796 leaves):

$$\Bigg(\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]^n\,\big(1+\text{Sin}[e+f\,x]\big)\left(\frac{-a+a\,\big(1+\text{Sin}[e+f\,x]\big)}{a}\right)^{-n}$$

$$\Bigg(\Bigg(4\,a^2\,\text{AppellF1}\Big[1,\,\frac{1}{2},\,-n,\,2,\,\frac{1}{2}\,\big(1+\text{Sin}[e+f\,x]\big),\,1+\text{Sin}[e+f\,x]\Big]$$

$$\big(-\text{Sin}[e+f\,x]\big)^{-n}\,\big(1+\text{Sin}[e+f\,x]\big)\left(-\frac{\big(a-a\,\big(1+\text{Sin}[e+f\,x]\big)\big)^2}{a^2}\right)^n\Bigg)\Bigg/$$

$$\Bigg(8\,a\,\text{AppellF1}\Big[1,\,\frac{1}{2},\,-n,\,2,\,\frac{1}{2}\,\big(1+\text{Sin}[e+f\,x]\big),\,1+\text{Sin}[e+f\,x]\Big]+$$

$$a\,\Bigg(-4\,n\,\text{AppellF1}\Big[2,\,\frac{1}{2},\,1-n,\,3,\,\frac{1}{2}\,\big(1+\text{Sin}[e+f\,x]\big),\,1+\text{Sin}[e+f\,x]\Big]+$$

$$\text{AppellF1}\Big[2,\,\frac{3}{2},\,-n,\,3,\,\frac{1}{2}\,\big(1+\text{Sin}[e+f\,x]\big),\,1+\text{Sin}[e+f\,x]\Big]\Bigg)\,\big(1+\text{Sin}[e+f\,x]\big)\Bigg)-$$

$$\Bigg(a\,(-1+2\,n)\,\text{AppellF1}\Big[-\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{1}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]$$

$$\text{Sin}[e+f\,x]^n\,\big(1+\text{Sin}[e+f\,x]\big)\,\big(-2\,a+a\,\big(1+\text{Sin}[e+f\,x]\big)\big)\Bigg)\Bigg/\Bigg((1+2\,n)$$

$$\Bigg(2\,a\,\Bigg(n\,\text{AppellF1}\Big[\frac{1}{2}-n,\,-\frac{1}{2},\,1-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]+\text{AppellF1}\Big[$$

$$\frac{1}{2}-n,\,\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]\Bigg)+a\,(-1+2\,n)\,\text{AppellF1}\Big[$$

$$-\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{1}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]\,\big(1+\text{Sin}[e+f\,x]\big)\Bigg)\Bigg)-$$

$$\Bigg(2\,a\,(-3+2\,n)\,\text{AppellF1}\Big[\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]$$

$$\text{Sin}[e+f\,x]^n\,\big(-2\,a+a\,\big(1+\text{Sin}[e+f\,x]\big)\big)\Bigg)\Bigg/$$

$$\Bigg((-1+2\,n)\,\Bigg(2\,a\,\Bigg(n\,\text{AppellF1}\Big[\frac{3}{2}-n,\,-\frac{1}{2},\,1-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]+$$

$$\text{AppellF1}\Big[\frac{3}{2}-n,\,\frac{1}{2},\,-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]\Bigg)+$$

$$a\,(-3+2\,n)\,\text{AppellF1}\Big[\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{1}{1+\text{Sin}[e+f\,x]}\Big]$$

$$\big(1+\text{Sin}[e+f\,x]\big)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(2\,a^2\,f\,\sqrt{a\,\big(1+\text{Sin}[e+f\,x]\big)}\,\sqrt{\frac{2\,a^2\,\big(1+\text{Sin}[e+f\,x]\big)-a^2\,\big(1+\text{Sin}[e+f\,x]\big)^2}{a^2}}$$

$$\sqrt{1-\frac{\big(-a+a\,\big(1+\text{Sin}[e+f\,x]\big)\big)^2}{a^2}}\Bigg)$$

Problem 124: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int (d\,\text{Sin}[e+f\,x])^n\,(1+\text{Sin}[e+f\,x])^{3/2}\,dx$$

Optimal (type 5, 130 leaves, 4 steps):

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

Result (type 6, 20 257 leaves): Display of huge result suppressed!

Problem 125: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (d\,\text{Sin}[e+f\,x])^n\,\sqrt{1+\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 5, 72 leaves, 2 steps):

$$\left(\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},1+n,2+n,\text{Sin}[e+f\,x]\right]\,(d\,\text{Sin}[e+f\,x])^{1+n}\right)\Big/\left(d\,f\,(1+n)\,\sqrt{1-\text{Sin}[e+f\,x]}\,\sqrt{1+\text{Sin}[e+f\,x]}\right)$$

Result (type 5, 231 leaves):

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

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

$$\int \frac{(d\,\text{Sin}[e+f\,x])^n}{\sqrt{1+\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 6, 78 leaves, 4 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,1,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\,\text{Sin}[e+f x]^{-n}\,(d\,\text{Sin}[e+f x])^n\right)\Big/\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 389 leaves):

$$\frac{1}{f}\text{Sec}[e+f x]\,(d\,\text{Sin}[e+f x])^n\,(1+\text{Sin}[e+f x])^{3/2}\left(\left(4\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)\Big/\left(8\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\left(-4\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]+\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}(1+\text{Sin}[e+f x]),1+\text{Sin}[e+f x]\right]\right)(1+\text{Sin}[e+f x])\right)-\left((-1+2n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](-1+\text{Sin}[e+f x])\right)\Big/\left((1+2n)\left(2\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+(-1+2n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{1}{1+\text{Sin}[e+f x]}\right](1+\text{Sin}[e+f x])\right)\right)\right)$$

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

$$\int\frac{(d\,\text{Sin}[e+f x])^n}{(1+\text{Sin}[e+f x])^{3/2}}\,dx$$

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

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,2,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\text{Cos}[e+f x]\,\text{Sin}[e+f x]^{-n}\,(d\,\text{Sin}[e+f x])^n\right)\Big/\left(2f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 626 leaves):

$$\frac{1}{2\,f}\,\mathrm{Sec}[e+f\,x]\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^n\,\sqrt{1+\mathrm{Sin}[e+f\,x]}$$
$$\left(\left(4\,\mathrm{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x]),1+\mathrm{Sin}[e+f\,x]\right]\,(1+\mathrm{Sin}[e+f\,x])\right)\Big/\right.$$
$$\left(8\,\mathrm{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x]),1+\mathrm{Sin}[e+f\,x]\right]+\right.$$
$$\left(-4\,n\,\mathrm{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x]),1+\mathrm{Sin}[e+f\,x]\right]+\right.$$
$$\left.\left.\mathrm{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x]),1+\mathrm{Sin}[e+f\,x]\right]\right)\,(1+\mathrm{Sin}[e+f\,x])\right)-$$
$$\left(\left(-1+2\,n\right)\,\mathrm{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\right.$$
$$\left.(-1+\mathrm{Sin}[e+f\,x])\,(1+\mathrm{Sin}[e+f\,x])\right)\Big/\left((1+2\,n)\right.$$
$$\left(2\left(n\,\mathrm{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]+\mathrm{AppellF1}\left[\right.\right.\right.$$
$$\left.\left.\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\right)+(-1+2\,n)\,\mathrm{AppellF1}\left[\right.$$
$$\left.\left.\left.-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\,(1+\mathrm{Sin}[e+f\,x])\right)\right)-$$
$$\left(2\,(-3+2\,n)\,\mathrm{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\right.$$
$$\left.(-1+\mathrm{Sin}[e+f\,x])\right)\Big/\left((-1+2\,n)\right.$$
$$\left(2\left(n\,\mathrm{AppellF1}\left[\frac{3}{2}-n,-\frac{1}{2},1-n,\frac{5}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]+\mathrm{AppellF1}\left[\right.\right.\right.$$
$$\left.\left.\frac{3}{2}-n,\frac{1}{2},-n,\frac{5}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\right)+(-3+2\,n)\,\mathrm{AppellF1}\left[\right.$$
$$\left.\left.\left.\left.\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\mathrm{Sin}[e+f\,x]},\frac{1}{1+\mathrm{Sin}[e+f\,x]}\right]\,(1+\mathrm{Sin}[e+f\,x])\right)\right)\right)$$

Problem 128: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$-\left(\left(2\,a^2\,(5+4\,n)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},-n,\frac{3}{2},1-\mathrm{Sin}[e+f\,x]\right]\,\mathrm{Sin}[e+f\,x]^{-n}\right.\right.$$
$$\left.\left.(d\,\mathrm{Sin}[e+f\,x])^n\right)\Big/\left(f\,(3+2\,n)\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\right)\right)-\frac{2\,a^2\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Sin}[e+f\,x])^{1+n}}{d\,f\,(3+2\,n)\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 6, 20 259 leaves): Display of huge result suppressed!

Problem 129: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

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

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

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

Result (type 5, 266 leaves):

$$\frac{1}{f\,(-1+2\,n)\,(1+2\,n)\,\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)}(1+i)\,e^{-\frac{1}{2}i\,f\,x}$$
$$\left(e^{i\,f\,x}\,(1+2\,n)\,\text{Hypergeometric2F1}\left[\frac{1}{4}(1-2\,n),-n,\frac{1}{4}(5-2\,n),e^{2\,i\,f\,x}\,(\text{Cos}[e]+i\,\text{Sin}[e])^2\right]\right.$$
$$\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)+(-1+2\,n)\,\text{Hypergeometric2F1}\left[\frac{1}{4}(-1-2\,n),\right.$$
$$\left.\left.-n,\frac{1}{4}(3-2\,n),e^{2\,i\,f\,x}\,(\text{Cos}[e]+i\,\text{Sin}[e])^2\right]\left(i\,\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\right)$$
$$\left(1-e^{2\,i\,f\,x}\,\text{Cos}[e]^2+e^{2\,i\,f\,x}\,\text{Sin}[e]^2-i\,e^{2\,i\,f\,x}\,\text{Sin}[2\,e]\right)^{-n}\,(d\,\text{Sin}[e+f\,x])^n$$
$$\sqrt{a\,(1+\text{Sin}[e+f\,x])}$$

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

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

Optimal (type 6, 80 leaves, 5 steps):

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

Result (type 6, 446 leaves):

$$\frac{1}{f\sqrt{a\,(1+\text{Sin}[e+f\,x])}}\,\text{Sec}[e+f\,x]\,\text{Sin}[e+f\,x]^{-n}\,(d\,\text{Sin}[e+f\,x])^n\,(1+\text{Sin}[e+f\,x])^2 \left(\left(4\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f\,x]),1+\text{Sin}[e+f\,x]\right](-\text{Sin}[e+f\,x])^{-n} \left(-\text{Sin}[e+f\,x]^2\right)^n\right)\Big/\left(8\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}(1+\text{Sin}[e+f\,x]),1+\text{Sin}[e+f\,x]\right]-\left(4\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}(1+\text{Sin}[e+f\,x]),1+\text{Sin}[e+f\,x]\right]-\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}(1+\text{Sin}[e+f\,x]),1+\text{Sin}[e+f\,x]\right]\right)(1+\text{Sin}[e+f\,x])\right)-\left((-1+2\,n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{1}{1+\text{Sin}[e+f\,x]}\right](-1+\text{Sin}[e+f\,x])\,\text{Sin}[e+f\,x]^n\right)\Big/\left((1+2\,n)\left(2\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{1}{1+\text{Sin}[e+f\,x]}\right]+\text{AppellF1}\left[\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{1}{1+\text{Sin}[e+f\,x]}\right]\right)+(-1+2\,n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{1}{1+\text{Sin}[e+f\,x]}\right](1+\text{Sin}[e+f\,x])\right)\right)\right)$$

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

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

Optimal (type 6, 85 leaves, 5 steps):

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

Result (type 6, 798 leaves):

$$\left(\text{Cos}[e+f x]\,\left(d\,\text{Sin}[e+f x]\right)^n\,\left(1+\text{Sin}[e+f x]\right)\,\left(\frac{-a+a\,\left(1+\text{Sin}[e+f x]\right)}{a}\right)^{-n}\right.$$

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

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

$$\left(8\,a\,\text{AppellF1}\left[1,\,\frac{1}{2},\,-n,\,2,\,\frac{1}{2}\,\left(1+\text{Sin}[e+f x]\right),\,1+\text{Sin}[e+f x]\right]+\right.$$

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

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

$$\left(a\,\left(-1+2\,n\right)\,\text{AppellF1}\left[-\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{1}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]\right.$$

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

$$\left(2\,a\,\left(n\,\text{AppellF1}\left[\frac{1}{2}-n,\,-\frac{1}{2},\,1-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]+\text{AppellF1}\left[\right.\right.\right.$$

$$\left.\left.\frac{1}{2}-n,\,\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+a\,\left(-1+2\,n\right)\,\text{AppellF1}\left[\right.$$

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

$$\left(2\,a\,\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]\right.$$

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

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

$$\left.\text{AppellF1}\left[\frac{3}{2}-n,\,\frac{1}{2},\,-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]\right)+$$

$$a\,\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f x]},\,\frac{1}{1+\text{Sin}[e+f x]}\right]$$

$$\left.\left.\left.\left.\left(1+\text{Sin}[e+f x]\right)\right)\right)\right)\right)\Big/$$

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

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

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

$$\int \text{Sin}[e+f\,x]^n\,(1+\text{Sin}[e+f\,x])^m\,dx$$

Optimal (type 6, 71 leaves, 2 steps):

$$-\Bigg(\Bigg(2^{\frac{1}{2}+m}\,\text{AppellF1}\Big[\frac{1}{2},-n,\frac{1}{2}-m,\frac{3}{2},1-\text{Sin}[e+f\,x],\frac{1}{2}\,(1-\text{Sin}[e+f\,x])\Big]\,\text{Cos}[e+f\,x]\Bigg)\Big/$$
$$\Big(f\,\sqrt{1+\text{Sin}[e+f\,x]}\Big)\Bigg)$$

Result (type 6, 2805 leaves):

$$-\Bigg(\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$
$$\text{Cos}[e+f\,x]\,\Big(\text{Sec}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{-m}\,\text{Sin}[e+f\,x]^{2\,n}\,(1+\text{Sin}[e+f\,x])^m\Bigg)\Big/$$
$$\Bigg(f\,\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$
$$2\,\Bigg(n\,\text{AppellF1}\Big[\frac{3}{2},1-n,1+m+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$
$$(1+m+n)\,\text{AppellF1}\Big[\frac{3}{2},-n,2+m+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Bigg)$$
$$\Bigg(-\Bigg(\Bigg(3\,n\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$
$$\text{Cos}[e+f\,x]^2\,\Big(\text{Sec}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{-m}\,\text{Sin}[e+f\,x]^{-1+n}\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$
$$2\,\Bigg(n\,\text{AppellF1}\Big[\frac{3}{2},1-n,1+m+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+(1+m+n)\,\text{AppellF1}\Big[\frac{3}{2},-n,2+m+n,\frac{5}{2},$$
$$\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Bigg)\Bigg)+$$
$$\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$
$$\Big(\text{Sec}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{-m}\,\text{Sin}[e+f\,x]^{1+n}\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$
$$2\,\Bigg(n\,\text{AppellF1}\Big[\frac{3}{2},1-n,1+m+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+(1+m+n)\,\text{AppellF1}\Big[\frac{3}{2},-n,2+m+n,\frac{5}{2},$$

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

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

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

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

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

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

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

$$(3\,\text{Cos}[e+f x]\ (\text{Sec}[\tfrac{1}{2}(-e+\tfrac{\pi}{2}-f x)]^2)^{-m}\,\text{Sin}[e+f x]^n$$

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

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

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

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

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

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

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

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

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

$$\text{Cos}[e+f x]\ (\text{Sec}[\tfrac{1}{2}(-e+\tfrac{\pi}{2}-f x)]^2)^{-m}\,\text{Sin}[e+f x]^n$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\int (1-\mathrm{Sin}[e+f\,x])^m\,(-\mathrm{Sin}[e+f\,x])^n\,dx$$

Optimal (type 6, 68 leaves, 2 steps):

$$\Big(2^{\frac{1}{2}+m}\,\mathrm{AppellF1}\Big[\frac{1}{2},\,-n,\,\frac{1}{2}-m,\,\frac{3}{2},\,1+\mathrm{Sin}[e+f\,x],\,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x])\Big]\,\mathrm{Cos}[e+f\,x]\Big)\Big/$$

$$\Big(f\,\sqrt{1-\mathrm{Sin}[e+f\,x]}\Big)$$

Result (type 6, 4138 leaves):

$$-\Big(\Big(\Big(2\,(3+2\,m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,\,-n,\,1+m+n,\,\frac{3}{2}+m,$$

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

$$(1-\text{Sin}[e+f\,x])^m\ (-\text{Sin}[e+f\,x])^n\ \left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Sin}[e+f\,x]\right)^n$$

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

$$\Bigg(f\,(1+2\,m)\ \Bigg(\,(3+2\,m)\ \text{AppellF1}\left[\frac{1}{2}+m,\ -n,\ 1+m+n,\ \frac{3}{2}+m,\right.$$

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

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

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

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

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

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

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

$$\Bigg(\,(1+2\,m)\ \Bigg(\,(3+2\,m)\ \text{AppellF1}\left[\frac{1}{2}+m,\ -n,\ 1+m+n,\ \frac{3}{2}+m,\right.$$

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

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

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

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

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

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

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

$$\left(\left(1+2m\right)\left(\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

$$\left(2\,(3+2m)\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^{1+n}\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Sin}[e+fx]\right)^n\right.$$

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

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

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

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

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

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

$$\left(2(3+2m)\,n\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^{1+n}\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Sin}[e+fx]\right)^{-1+n}\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]\left(\frac{\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}}\right)^{2m}\left(-\text{Cos}[e+fx]\,\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2+\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Sin}[e+fx]\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\right)\Big/$$

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

$$\left(4m(3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$

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

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

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

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

$$\Big((1+2\,m)\Big((3+2\,m)\,\text{AppellF1}\Big[\frac{1}{2}+m,\,-n,\,1+m+n,\,\frac{3}{2}+m,$$

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 134: Result more than twice size of optimal antiderivative.

$$\int (d\,\text{Sin}[e+f x])^n\,(1+\text{Sin}[e+f x])^m\,dx$$

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

$$-\left(\left(2^{\frac{1}{2}+m}\,\text{AppellF1}\left[\frac{1}{2},-n,\frac{1}{2}-m,\frac{3}{2},1-\text{Sin}[e+f x],\frac{1}{2}(1-\text{Sin}[e+f x])\right]\right.\right.$$
$$\left.\left.\text{Cos}[e+f x]\,\text{Sin}[e+f x]^{-n}\,(d\,\text{Sin}[e+f x])^n\right)\Big/\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 6, 2813 leaves):

$$-\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Cos}[e+f x]$$
$$\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{-m}\text{Sin}[e+f x]^n\,(d\,\text{Sin}[e+f x])^n\,(1+\text{Sin}[e+f x])^m\Bigg)\Big/$$
$$\Bigg(f\,\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$
$$2\,\Bigg(n\,\text{AppellF1}\left[\frac{3}{2},1-n,1+m+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$
$$(1+m+n)\,\text{AppellF1}\Big[\frac{3}{2},-n,2+m+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)$$
$$\Bigg(-\Bigg(\Bigg(3\,n\,\text{AppellF1}\left[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$
$$\text{Cos}[e+f x]^2\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{-m}\text{Sin}[e+f x]^{-1+n}\Bigg)\Big/$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$
$$2\,\Bigg(n\,\text{AppellF1}\Big[\frac{3}{2},1-n,1+m+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(1+m+n)\,\text{AppellF1}\Big[\frac{3}{2},-n,2+m+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)\Bigg)+$$
$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-n,1+m+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$
$$\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{-m}\text{Sin}[e+f x]^{1+n}\Bigg)\Big/$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 135: Result more than twice size of optimal antiderivative.

$$\int(1-\mathrm{Sin}[e+f\,x])^m\,(d\,\mathrm{Sin}[e+f\,x])^n\,dx$$

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

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

$$\mathrm{Cos}[e+f\,x]\,(-\mathrm{Sin}[e+f\,x])^{-n}\,(d\,\mathrm{Sin}[e+f\,x])^n\Big)\Big/\Big(f\,\sqrt{1-\mathrm{Sin}[e+f\,x]}\Big)$$

Result (type 6, 4138 leaves):

$$-\left(\left(2\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

$$\left(1-\text{Sin}[e+fx]\right)^m\left(d\,\text{Sin}[e+fx]\right)^n\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Sin}[e+fx]\right)^n$$

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

$$\left(f\left(1+2m\right)\left(\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

$$\left.\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Sin}[e+fx]\right)^n\left(\frac{\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}}\right)^{2m}\right)\Bigg/$$

$$\left(\left(1+2m\right)\left(\left(3+2m\right)\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

$$\left(2\,(3+2m)\,(1+n)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^n\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Sin}[e+f\,x]\right)^n\left(\frac{\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}}\right)^{2m}\right)\Bigg/$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(1+2 m\right)\left(\left(3+2 m\right)\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

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

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

$$\Big((1+2\,m)\,\Big((3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.$$

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

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

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

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

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

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

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

$$\left(\frac{\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}}\right)^{2m} \left(-2\left(n\,\mathrm{AppellF1}\left[\frac{3}{2}+m,1-n,1+m+n,\frac{5}{2}+m,\right.\right.\right.$$

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

$$\left.\left.-n,2+m+n,\frac{5}{2}+m,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$

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

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

$$\left.-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{\frac{3}{2}+m}$$

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

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

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

$$\left.1-n,2+m+n,\frac{7}{2}+m,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]+\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(1-n)$$

$$\mathrm{AppellF1}\left[\frac{5}{2}+m,2-n,1+m+n,\frac{7}{2}+m,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

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

$$(1+m+n)\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)n\,\mathrm{AppellF1}\left[\frac{5}{2}+m,1-n,2+m+n,\frac{7}{2}+m,\right.\right.$$

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

$$\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)(2+m+n)\,\mathrm{AppellF1}\left[\frac{5}{2}+m,\right.$$

$$\left.-n,3+m+n,\frac{7}{2}+m,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

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

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

Problem 136: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Sin}[e+f\,x]^n\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^m dx$$

Optimal (type 6, 87 leaves, 3 steps):

$$-\frac{1}{f}2^{\frac{1}{2}+m}\,\mathrm{AppellF1}\left[\frac{1}{2},\,-n,\,\frac{1}{2}-m,\,\frac{3}{2},\,1-\mathrm{Sin}[e+f\,x],\,\frac{1}{2}\left(1-\mathrm{Sin}[e+f\,x]\right)\right]$$
$$\mathrm{Cos}[e+f\,x]\left(1+\mathrm{Sin}[e+f\,x]\right)^{-\frac{1}{2}-m}\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^m$$

Result (type 6, 2807 leaves):

$$-\left(\left(\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-n,\,1+m+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.\right.$$
$$\left.\left.\mathrm{Cos}[e+f\,x]\left(\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\mathrm{Sin}[e+f\,x]^{2\,n}\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^m\right)\right/$$
$$\left(f\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-n,\,1+m+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.\right.$$
$$2\left(n\,\mathrm{AppellF1}\left[\frac{3}{2},\,1-n,\,1+m+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$\left(1+m+n\right)\mathrm{AppellF1}\left[\frac{3}{2},\,-n,\,2+m+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)$$
$$\left(-\left(\left(3\,n\,\mathrm{AppellF1}\left[\frac{1}{2},\,-n,\,1+m+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.\right.$$
$$\left.\mathrm{Cos}[e+f\,x]^2\left(\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\mathrm{Sin}[e+f\,x]^{-1+n}\right)\Big/$$

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

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

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

Problem 137: Result more than twice size of optimal antiderivative.

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

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

$$\frac{1}{f}2^{\frac{1}{2}+m}\,\mathrm{AppellF1}\Big[\frac{1}{2},-n,\frac{1}{2}-m,\frac{3}{2},1+\mathrm{Sin}[e+f x],\frac{1}{2}(1+\mathrm{Sin}[e+f x])\Big]\,\mathrm{Cos}[e+f x]\,(1-\mathrm{Sin}[e+f x])^{-\frac{1}{2}-m}\,(a-a\,\mathrm{Sin}[e+f x])^m$$

Result (type 6, 4139 leaves):

$$-\Bigg(\Bigg(2\,(3+2m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,-\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]$$
$$\left(\mathrm{Cos}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\right)^{1+n}(-\mathrm{Sin}[e+f x])^n\left(\mathrm{Sec}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\mathrm{Sin}[e+f x]\right)^n$$
$$(a-a\,\mathrm{Sin}[e+f x])^m\,\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]\left(\frac{\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]}{\sqrt{\mathrm{Sec}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2}}\right)^{2m}\Bigg)\Bigg/$$
$$\Bigg(f\,(1+2m)\,\Bigg((3+2m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,$$
$$\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,-\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]-$$
$$2\Bigg(n\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,1-n,1+m+n,\frac{5}{2}+m,\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$
$$-\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]+(1+m+n)\,\mathrm{AppellF1}\Big[\frac{3}{2}+m,-n,2+m+n,\frac{5}{2}+m,$$
$$\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,-\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\Bigg)\,\mathrm{Tan}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Bigg)$$

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

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

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

$$\left((1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

$$\left((1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left((1+2 m)\left((3+2 m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

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

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

$$\left((1+2 m)\left((3+2 m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

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

$$(1+m+n)\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)n\,\text{AppellF1}\left[\frac{5}{2}+m,\,1-n,\,2+m+n,\,\frac{7}{2}+m,\right.\right.$$

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

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

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

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

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

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

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

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

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

Problem 138: Result more than twice size of optimal antiderivative.

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

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

$$-\frac{1}{f}2^{\frac{1}{2}+m}\,\text{AppellF1}\left[\frac{1}{2},\,-n,\,\frac{1}{2}-m,\,\frac{3}{2},\,1-\text{Sin}[e+f\,x],\,\frac{1}{2}(1-\text{Sin}[e+f\,x])\right]$$

$$\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]^{-n}\,(d\,\text{Sin}[e+f\,x])^n\,(1+\text{Sin}[e+f\,x])^{-\frac{1}{2}-m}\,(a+a\,\text{Sin}[e+f\,x])^m$$

Result (type 6, 2815 leaves):

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

$$\left.\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\,\text{Sin}[e+f\,x]^n\,(d\,\text{Sin}[e+f\,x])^n\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Bigg/$$

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

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

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

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

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

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

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

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

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

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

$$\text{Cos}[e+f x]\, \Big(\text{Sec}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)^{-m}\, \text{Sin}[e+f x]^n$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 139: Result more than twice size of optimal antiderivative.

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

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

$$\frac{1}{f}2^{\frac{1}{2}+m}\,\mathrm{AppellF1}\Big[\frac{1}{2},-n,\frac{1}{2}-m,\frac{3}{2},1+\mathrm{Sin}[e+f x],\frac{1}{2}(1+\mathrm{Sin}[e+f x])\Big]\,\mathrm{Cos}[e+f x]$$
$$(1-\mathrm{Sin}[e+f x])^{-\frac{1}{2}-m}\,(-\mathrm{Sin}[e+f x])^{-n}\,(d\,\mathrm{Sin}[e+f x])^n\,(a-a\,\mathrm{Sin}[e+f x])^m$$

Result (type 6, 4139 leaves):

$$-\Bigg(\Bigg(2\,(3+2m)$$
$$\mathrm{AppellF1}\Big[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{1+n}(d\,\mathrm{Sin}[e+f x])^n\left(\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\mathrm{Sin}[e+f x]\right)^n$$
$$(a-a\,\mathrm{Sin}[e+f x])^m\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(\frac{\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}}\right)^{2m}\Bigg)\Bigg/$$
$$\Bigg(f\,(1+2m)\,\Big((3+2m)\,\mathrm{AppellF1}\Big[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,$$

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

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

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

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

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

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

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

$$\left((1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

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

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

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

$$\left((1+2m)\left((3+2m)\,\text{AppellF1}\left[\frac{1}{2}+m,-n,1+m+n,\frac{3}{2}+m,\right.\right.\right.$$

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

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

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

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

$$\left(2\,(3+2\,m)\left(\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+n}\left(\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Sin}[e+f\,x]\right)^n\right.$$

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

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

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

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

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

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

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

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

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

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

$$\left(2\,(3+2\,m)\,n\,\text{AppellF1}\left[\frac{1}{2}+m,\,-n,\,1+m+n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+n}$$
$$\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Sin}[e+f\,x]\right)^{-1+n}\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$
$$\left(\frac{\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}}\right)^{2\,m}\left(-\text{Cos}[e+f\,x]\,\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\right.$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Sin}[e+f\,x]\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)\Big/$$
$$\left((1+2\,m)\left((3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}+m,\,-n,\,1+m+n,\,\frac{3}{2}+m,\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$
$$2\left(n\,\text{AppellF1}\left[\frac{3}{2}+m,\,1-n,\,1+m+n,\,\frac{5}{2}+m,\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(1+m+n)\,\text{AppellF1}\left[\frac{3}{2}+m,\,-n,\,2+m+n,\,\frac{5}{2}+m,\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$
$$\left(4\,m\,(3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}+m,\,-n,\,1+m+n,\,\frac{3}{2}+m,\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+n}$$
$$\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Sin}[e+f\,x]\right)^{n}\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$
$$\left(\frac{\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}}\right)^{-1+2\,m}$$

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

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

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

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

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

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

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

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

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

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

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

$$(1+m+n)\left(-\frac{1}{\frac{5}{2}+m}\left(\frac{3}{2}+m\right)n\,\text{AppellF1}\left[\frac{5}{2}+m,\,1-n,\,2+m+n,\,\frac{7}{2}+m,\right.\right.$$

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

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

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

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

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

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

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

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

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

Problem 141: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 5, 215 leaves, 6 steps):

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

Result (type 5, 316 leaves):

$$\frac{1}{d\,(9-10\,n^2+n^4)}\,2^{-3-2\,n}\,e^{3\,i\,(c+d\,x)}\,\left(1+i\,e^{-i\,(c+d\,x)}\right)^{-2\,n}\,\left(e^{-\frac{1}{4}\,i\,(2\,c+\pi+2\,d\,x)}\,\left(i+e^{i\,(c+d\,x)}\right)\right)^{2\,n}\left(\left(3-n-3\,n^2+n^3\right)\,\text{Hypergeometric2F1}\left[-3-n,-2\,n,-2-n,-i\,e^{-i\,(c+d\,x)}\right]-e^{-2\,i\,(c+d\,x)}\,(3+n)\,\left(3\,(3-4\,n+n^2)\,\text{Hypergeometric2F1}\left[-1-n,-2\,n,-n,-i\,e^{-i\,(c+d\,x)}\right]-e^{-4\,i\,(c+d\,x)}\,(1+n)\,\left(3\,e^{2\,i\,(c+d\,x)}\,(-3+n)\,\text{Hypergeometric2F1}\left[1-n,-2\,n,2-n,-i\,e^{-i\,(c+d\,x)}\right]-(-1+n)\,\text{Hypergeometric2F1}\left[3-n,-2\,n,4-n,-i\,e^{-i\,(c+d\,x)}\right]\right)\right)\right)\left(a\,(1+\text{Sin}[c+d\,x])\right)^n\,\text{Sin}\left[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\right]^{-2\,n}$$

Problem 142: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 5, 156 leaves, 4 steps):

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

Result (type 6, 29 340 leaves): Display of huge result suppressed!

Problem 143: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 5, 197 leaves):

$$\frac{1}{d\,(-1+n)\,(1+n)}2^{-1-2 n}\,e^{-i (c+d x)}\,\left(1+i\,e^{-i (c+d x)}\right)^{-2 n}\,\left(e^{-\frac{1}{4} i (2 c+\pi+2 d x)}\,\left(i+e^{i (c+d x)}\right)\right)^{2 n}$$
$$\left(-e^{2 i (c+d x)}\,(-1+n)\,\text{Hypergeometric2F1}\left[-1-n,-2 n,-n,-i\,e^{-i (c+d x)}\right]+\right.$$
$$\left.(1+n)\,\text{Hypergeometric2F1}\left[1-n,-2 n,2-n,-i\,e^{-i (c+d x)}\right]\right)$$
$$(a\,(1+\text{Sin}[c+d x]))^n\,\text{Sin}\left[\frac{1}{4}\,(2 c+\pi+2 d x)\right]^{-2 n}$$

Problem 145: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Csc}[c+d x]\,(a+a\,\text{Sin}[c+d x])^n\,dx$$

Optimal (type 6, 85 leaves, 4 steps):

$$-\frac{1}{d}2^{\frac{1}{2}+n}\,\text{AppellF1}\left[\frac{1}{2},1,\frac{1}{2}-n,\frac{3}{2},1-\text{Sin}[c+d x],\frac{1}{2}\,(1-\text{Sin}[c+d x])\right]$$
$$\text{Cos}[c+d x]\,(1+\text{Sin}[c+d x])^{-\frac{1}{2}-n}\,(a+a\,\text{Sin}[c+d x])^n$$

Result (type 6, 2560 leaves):

$$-\left(\left(\text{Csc}[c+d x]\,\left(\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]^2\right)^{-n}\,(a+a\,\text{Sin}[c+d x])^n\right.\right.$$
$$\left(\text{AppellF1}\left[2 n,n,n,1+2 n,-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right]\right.$$
$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n-$$
$$\text{AppellF1}\left[2 n,n,n,1+2 n,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right]$$
$$\left.\left.\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n\right)\right)\Big/$$
$$\left(2 d n\left(-\frac{1}{2}\left(\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]^2\right)^{-n}\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]\right.\right.$$

$$\left(\text{AppellF1}\left[2 n, n, n, 1+2 n, -\frac{1+\mathrm{i}}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}, -\frac{1-\mathrm{i}}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right]\right.$$

$$\left(\frac{-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n \left(\frac{\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n -$$

$$\text{AppellF1}\left[2 n, n, n, 1+2 n, \frac{1-\mathrm{i}}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}, \frac{1+\mathrm{i}}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right]$$

$$\left(\frac{-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n$$

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

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

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

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

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

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

$$\left(\frac{-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n \left(\frac{\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\right)^n +$$

$$n\, \text{AppellF1}\left[2 n, n, n, 1+2 n, -\frac{1+\mathrm{i}}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]},\right.$$

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

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

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

$$n\,\text{AppellF1}\Big[2n,\,n,\,n,\,1+2n,\,-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]},$$

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

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

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

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

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

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

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

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

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

$$n\,\text{AppellF1}\Big[2n,\,n,\,n,\,1+2n,\,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]},\,\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\Big]$$

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

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

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

$$n\,\text{AppellF1}\Big[2n,\,n,\,n,\,1+2n,\,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]},\,\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\Big]$$

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

Problem 146: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 6, 85 leaves, 4 steps):

$$-\frac{1}{d}2^{\frac{1}{2}+n}\,\text{AppellF1}\left[\frac{1}{2},\,2,\,\frac{1}{2}-n,\,\frac{3}{2},\,1-\text{Sin}[c+d\,x],\,\frac{1}{2}\,(1-\text{Sin}[c+d\,x])\right]$$
$$\text{Cos}[c+d\,x]\,(1+\text{Sin}[c+d\,x])^{-\frac{1}{2}-n}\,(a+a\,\text{Sin}[c+d\,x])^{n}$$

Result (type 6, 4206 leaves):

$$-\left(\left(\text{Csc}[c+d\,x]^{2}\left(\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]^{2}\right)^{-n}(a+a\,\text{Sin}[c+d\,x])^{n}\right.\right.$$
$$\left(-\text{AppellF1}\left[1+2\,n,\,n,\,n,\,2+2\,n,\,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]},\,\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right]\right.$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right)^{n}\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right)^{n}-$$
$$\text{AppellF1}\left[1+2\,n,\,n,\,n,\,2\,(1+n),\,-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]},\right.$$
$$\left.-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right]\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right)^{n}$$
$$\left.\left.\left.\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}\right)^{n}\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right)\right/$$
$$\left(d\,(1+2\,n)\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(1\Big/\left((1+2\,n)\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right)$$

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

$$\left(-\text{AppellF1}\left[1+2n,n,n,2+2n,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]\right.$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n$$

$$\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n-$$

$$\text{AppellF1}\left[1+2n,n,n,2(1+n),-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},\right.$$

$$\left.-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n$$

$$\left.\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\right)+$$

$$\left(1\Big/\left((1+2n)\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\right)\right)$$

$$\left(\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2\right)^{-n}\left(-\frac{1}{2}\text{AppellF1}\left[1+2n,n,n,2(1+n),\right.\right.$$

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

$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n-\frac{1}{2}$$

$$\text{AppellF1}\left[1+2n,n,n,2+2n,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},\frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n-$$

$$\left(\left(\left(\frac{1}{4}-\frac{i}{4}\right)n(1+2n)\text{AppellF1}\left[2+2n,n,1+n,1+2(1+n),\right.\right.\right.$$

$$\left.-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]$$

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

$$\left(\left(\frac{1}{4}+\frac{i}{4}\right) n\,(1+2n)\,\text{AppellF1}\left[2+2n,1+n,n,1+2(1+n),-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2\right)\Big/\left((1+n)\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)^2\right)\right)$$

$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)-n\,\text{AppellF1}\left[1+2n,n,n,2(1+n),-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]$$

$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^{-1+n}\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\left(\frac{\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2\left(-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)^2}\right)-n\,\text{AppellF1}\left[1+2n,n,n,2(1+n),-\frac{1+i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},-\frac{1-i}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right]$$

$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^{-1+n}$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)\left(\frac{\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)}-\frac{\text{Sec}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]^2\left(i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)}{2\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)^2}\right)-\left(-1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]\right)$$

$$\left(\frac{-i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n\left(\frac{i+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}\right)^n$$

$$\left(-\left(\left(\left(\left(\frac{1}{2}+\frac{i}{2}\right) n\,(1+2n)\,\text{AppellF1}\left[2+2n,n,1+n,3+2n,\frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]},\right.\right.\right.\right.\right.$$

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

$$\Big(\left(2+2 n\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]\right)^2\Big)\Big)-\Big(\left(\frac{1}{2}-\frac{i}{2}\right) n\left(1+2 n\right)\text{AppellF1}\Big[$$

$$2+2 n,\ 1+n,\ n,\ 3+2 n,\ \frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]},\ \frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\Big]$$

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

$$n\,\text{AppellF1}\Big[1+2 n,\ n,\ n,\ 2+2 n,\ \frac{1-i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]},\ \frac{1+i}{1+\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}\Big]$$

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

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

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

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

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

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

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

Problem 153: Result more than twice size of optimal antiderivative.

$$\int \text{Csc}[e+f x]\left(a+b\,\text{Sin}[e+f x]\right)dx$$

Optimal (type 3, 17 leaves, 2 steps):

$$b x-\frac{a\,\text{ArcTanh}[\text{Cos}[e+f x]]}{f}$$

Result (type 3, 43 leaves):

$$b\,x-\frac{a\,\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]}{f}+\frac{a\,\text{Log}\left[\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]}{f}$$

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

$$\int \text{Csc}[e+f\,x]\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2\,dx$$

Optimal (type 3, 35 leaves, 3 steps):

$$2\,a\,b\,x-\frac{a^2\,\text{ArcTanh}[\text{Cos}[e+f\,x]]}{f}-\frac{b^2\,\text{Cos}[e+f\,x]}{f}$$

Result (type 3, 76 leaves):

$$2\,a\,b\,x-\frac{b^2\,\text{Cos}[e]\,\text{Cos}[f\,x]}{f}-\frac{a^2\,\text{Log}\left[\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]}{f}+\frac{a^2\,\text{Log}\left[\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right]}{f}+\frac{b^2\,\text{Sin}[e]\,\text{Sin}[f\,x]}{f}$$

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

$$\int \text{Csc}[e+f\,x]^2\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2\,dx$$

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

$$b^2\,x-\frac{2\,a\,b\,\text{ArcTanh}[\text{Cos}[e+f\,x]]}{f}-\frac{a^2\,\text{Cot}[e+f\,x]}{f}$$

Result (type 3, 76 leaves):

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

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

$$\int \text{Csc}[e+f\,x]^3\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2\,dx$$

Optimal (type 3, 59 leaves, 5 steps):

$$-\frac{\left(a^2+2\,b^2\right)\,\text{ArcTanh}[\text{Cos}[e+f\,x]]}{2\,f}-\frac{2\,a\,b\,\text{Cot}[e+f\,x]}{f}-\frac{a^2\,\text{Cot}[e+f\,x]\,\text{Csc}[e+f\,x]}{2\,f}$$

Result (type 3, 133 leaves):

$$\frac{1}{8 f}\left(-8 a b \operatorname{Cot}\left[\frac{1}{2}(e+f x)\right]-a^2 \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^2-4 a^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right]-8 b^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right]+4 a^2 \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+8 b^2 \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+a^2 \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2+8 a b \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)$$

Problem 165: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Csc}[e+f x]^5 (a+b \operatorname{Sin}[e+f x])^2 \, dx$$

Optimal (type 3, 110 leaves, 6 steps):

$$-\frac{\left(3 a^2+4 b^2\right) \operatorname{ArcTanh}[\operatorname{Cos}[e+f x]]}{8 f}-\frac{2 a b \operatorname{Cot}[e+f x]}{f}-\frac{2 a b \operatorname{Cot}[e+f x]^3}{3 f}-\frac{\left(3 a^2+4 b^2\right) \operatorname{Cot}[e+f x] \operatorname{Csc}[e+f x]}{8 f}-\frac{a^2 \operatorname{Cot}[e+f x] \operatorname{Csc}[e+f x]^3}{4 f}$$

Result (type 3, 255 leaves):

$$-\frac{4 a b \operatorname{Cot}[e+f x]}{3 f}-\frac{3 a^2 \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^2}{32 f}-\frac{b^2 \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^2}{8 f}-\frac{a^2 \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^4}{64 f}-\frac{2 a b \operatorname{Cot}[e+f x] \operatorname{Csc}[e+f x]^2}{3 f}-\frac{3 a^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right]}{8 f}-\frac{b^2 \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right]}{2 f}+\frac{3 a^2 \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{8 f}+\frac{b^2 \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{2 f}+\frac{3 a^2 \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{32 f}+\frac{b^2 \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{8 f}+\frac{a^2 \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^4}{64 f}$$

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

$$\int \operatorname{Csc}[e+f x]^4 (a+b \operatorname{Sin}[e+f x])^3 \, dx$$

Optimal (type 3, 109 leaves, 6 steps):

$$-\frac{b\left(3 a^2+2 b^2\right) \operatorname{ArcTanh}[\operatorname{Cos}[e+f x]]}{2 f}-\frac{a\left(2 a^2+9 b^2\right) \operatorname{Cot}[e+f x]}{3 f}-\frac{7 a^2 b \operatorname{Cot}[e+f x] \operatorname{Csc}[e+f x]}{6 f}-\frac{a^2 \operatorname{Cot}[e+f x] \operatorname{Csc}[e+f x]^2 (a+b \operatorname{Sin}[e+f x])}{3 f}$$

Result (type 3, 525 leaves):

$$\left(\left(-2\,a^3\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-9\,a\,b^2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$
$$\left.\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Sin}[e+f\,x]^3\right)\Big/\left(6\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)-$$
$$\frac{3\,a^2\,b\,\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Sin}[e+f\,x]^3}{8\,f\,(a+b\,\text{Sin}[e+f\,x])^3}-$$
$$\left(a^3\,\text{Cot}\left[\frac{1}{2}\,(e+f\,x)\right]\,\text{Csc}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Sin}[e+f\,x]^3\right)\Big/$$
$$\left(24\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)+$$
$$\left(\left(-3\,a^2\,b-2\,b^3\right)\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\right]\,\text{Sin}[e+f\,x]^3\right)\Big/$$
$$\left(2\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)+$$
$$\left(\left(3\,a^2\,b+2\,b^3\right)\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Log}\left[\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right]\,\text{Sin}[e+f\,x]^3\right)\Big/$$
$$\left(2\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)+\frac{3\,a^2\,b\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]^3}{8\,f\,(a+b\,\text{Sin}[e+f\,x])^3}+$$
$$\left((b+a\,\text{Csc}[e+f\,x])^3\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(2\,a^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+9\,a\,b^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$
$$\left.\text{Sin}[e+f\,x]^3\right)\Big/\left(6\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)+$$
$$\left(a^3\,(b+a\,\text{Csc}[e+f\,x])^3\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Sin}[e+f\,x]^3\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(24\,f\,(a+b\,\text{Sin}[e+f\,x])^3\right)$$

Problem 174: Result more than twice size of optimal antiderivative.

$$\int \text{Csc}[e+f\,x]^5\,(a+b\,\text{Sin}[e+f\,x])^3\,dx$$

Optimal (type 3, 134 leaves, 7 steps):

$$-\frac{3\,a\,\left(a^2+4\,b^2\right)\,\text{ArcTanh}[\text{Cos}[e+f\,x]]}{8\,f}-$$
$$\frac{b\,\left(2\,a^2+b^2\right)\,\text{Cot}[e+f\,x]}{f}-\frac{3\,a\,\left(a^2+4\,b^2\right)\,\text{Cot}[e+f\,x]\,\text{Csc}[e+f\,x]}{8\,f}-$$
$$\frac{3\,a^2\,b\,\text{Cot}[e+f\,x]\,\text{Csc}[e+f\,x]^2}{4\,f}-\frac{a^2\,\text{Cot}[e+f\,x]\,\text{Csc}[e+f\,x]^3\,(a+b\,\text{Sin}[e+f\,x])}{4\,f}$$

Result (type 3, 322 leaves):

$$\frac{\left(-2 a^2 b \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-b^3 \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right) \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]}{2 f}-\frac{3\left(a^3+4 a b^2\right) \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^2}{32 f}-\frac{a^2 b \operatorname{Cot}\left[\frac{1}{2}(e+f x)\right] \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^2}{8 f}-\frac{a^3 \operatorname{Csc}\left[\frac{1}{2}(e+f x)\right]^4}{64 f}-\frac{3\left(a^3+4 a b^2\right) \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]\right]}{8 f}+\frac{3\left(a^3+4 a b^2\right) \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]}{8 f}+\frac{3\left(a^3+4 a b^2\right) \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{32 f}+\frac{a^3 \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^4}{64 f}+\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]\left(2 a^2 b \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+b^3 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{2 f}+\frac{a^2 b \operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}{8 f}$$

Problem 206: Result unnecessarily involves imaginary or complex numbers.

$$\int \operatorname{Csc}[e+f x]^2 \sqrt{a+b \operatorname{Sin}[e+f x]}\, dx$$

Optimal (type 4, 213 leaves, 9 steps):

$$-\frac{\operatorname{Cot}[e+f x] \sqrt{a+b \operatorname{Sin}[e+f x]}}{f}-\frac{\operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 b}{a+b}\right] \sqrt{a+b \operatorname{Sin}[e+f x]}}{f \sqrt{\frac{a+b \operatorname{Sin}[e+f x]}{a+b}}}+\frac{a \operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 b}{a+b}\right] \sqrt{\frac{a+b \operatorname{Sin}[e+f x]}{a+b}}}{f \sqrt{a+b \operatorname{Sin}[e+f x]}}+\frac{b \operatorname{EllipticPi}\left[2, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 b}{a+b}\right] \sqrt{\frac{a+b \operatorname{Sin}[e+f x]}{a+b}}}{f \sqrt{a+b \operatorname{Sin}[e+f x]}}$$

Result (type 4, 425 leaves):

$$-\frac{\text{Cot}[e+f x]\,\sqrt{a+b\,\text{Sin}[e+f x]}}{f}+\frac{1}{4 f}$$

$$b\left(-\frac{2\,\text{EllipticPi}\left[2,\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}{\sqrt{a+b\,\text{Sin}[e+f x]}}-\left(2\,\mathrm{i}\,\text{Cos}[e+f x]\,\text{Cos}\left[2\,(e+f x)\right]\right.\right.$$

$$\left(2\,a\,(a-b)\,\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\,\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]+\right.$$

$$b\left(2\,a\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\,\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]-\right.$$

$$\left.\left.b\,\text{EllipticPi}\left[\frac{a+b}{a},\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\,\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]\right)\right)$$

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

$$\left(-2\,a^2+b^2+4\,a\,\left(a+b\,\text{Sin}[e+f x]\right)-2\,\left(a+b\,\text{Sin}[e+f x]\right)^2\right)$$

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

Problem 210: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\text{Csc}[e+f x]^2}{\sqrt{a+b\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 4, 222 leaves, 9 steps):

$$-\frac{\text{Cot}[e+f x]\sqrt{a+b\,\text{Sin}[e+f x]}}{a f}-\frac{\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 b}{a+b}\right]\sqrt{a+b\,\text{Sin}[e+f x]}}{a f\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}+$$

$$\frac{\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}{f\sqrt{a+b\,\text{Sin}[e+f x]}}-$$

$$\frac{b\,\text{EllipticPi}\left[2,\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}{a f\sqrt{a+b\,\text{Sin}[e+f x]}}$$

Result (type 4, 431 leaves):

$$-\frac{\text{Cot}[e+f x]\sqrt{a+b\,\text{Sin}[e+f x]}}{a f}+\frac{1}{4 a f}$$

$$b\left(\frac{6\,\text{EllipticPi}\left[2,\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 b}{a+b}\right]\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}{\sqrt{a+b\,\text{Sin}[e+f x]}}-\left(2\,i\,\text{Cos}[e+f x]\,\text{Cos}[2\,(e+f x)]\right.\right.$$

$$\left(2 a\,(a-b)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]+\right.$$

$$b\left(2 a\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]-\right.$$

$$\left.\left.b\,\text{EllipticPi}\left[\frac{a+b}{a},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{a+b}}\sqrt{a+b\,\text{Sin}[e+f x]}\right],\frac{a+b}{a-b}\right]\right)\right)$$

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

$$\left(-2 a^2+b^2+4 a\,(a+b\,\text{Sin}[e+f x])-2\,(a+b\,\text{Sin}[e+f x])^2\right)$$

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

Problem 211: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$-\frac{\text{Cos}[c+d\,x]\ \sqrt{a+b\,\text{Sin}[c+d\,x]}}{d\,\sqrt{\text{Sin}[c+d\,x]}}+\frac{1}{a\,d}(a-b)\ \sqrt{a+b}\ \sqrt{\frac{a\,(1-\text{Csc}[c+d\,x])}{a+b}}\ \sqrt{\frac{a\,(1+\text{Csc}[c+d\,x])}{a-b}}\ \text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sin}[c+d\,x]}}{\sqrt{a+b}\ \sqrt{\text{Sin}[c+d\,x]}}\Big],\ -\frac{a+b}{a-b}\Big]\ \text{Tan}[c+d\,x]-\frac{1}{d}\sqrt{a+b}\ \sqrt{\frac{a\,(1-\text{Csc}[c+d\,x])}{a+b}}\ \sqrt{\frac{a\,(1+\text{Csc}[c+d\,x])}{a-b}}\ \text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sin}[c+d\,x]}}{\sqrt{a+b}\ \sqrt{\text{Sin}[c+d\,x]}}\Big],\ -\frac{a+b}{a-b}\Big]\ \text{Tan}[c+d\,x]+\frac{1}{b\,d}a\,\sqrt{a+b}\ \sqrt{\frac{a\,(1-\text{Csc}[c+d\,x])}{a+b}}\ \sqrt{\frac{a\,(1+\text{Csc}[c+d\,x])}{a-b}}\ \text{EllipticPi}\Big[\frac{a+b}{b},\ \text{ArcSin}\Big[\frac{\sqrt{a+b\,\text{Sin}[c+d\,x]}}{\sqrt{a+b}\ \sqrt{\text{Sin}[c+d\,x]}}\Big],\ -\frac{a+b}{a-b}\Big]\ \text{Tan}[c+d\,x]$$

Result (type 4, 10 847 leaves):

$$\Bigg(\sqrt{\text{Sin}[c+d\,x]}\ \sqrt{a+b\,\text{Sin}[c+d\,x]}\ \text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]$$

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

$$\Bigg(2+\Bigg(2\,\text{Cot}\Big[\frac{1}{2}(c+d\,x)\Big]^2\ \Big(1+\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Bigg(\Big(i\,a-b-\sqrt{-a^2+b^2}\Big)\ \Big(b-\sqrt{-a^2+b^2}\Big)$$

$$\left(\mathrm{i}\, a+b+\sqrt{-a^2+b^2}\right) \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a \,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

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

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

$$\text{EllipticPi}\left[\frac{2 \sqrt{-a^2+b^2}}{-\mathrm{i}\, a+b+\sqrt{-a^2+b^2}}, \text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a \,\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2 \sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\, a+b+\sqrt{-a^2+b^2}\right) \text{EllipticPi}\left[\frac{2 \sqrt{-a^2+b^2}}{\mathrm{i}\, a+b+\sqrt{-a^2+b^2}},\right.$$

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

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

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

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

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

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

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

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

$$\left(\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

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

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

$$\text{EllipticPi}\left[\frac{2\,\sqrt{-a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{-a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\Big]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\Big[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},$$

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

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

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

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

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

$$\frac{1}{2\sqrt{2}\sqrt{\frac{\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}}\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}}$$

$$\left(-\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2}+\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2}{2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}\right)$$

$$\Bigg(2+\Bigg(2\,\mathrm{Cot}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\Big(1+\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)\,\Bigg(\Big(\mathbb{i}\,a-b-\sqrt{-a^2+b^2}\Big)\,\Big(b-\sqrt{-a^2+b^2}\Big)$$

$$\Big(\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\Big)\,\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\,\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\Big]\,\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{-a^2+b^2}}}\,\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\Big(b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)+a^2\,\sqrt{-a^2+b^2}\,\Bigg(-\Big(\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\Big)$$

$$\mathrm{EllipticPi}\Big[\frac{2\,\sqrt{-a^2+b^2}}{-\mathbb{i}\,a+b+\sqrt{-a^2+b^2}},\,\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\Big],$$

$$\frac{2\,\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\Big]-\Big(-\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\Big)\,\mathrm{EllipticPi}\Big[\frac{2\,\sqrt{-a^2+b^2}}{\mathbb{i}\,a+b+\sqrt{-a^2+b^2}},$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\Big],\,\frac{2\,\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\Big]\Bigg)$$

$$\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\,\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left.\left.\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)}{a^2-b^2}}\,\right)\right)\Big/$$

$$\left(a\left(-\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\right)\left(\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\right)\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}\right.$$

$$\left.\left.\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\right)+$$

$$\frac{1}{2\sqrt{2}\,\sqrt{\frac{a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}}\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\sqrt{\frac{\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(\frac{b\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}-\right.$$

$$\left(\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\right)$$

$$\left(2+\left(2\,\text{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\left(\left(\mathbb{i}\,a-b-\sqrt{-a^2+b^2}\right)\left(b-\sqrt{-a^2+b^2}\right)\right.\right.\right.$$

$$\left(\mathbb{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\Big]\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{-a^2+b^2}}}\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+a^2\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\right.$$

$$\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left.\left.\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2-b^2}}\right)\right)\Big/$$

$$\left(a\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}\right.$$

$$\left.\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$

$$\frac{1}{\sqrt{2}}\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\,\sqrt{\frac{a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}$$

$$\left(-\left(\left(2\,\mathrm{Cot}\left[\frac{1}{2}\,(c+d\,x)\right]^2\left(b\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2+a\,\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right.\right.\right.$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\left(\left(\mathrm{i}\,a-b-\sqrt{-a^2+b^2}\right)\left(b-\sqrt{-a^2+b^2}\right)\right.$$

$$\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\,\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\right]\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{-a^2+b^2}}}\,\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+a^2\,\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\right.$$

$$\mathrm{EllipticPi}\left[\frac{2\,\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\,\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\,\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\mathrm{EllipticPi}\left[\frac{2\,\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\,\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\Bigg)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\ \sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\sqrt{\left(\frac{1}{a^2-b^2}a\,\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\right)}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a\,\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\Bigg)\Bigg)+$$

$$\Bigg(2\,\text{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\,\Bigg(\left(\mathrm{i}\,a-b-\sqrt{-a^2+b^2}\right)\,\left(b-\sqrt{-a^2+b^2}\right)$$

$$\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\,\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\right]\,\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-b+\sqrt{-a^2+b^2}}}\ \sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+a^2\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\right.$$

$$\mathrm{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\mathrm{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)$$

$$\sqrt{-\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{-a^2+b^2}}}\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left.\left.\sqrt{\frac{a\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}{a^2-b^2}}\right)\right)\Bigg/$$

$$\left(a\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}}\right.$$

$$\left.\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)-$$

$$\left(\operatorname{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\left(\left(\mathrm{i}\,a-b-\sqrt{-a^2+b^2}\right)\left(b-\sqrt{-a^2+b^2}\right)\right.\right.$$

$$\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\right]\sqrt{\frac{a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{-a^2+b^2}}}\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(b+\sqrt{-a^2+b^2}+a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+a^2\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\right.$$

$$\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\right.$$

$$\left.\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\operatorname{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)$$

$$\sqrt{-\frac{a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{b+\sqrt{-a^2+b^2}}}\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\operatorname{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left.\left.\sqrt{\frac{a\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)}{a^2-b^2}}\right)\right)\Big/$$

$$\left(2\sqrt{-a^2+b^2}\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\right.$$

$$\left(\frac{b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right)^{3/2}$$

$$\left.\left(a+2\,b\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right)-$$

$$\left(2\,\mathrm{Cot}\left[\frac{1}{2}\left(c+d\,x\right)\right]\mathrm{Csc}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)\right.$$

$$\left(\left(\mathrm{i}\,a-b-\sqrt{-a^2+b^2}\right)\left(b-\sqrt{-a^2+b^2}\right)\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\mathrm{EllipticE}\left[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\Bigg]\sqrt{\frac{a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{-b+\sqrt{-a^2+b^2}}}$$

$$\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2+b^2}}}\left(b+\sqrt{-a^2+b^2}+a\,\mathrm{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+$$

$$a^2\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\mathrm{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\Bigg] -$$

$$\left(-\text{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\text{i}\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\Bigg)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\ \sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left.\left.\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2-b^2}}\right)\right)\Bigg/$$

$$\left(a\left(-\text{i}\,a+b+\sqrt{-a^2+b^2}\right)\left(\text{i}\,a+b+\sqrt{-a^2+b^2}\right)\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}\right.$$

$$\left.\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$

$$\left(2\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right.$$

$$\left(\frac{1}{2} a \left(\mathrm{i}\, a - b - \sqrt{-a^2+b^2}\right) \left(b - \sqrt{-a^2+b^2}\right) \left(\mathrm{i}\, a + b + \sqrt{-a^2+b^2}\right) \text{EllipticE}\left[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\Big] \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\sqrt{\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{-a^2+b^2}}} \sqrt{\frac{-b+\sqrt{-a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}} -$$

$$\left(a \left(\mathrm{i}\, a - b - \sqrt{-a^2+b^2}\right) \left(b - \sqrt{-a^2+b^2}\right) \left(\mathrm{i}\, a + b + \sqrt{-a^2+b^2}\right)\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right], \frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{-a^2+b^2}}} \left(b+\sqrt{-a^2+b^2}+a \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right) \Big/$$

$$\left(4\sqrt{-a^2+b^2} \sqrt{\frac{-b+\sqrt{-a^2+b^2}-a \text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}\right) +$$

$$\left(a \left(\mathrm{i}\, a - b - \sqrt{-a^2+b^2}\right) \left(b - \sqrt{-a^2+b^2}\right) \left(\mathrm{i}\, a + b + \sqrt{-a^2+b^2}\right)\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{-a^2+b^2}}{-b+\sqrt{-a^2+b^2}}\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\sqrt{\frac{-b+\sqrt{-a^2+b^2}-a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}\ \left(b+\sqrt{-a^2+b^2}+\right.$$

$$\left.\left.a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(4\left(-b+\sqrt{-a^2+b^2}\right)\sqrt{\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{-b+\sqrt{-a^2+b^2}}}\right)+$$

$$\frac{1}{2\left(a^2-b^2\right)\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2-b^2}}}\ a^3\sqrt{-a^2+b^2}$$

$$\left(-\left(i\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-i\,a+b+\sqrt{-a^2+b^2}},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-$$

$$\left(-i\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{i\,a+b+\sqrt{-a^2+b^2}},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\ \frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\ \sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(b\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2+a\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$

$$\frac{1}{4\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}\,a^3\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}\,\sqrt{\frac{a\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)}{a^2-b^2}}\;-$$

$$\frac{1}{4\left(b+\sqrt{-a^2+b^2}\right)\sqrt{-\frac{a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}}\,a^3\sqrt{-a^2+b^2}\left(-\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]-\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\text{EllipticPi}\left[\frac{2\sqrt{-a^2+b^2}}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}},\,\text{ArcSin}\left[\frac{\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}}{\sqrt{2}}\right],\,\frac{2\sqrt{-a^2+b^2}}{b+\sqrt{-a^2+b^2}}\right]\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\sqrt{\frac{a\left(a+2 b \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)}{a^2-b^2}} -$$

$$\Bigg(a\left(\mathrm{i}\, a-b-\sqrt{-a^2+b^2}\right)\left(b-\sqrt{-a^2+b^2}\right)\left(\mathrm{i}\, a+b+\sqrt{-a^2+b^2}\right)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \sqrt{\frac{a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{-a^2+b^2}}}\left(b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\right)$$

$$\sqrt{1-\frac{-b+\sqrt{-a^2+b^2}-a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{-b+\sqrt{-a^2+b^2}}}\Bigg) \Bigg/$$

$$\left(4 \sqrt{2} \sqrt{-a^2+b^2} \sqrt{1-\frac{-b+\sqrt{-a^2+b^2}-a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{-a^2+b^2}}}\right. +$$

$$a^2 \sqrt{-a^2+b^2} \sqrt{-\frac{a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{-a^2+b^2}}} \sqrt{\frac{b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\sqrt{\frac{a\left(a+2 b \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)}{a^2-b^2}}$$

$$\Bigg(-\Bigg(\left(a\left(\mathrm{i}\, a+b+\sqrt{-a^2+b^2}\right) \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right) \Bigg/$$

$$\Bigg(4 \sqrt{2} \sqrt{-a^2+b^2} \sqrt{\frac{b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{2 \sqrt{-a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{-a^2+b^2}+a \,\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]}{b+\sqrt{-a^2+b^2}}}\Bigg(1-$$

$$\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}}\Bigg)\Bigg)\Bigg)-\Bigg(a\,\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\text{Sec}\Big[$$

$$\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)\Bigg/\Bigg(4\,\sqrt{2}\,\sqrt{-a^2+b^2}\,\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{2\,\sqrt{-a^2+b^2}}}$$

$$\sqrt{1-\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{b+\sqrt{-a^2+b^2}}}$$

$$\left(1-\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\mathrm{i}\,a+b+\sqrt{-a^2+b^2}}\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a\,\left(-\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\left(\mathrm{i}\,a+b+\sqrt{-a^2+b^2}\right)\,\sqrt{\frac{b+\sqrt{-a^2+b^2}+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2+b^2}}}$$

$$\left(a+2\,b\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 216: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\text{Sin}[e+f\,x])^m}{a+b\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 6, 195 leaves, 5 steps):

$$-\frac{1}{\left(a^2-b^2\right) f} a\, d\, \text{AppellF1}\left[\frac{1}{2}, \frac{1-m}{2}, 1, \frac{3}{2}, \text{Cos}[e+f x]^2, -\frac{b^2 \text{Cos}[e+f x]^2}{a^2-b^2}\right] \text{Cos}[e+f x] \left(d \text{Sin}[e+f x]\right)^{-1+m} \left(\text{Sin}[e+f x]^2\right)^{\frac{1-m}{2}} + \frac{1}{\left(a^2-b^2\right) f} b\, \text{AppellF1}\left[\frac{1}{2}, -\frac{m}{2}, 1, \frac{3}{2}, \text{Cos}[e+f x]^2, -\frac{b^2 \text{Cos}[e+f x]^2}{a^2-b^2}\right] \text{Cos}[e+f x] \left(d \text{Sin}[e+f x]\right)^m \left(\text{Sin}[e+f x]^2\right)^{-m/2}$$

Result (type 6, 6755 leaves):

$$\left(\left(d \text{Sin}[e+f x]\right)^m \text{Tan}[e+f x] \left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^m \left(-\left(\left(a^3 (3+m) \text{AppellF1}\left[\frac{1+m}{2}, \frac{m}{2}, 1, \frac{3+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \Big/ \left((1+m) \left(-a^2 (3+m) \text{AppellF1}\left[\frac{1+m}{2}, \frac{m}{2}, 1, \frac{3+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{3+m}{2}, \frac{m}{2}, 2, \frac{5+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 m\, \text{AppellF1}\left[\frac{3+m}{2}, \frac{2+m}{2}, 1, \frac{5+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right) \left(-b^2 \text{Tan}[e+f x]^2 + a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right) + \frac{1}{b (2+m) \left(b^2 \text{Tan}[e+f x]^2 - a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)} \text{Tan}[e+f x] \left(\left(a^2 \left(a^2-b^2\right) (4+m) \text{AppellF1}\left[\frac{2+m}{2}, \frac{1}{2} (-1+m), 1, \frac{4+m}{2}, -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \sqrt{1+\text{Tan}[e+f x]^2}\right) \Big/ \left(-a^2 (4+m) \text{AppellF1}\left[\frac{2+m}{2}, \frac{1}{2} (-1+m), 1, \frac{4+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{4+m}{2}, \frac{1}{2} (-1+m), 2, \frac{6+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 (-1+m) \text{AppellF1}\left[\frac{4+m}{2}, \frac{1+m}{2}, 1, \frac{6+m}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right) + \text{Hypergeometric2F1}\left[\frac{1+m}{2}, \frac{2+m}{2}, \frac{4+m}{2}, -\text{Tan}[e+f x]^2\right] \left(1+\text{Tan}[e+f x]^2\right)^{m/2} \left(-b^2 \text{Tan}[e+f x]^2 + a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right)\right) \Big/$$

$$\left(f\,(a+b\,\mathrm{Sin}[e+f\,x])\,\left(\mathrm{Sec}[e+f\,x]^2\,\left(\frac{\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)^m\right.\right.$$

$$\left(-\left(\left(a^3\,(3+m)\,\mathrm{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]\right)\right/\right.$$

$$\left((1+m)\,\left(-a^2\,(3+m)\,\mathrm{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\mathrm{Tan}[e+f\,x]^2,\right.\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]+\left(2\,(a^2-b^2)\,\mathrm{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},\right.\right.$$

$$\left.2,\frac{5+m}{2},-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]+a^2\,m$$

$$\left.\mathrm{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]\right)$$

$$\left.\left.\left.\mathrm{Tan}[e+f\,x]^2\right)\,\left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\,(1+\mathrm{Tan}[e+f\,x]^2)\right)\right)\right)+$$

$$\frac{1}{b\,(2+m)\,\left(b^2\,\mathrm{Tan}[e+f\,x]^2-a^2\,(1+\mathrm{Tan}[e+f\,x]^2)\right)}\,\mathrm{Tan}[e+f\,x]$$

$$\left(\left(a^2\,(a^2-b^2)\,(4+m)\,\mathrm{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}\,(-1+m),1,\frac{4+m}{2},\right.\right.\right.$$

$$\left.\left.-\mathrm{Tan}[e+f\,x]^2,\frac{(-a^2+b^2)\,\mathrm{Tan}[e+f\,x]^2}{a^2}\right]\sqrt{1+\mathrm{Tan}[e+f\,x]^2}\right)\Big/$$

$$\left(-a^2\,(4+m)\,\mathrm{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}\,(-1+m),1,\frac{4+m}{2},-\mathrm{Tan}[e+f\,x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]+\left(2\,(a^2-b^2)\,\mathrm{AppellF1}\left[\frac{4+m}{2},\frac{1}{2}\,(-1+m),2,\frac{6+m}{2},\right.\right.$$

$$\left.-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]+a^2\,(-1+m)\,\mathrm{AppellF1}\left[\frac{4+m}{2},\right.$$

$$\left.\left.\left.\frac{1+m}{2},1,\frac{6+m}{2},-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]\right)\mathrm{Tan}[e+f\,x]^2\right)+$$

$$\mathrm{Hypergeometric2F1}\left[\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\mathrm{Tan}[e+f\,x]^2\right]\,(1+\mathrm{Tan}[e+f\,x]^2)^{m/2}$$

$$\left.\left.\left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\,(1+\mathrm{Tan}[e+f\,x]^2)\right)\right)\right)+$$

$$m\,\mathrm{Tan}[e+f\,x]\,\left(\frac{\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)^{-1+m}\left(-\frac{\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]^2}{(1+\mathrm{Tan}[e+f\,x]^2)^{3/2}}+\right.$$

$$\left.\frac{\mathrm{Sec}[e+f\,x]^2}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)$$

$$\left(-\left(\left(a^3\,(3+m)\,\mathrm{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\mathrm{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\right]\right)\right/\right.$$

$$\left(\left(1+m\right)\left(-a^2\left(3+m\right)\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2 m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right)+$$

$$\frac{1}{b\left(2+m\right)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)}\text{Tan}[e+f x]$$

$$\left(\left(a^2\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}\left(-1+m\right),1,\frac{4+m}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\sqrt{1+\text{Tan}[e+f x]^2}\right)\Big/\right.$$

$$\left(-a^2(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}\left(-1+m\right),1,\frac{4+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{4+m}{2},\frac{1}{2}\left(-1+m\right),2,\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2\left(-1+m\right)\text{AppellF1}\left[\frac{4+m}{2},\frac{1+m}{2},1,\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)+$$

$$\text{Hypergeometric2F1}\left[\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[e+f x]^2\right]\left(1+\text{Tan}[e+f x]^2\right)^{m/2}$$

$$\left.\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\right)+\text{Tan}[e+f x]\left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^m$$

$$\left(\left(a^3\left(3+m\right)\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right.\right.$$

$$\left.\left(2\,a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-2\,b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\Big/\left(\left(1+m\right)\right.$$

$$\left(-a^2\left(3+m\right)\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2 m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\left.\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\right)-$$

$$\Big(a^3\ (3+m)\ \Big(-\frac{1}{3+m}m\ (1+m)\ \text{AppellF1}\Big[1+\frac{1+m}{2},\ 1+\frac{m}{2},\ 1,\ 1+\frac{3+m}{2},\ -\text{Tan}[e+f\,x]^2,$$

$$\Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ +\ \frac{1}{3+m}$$

$$2\ \Big(-1+\frac{b^2}{a^2}\Big)\ (1+m)\ \text{AppellF1}\Big[1+\frac{1+m}{2},\ \frac{m}{2},\ 2,\ 1+\frac{3+m}{2},\ -\text{Tan}[e+f\,x]^2,$$

$$\Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\Big)\Big)\Big/\ \Big(\big(1+m\big)$$

$$\Big(-a^2\ (3+m)\ \text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 1,\ \frac{3+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ +$$

$$\Big(2\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{3+m}{2},\ \frac{m}{2},\ 2,\ \frac{5+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ +$$

$$a^2\,m\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{2+m}{2},\ 1,\ \frac{5+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\Big)$$

$$\text{Tan}[e+f\,x]^2\Big)\ \Big(-b^2\,\text{Tan}[e+f\,x]^2+a^2\ \big(1+\text{Tan}[e+f\,x]^2\big)\Big)\Big)\ +$$

$$\Big(a^3\ (3+m)\ \text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 1,\ \frac{3+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]$$

$$\Big(2\ \Big(2\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{3+m}{2},\ \frac{m}{2},\ 2,\ \frac{5+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ +$$

$$a^2\,m\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{2+m}{2},\ 1,\ \frac{5+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\Big)$$

$$\text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ -\ a^2\ (3+m)\ \Big(-\frac{1}{3+m}m\ (1+m)\ \text{AppellF1}\Big[1+\frac{1+m}{2},\ 1+\frac{m}{2},\ 1,$$

$$1+\frac{3+m}{2},\ -\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ +$$

$$\frac{1}{3+m}2\ \Big(-1+\frac{b^2}{a^2}\Big)\ (1+m)\ \text{AppellF1}\Big[1+\frac{1+m}{2},\ \frac{m}{2},\ 2,\ 1+\frac{3+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\Big)\ +$$

$$\text{Tan}[e+f\,x]^2\ \Big(2\ (a^2-b^2)\ \Big(-\frac{1}{5+m}m\ (3+m)\ \text{AppellF1}\Big[1+\frac{3+m}{2},\ 1+\frac{m}{2},\ 2,\ 1+\frac{5+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ +$$

$$\frac{1}{5+m}4\ \Big(-1+\frac{b^2}{a^2}\Big)\ (3+m)\ \text{AppellF1}\Big[1+\frac{3+m}{2},\ \frac{m}{2},\ 3,\ 1+\frac{5+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\Big)\ +$$

$$a^2\,m\ \Big(\frac{1}{5+m}2\ \Big(-1+\frac{b^2}{a^2}\Big)\ (3+m)\ \text{AppellF1}\Big[1+\frac{3+m}{2},\ \frac{2+m}{2},\ 2,\ 1+\frac{5+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\ \Big(-1+\frac{b^2}{a^2}\Big)\ \text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\ \text{Tan}[e+f\,x]\ -$$

$$\frac{1}{5+m}(2+m)\ (3+m)\ \text{AppellF1}\Big[1+\frac{3+m}{2},\ 1+\frac{2+m}{2},\ 1,\ 1+\frac{5+m}{2},$$
$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\ \text{Sec}[e+f x]^2\ \text{Tan}[e+f x]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(\Big((1+m)\ \Big(-a^2\ (3+m)\ \text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 1,\ \frac{3+m}{2},\ -\text{Tan}[e+f x]^2,$$
$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Big(2\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{3+m}{2},\ \frac{m}{2},$$
$$2,\ \frac{5+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2 m$$
$$\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{2+m}{2},\ 1,\ \frac{5+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)$$
$$\text{Tan}[e+f x]^2\Big)^2\ \left(-b^2\,\text{Tan}[e+f x]^2+a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Big)-$$
$$\frac{1}{b\ (2+m)\ \left(b^2\,\text{Tan}[e+f x]^2-a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)^2}\ \text{Tan}[e+f x]$$
$$\left(-2\,a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+2\,b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)$$
$$\Big(\Big(a^2\ (a^2-b^2)\ (4+m)\ \text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}\ (-1+m),\ 1,\ \frac{4+m}{2},$$
$$-\text{Tan}[e+f x]^2,\ \frac{(-a^2+b^2)\ \text{Tan}[e+f x]^2}{a^2}\Big]\ \sqrt{1+\text{Tan}[e+f x]^2}\Big)\Big/$$
$$\Big(-a^2\ (4+m)\ \text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}\ (-1+m),\ 1,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,$$
$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Big(2\ (a^2-b^2)\ \text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1}{2}\ (-1+m),\ 2,\ \frac{6+m}{2},$$
$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\ (-1+m)\ \text{AppellF1}\Big[\frac{4+m}{2},$$
$$\frac{1+m}{2},\ 1,\ \frac{6+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\ \text{Tan}[e+f x]^2\Big)+$$
$$\text{Hypergeometric2F1}\Big[\frac{1+m}{2},\ \frac{2+m}{2},\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2\Big]\ \left(1+\text{Tan}[e+f x]^2\right)^{m/2}$$
$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\Big)+$$
$$\frac{1}{b\ (2+m)\ \left(b^2\,\text{Tan}[e+f x]^2-a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)}\ \text{Sec}[e+f x]^2$$
$$\Big(\Big(a^2\ (a^2-b^2)\ (4+m)\ \text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}\ (-1+m),\ 1,\ \frac{4+m}{2},$$
$$-\text{Tan}[e+f x]^2,\ \frac{(-a^2+b^2)\ \text{Tan}[e+f x]^2}{a^2}\Big]\ \sqrt{1+\text{Tan}[e+f x]^2}\Big)\Big/$$
$$\Big(-a^2\ (4+m)\ \text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}\ (-1+m),\ 1,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+\left(2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{4+m}{2},\frac{1}{2}(-1+m),2,\frac{6+m}{2},\right.$$
$$-\mathrm{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+a^2(-1+m)\,\mathrm{AppellF1}\Big[\frac{4+m}{2},$$
$$\left.\frac{1+m}{2},1,\frac{6+m}{2},-\mathrm{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]\right)\mathrm{Tan}[e+f x]^2\Bigg)+$$
$$\mathrm{Hypergeometric2F1}\Big[\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2\Big]\left(1+\mathrm{Tan}[e+f x]^2\right)^{m/2}$$
$$\left.\left(-b^2\,\mathrm{Tan}[e+f x]^2+a^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)\right)+$$
$$\frac{1}{b\,(2+m)\left(b^2\,\mathrm{Tan}[e+f x]^2-a^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)}\mathrm{Tan}[e+f x]$$
$$\Bigg(\mathrm{Hypergeometric2F1}\Big[\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2\Big]$$
$$\left(2a^2\,\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]-2b^2\,\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\right)$$
$$\left(1+\mathrm{Tan}[e+f x]^2\right)^{m/2}+\left(a^2\left(a^2-b^2\right)(4+m)\,\mathrm{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),1,\right.$$
$$\left.\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]\,\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\right)\Big/$$
$$\left(\sqrt{1+\mathrm{Tan}[e+f x]^2}\,\left(-a^2(4+m)\,\mathrm{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),1,\right.\right.$$
$$\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+$$
$$\left(2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{4+m}{2},\frac{1}{2}(-1+m),2,\frac{6+m}{2},-\mathrm{Tan}[e+f x]^2,\right.$$
$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+a^2(-1+m)\,\mathrm{AppellF1}\Big[\frac{4+m}{2},\frac{1+m}{2},1,$$
$$\left.\left.\left.\frac{6+m}{2},-\mathrm{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]\right)\mathrm{Tan}[e+f x]^2\right)\right)+$$
$$\left(a^2\left(a^2-b^2\right)(4+m)\left(-\frac{1}{4+m}(-1+m)(2+m)\,\mathrm{AppellF1}\Big[1+\frac{2+m}{2},1+\right.\right.$$
$$\frac{1}{2}(-1+m),1,1+\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]$$
$$\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]+\frac{1}{a^2(4+m)}2\left(-a^2+b^2\right)(2+m)$$
$$\mathrm{AppellF1}\Big[1+\frac{2+m}{2},\frac{1}{2}(-1+m),2,1+\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2,$$
$$\left.\left.\frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]\,\mathrm{Sec}[e+f x]^2\,\mathrm{Tan}[e+f x]\right)\sqrt{1+\mathrm{Tan}[e+f x]^2}\right)\Big/$$
$$\left(-a^2(4+m)\,\mathrm{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),1,\frac{4+m}{2},-\mathrm{Tan}[e+f x]^2,\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Big(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\frac{1}{2}(-1+m),2,\frac{6+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},$$
$$\frac{1+m}{2},1,\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)+$$
$$m\,\text{Hypergeometric2F1}\Big[\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[e+f x]^2\Big]\,\text{Sec}[e+f x]^2$$
$$\text{Tan}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{-1+\frac{m}{2}}\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)+$$
$$(2+m)\,\text{Csc}[e+f x]\,\text{Sec}[e+f x]\left(1+\text{Tan}[e+f x]^2\right)^{m/2}$$
$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Big(-\text{Hypergeometric2F1}\Big[$$
$$\frac{1+m}{2},\frac{2+m}{2},\frac{4+m}{2},-\text{Tan}[e+f x]^2\Big]+\left(1+\text{Tan}[e+f x]^2\right)^{\frac{1}{2}(-1-m)}\Big)-$$
$$\Big(a^2\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),1,\frac{4+m}{2},-\text{Tan}[e+f x]^2,$$
$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\sqrt{1+\text{Tan}[e+f x]^2}$$
$$\Big(2\Big(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\frac{1}{2}(-1+m),2,\frac{6+m}{2},-\text{Tan}[e+f x]^2,$$
$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\frac{1+m}{2},1,\frac{6+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-$$
$$a^2(4+m)\Big(-\frac{1}{4+m}(-1+m)(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},1+\frac{1}{2}(-1+m),$$
$$1,1+\frac{4+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\,\text{Sec}[e+f x]^2$$
$$\text{Tan}[e+f x]+\frac{1}{4+m}2\left(-1+\frac{b^2}{a^2}\right)(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},$$
$$\frac{1}{2}(-1+m),2,1+\frac{4+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]$$
$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)+\text{Tan}[e+f x]^2\Big(2\left(a^2-b^2\right)$$
$$\Big(-\frac{1}{6+m}(-1+m)(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},1+\frac{1}{2}(-1+m),2,1+\frac{6+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$
$$\frac{1}{6+m}4\left(-1+\frac{b^2}{a^2}\right)(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\frac{1}{2}(-1+m),3,1+\frac{6+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)+$$

$$a^2\,(-1+m)\,\Bigg(\frac{1}{6+m}2\,\left(-1+\frac{b^2}{a^2}\right)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,\frac{1+m}{2},\,2,\,1+\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{6+m}(1+m)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,1+\frac{1+m}{2},\,1,\,1+\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(-a^2\,(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\,\frac{1}{2}\,(-1+m),\,1,\,\frac{4+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]+\Big(2\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1}{2}\,(-1+m),\,2,\,\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]+a^2\,(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1+m}{2},\,1,\,\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\Big)\,\text{Tan}[e+f\,x]^2\Big)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 217: Result more than twice size of optimal antiderivative.

$$\int \frac{(d\,\text{Sin}[e+f\,x])^m}{(a+b\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 6, 306 leaves, 10 steps):

$$-\frac{1}{(a^2-b^2)^2\,d\,f}b^2\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}\,(-1-m),\,2,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Cos}[e+f\,x]\,(d\,\text{Sin}[e+f\,x])^{1+m}\,(\text{Sin}[e+f\,x]^2)^{\frac{1}{2}(-1-m)}-\frac{1}{(a^2-b^2)^2\,f}a^2\,d\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1-m}{2},\,2,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Cos}[e+f\,x]\,(d\,\text{Sin}[e+f\,x])^{-1+m}\,(\text{Sin}[e+f\,x]^2)^{\frac{1-m}{2}}+\frac{1}{(a^2-b^2)^2\,f}2\,a\,b\,\text{AppellF1}\Big[\frac{1}{2},\,-\frac{m}{2},\,2,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\,\text{Cos}[e+f\,x]\,(d\,\text{Sin}[e+f\,x])^m\,(\text{Sin}[e+f\,x]^2)^{-m/2}$$

Result (type 6, 8428 leaves):

$$\left(a^2\,(d\,\text{Sin}[e+f\,x])^m\,\text{Tan}[e+f\,x]\,\left(\frac{\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)^m\right.$$

$$\left(\left(\left(a^2+b^2\right)(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+fx]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+fx]^2}{a^2}\right]\right)\Big/\right.$$

$$\left((1+m)\left(-a^2(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]+\right.\right.$$

$$\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},2,\frac{5+m}{2},-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]+\right.$$

$$\left.a^2\,m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]\right)$$

$$\left.\left.\text{Tan}[e+fx]^2\right)\left(-b^2\,\text{Tan}[e+fx]^2+a^2\left(1+\text{Tan}[e+fx]^2\right)\right)\right)+$$

$$\frac{1}{\left(b^2\,\text{Tan}[e+fx]^2-a^2\left(1+\text{Tan}[e+fx]^2\right)\right)^2}\,2\,a\,b$$

$$\left(\left(a\,b\,(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},2,\frac{3+m}{2},-\text{Tan}[e+fx]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+fx]^2}{a^2}\right]\right)\Big/\right.$$

$$\left((1+m)\left(a^2(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},2,\frac{3+m}{2},-\text{Tan}[e+fx]^2,\right.\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]-\left(4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},3,\frac{5+m}{2},\right.\right.$$

$$\left.-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]+a^2\,m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},\right.$$

$$\left.\left.\left.\left.2,\frac{5+m}{2},-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]\right)\text{Tan}[e+fx]^2\right)\right)+$$

$$\left(\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},-\text{Tan}[e+fx]^2,\right.\right.$$

$$\left.\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+fx]^2}{a^2}\right]\text{Tan}[e+fx]\sqrt{1+\text{Tan}[e+fx]^2}\right)\Big/$$

$$\left((2+m)\left(a^2(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},-\text{Tan}[e+fx]^2,\right.\right.\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]+\left(-4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{4+m}{2},\frac{1}{2}(-1+m),3,\frac{6+m}{2},\right.\right.$$

$$-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]-a^2(-1+m)\,\text{AppellF1}\left[\frac{4+m}{2},\frac{1+m}{2},\right.$$

$$\left.\left.\left.\left.\left.2,\frac{6+m}{2},-\text{Tan}[e+fx]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+fx]^2\right]\right)\text{Tan}[e+fx]^2\right)\right)\right)\right)\Big/$$

$$\left(\left(-a^2+b^2\right)f\,(a+b\,\text{Sin}[e+fx])^2\left(\frac{1}{-a^2+b^2}a^2\,\text{Sec}[e+fx]^2\left(\frac{\text{Tan}[e+fx]}{\sqrt{1+\text{Tan}[e+fx]^2}}\right)^m\right.\right.$$

$$\left(\left(\left(a^2+b^2\right)(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+fx]^2,\right.\right.\right.$$

$$\frac{\left(-a^2+b^2\right)\,\mathrm{Tan}[e+f\,x]^2}{a^2}\Big]\Bigg)\Bigg/\Bigg((1+m)\,\Bigg(-a^2\,(3+m)\,\mathrm{AppellF1}\Big[\frac{1+m}{2},\,\frac{m}{2},$$

$$1,\,\frac{3+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+\Bigg(2\,\left(a^2-b^2\right)$$

$$\mathrm{AppellF1}\Big[\frac{3+m}{2},\,\frac{m}{2},\,2,\,\frac{5+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$a^2\,m\,\mathrm{AppellF1}\Big[\frac{3+m}{2},\,\frac{2+m}{2},\,1,\,\frac{5+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)$$

$$\mathrm{Tan}[e+f\,x]^2\Bigg)\,\left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\,\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)\Bigg)+$$

$$\frac{1}{\left(b^2\,\mathrm{Tan}[e+f\,x]^2-a^2\,\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)^2}\,2\,a\,b\,\Bigg(\Bigg(a\,b\,(3+m)\,\mathrm{AppellF1}\Big[\frac{1+m}{2},$$

$$\frac{m}{2},\,2,\,\frac{3+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\frac{\left(-a^2+b^2\right)\,\mathrm{Tan}[e+f\,x]^2}{a^2}\Big]\Bigg)\Bigg/$$

$$\Bigg((1+m)\,\Bigg(a^2\,(3+m)\,\mathrm{AppellF1}\Big[\frac{1+m}{2},\,\frac{m}{2},\,2,\,\frac{3+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]-\Bigg(4\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\Big[\frac{3+m}{2},\,\frac{m}{2},\,3,\,\frac{5+m}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+a^2\,m\,\mathrm{AppellF1}\Big[\frac{3+m}{2},\,\frac{2+m}{2},$$

$$2,\,\frac{5+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\,\mathrm{Tan}[e+f\,x]^2\Bigg)\Bigg)+$$

$$\Bigg(\left(a^2-b^2\right)\,(4+m)\,\mathrm{AppellF1}\Big[\frac{2+m}{2},\,\frac{1}{2}\,(-1+m),\,2,\,\frac{4+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\frac{\left(-a^2+b^2\right)\,\mathrm{Tan}[e+f\,x]^2}{a^2}\Big]\,\mathrm{Tan}[e+f\,x]\,\sqrt{1+\mathrm{Tan}[e+f\,x]^2}\Bigg)\Bigg/$$

$$\Bigg((2+m)\,\Bigg(a^2\,(4+m)\,\mathrm{AppellF1}\Big[\frac{2+m}{2},\,\frac{1}{2}\,(-1+m),\,2,\,\frac{4+m}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$\Bigg(-4\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\Big[\frac{4+m}{2},\,\frac{1}{2}\,(-1+m),\,3,\,\frac{6+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]-a^2\,(-1+m)\,\mathrm{AppellF1}\Big[\frac{4+m}{2},\,\frac{1+m}{2},\,2,$$

$$\frac{6+m}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\,\mathrm{Tan}[e+f\,x]^2\Bigg)\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{-a^2+b^2}\,a^2\,m\,\mathrm{Tan}[e+f\,x]\,\left(\frac{\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^2}}\right)^{-1+m}\,\Bigg(-\frac{\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]^2}{\left(1+\mathrm{Tan}[e+f\,x]^2\right)^{3/2}}+$$

$$\left.\frac{\text{Sec}[e+f x]^2}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)$$

$$\left(\left(\left(a^2+b^2\right)(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\right)\Big/\left((1+m)\left(-a^2(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2 m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)+$$

$$\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}\,2\,a\,b\left(\left(a\,b\,(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},2,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\right)\Big/\left((1+m)\left(a^2(3+m)\,\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},2,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]-\left(4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},3,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2 m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\right)+$$

$$\left(\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)\Big/$$

$$\left((2+m)\left(a^2(4+m)\,\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(-4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{4+m}{2},\frac{1}{2}(-1+m),3,\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]-a^2(-1+m)\,\text{AppellF1}\left[\frac{4+m}{2},\frac{1+m}{2},2,\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\right)\right)+$$

$$\frac{1}{-a^2+b^2} a^2 \operatorname{Tan}[e+f x] \left(\frac{\operatorname{Tan}[e+f x]}{\sqrt{1+\operatorname{Tan}[e+f x]^2}}\right)^m \Bigg(-\Bigg(\Bigg(\Big(\left(a^2+b^2\right) (3+m) \operatorname{AppellF1}\Big[\frac{1+m}{2}, \frac{m}{2}, 1, \frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \operatorname{Tan}[e+f x]^2}{a^2}\Big]$$

$$\left(2 a^2 \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]-2 b^2 \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]\right)\Big) \Big/$$

$$\Bigg((1+m) \Bigg(-a^2 (3+m) \operatorname{AppellF1}\Big[\frac{1+m}{2}, \frac{m}{2}, 1, \frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]+\Bigg(2 \left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{3+m}{2}, \frac{m}{2}, 2, \frac{5+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]+a^2 m \operatorname{AppellF1}\Big[\frac{3+m}{2}, \frac{2+m}{2}, 1, \frac{5+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]\Bigg)$$

$$\operatorname{Tan}[e+f x]^2\Bigg) \left(-b^2 \operatorname{Tan}[e+f x]^2+a^2 \left(1+\operatorname{Tan}[e+f x]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(\left(a^2+b^2\right) (3+m) \Bigg(-\frac{1}{3+m} m (1+m) \operatorname{AppellF1}\Big[1+\frac{1+m}{2}, 1+\frac{m}{2}, 1, 1+\frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \operatorname{Tan}[e+f x]^2}{a^2}\Big] \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]+$$

$$\frac{1}{a^2 (3+m)} 2 \left(-a^2+b^2\right) (1+m) \operatorname{AppellF1}\Big[1+\frac{1+m}{2}, \frac{m}{2}, 2, 1+\frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \operatorname{Tan}[e+f x]^2}{a^2}\Big] \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]\Bigg)\Bigg) \Big/$$

$$\Bigg((1+m) \Bigg(-a^2 (3+m) \operatorname{AppellF1}\Big[\frac{1+m}{2}, \frac{m}{2}, 1, \frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]+\Bigg(2 \left(a^2-b^2\right) \operatorname{AppellF1}\Big[\frac{3+m}{2}, \frac{m}{2}, 2, \frac{5+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]+a^2 m \operatorname{AppellF1}\Big[\frac{3+m}{2}, \frac{2+m}{2}, 1, \frac{5+m}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \operatorname{Tan}[e+f x]^2\Big]\Bigg) \operatorname{Tan}[e+f x]^2\Bigg) \Big(-b^2 \operatorname{Tan}[e+f x]^2+$$

$$a^2 \left(1+\operatorname{Tan}[e+f x]^2\right)\Big)\Bigg)-\frac{1}{\left(b^2 \operatorname{Tan}[e+f x]^2-a^2 \left(1+\operatorname{Tan}[e+f x]^2\right)\right)^3}$$

$$4 a b \left(-2 a^2 \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]+2 b^2 \operatorname{Sec}[e+f x]^2 \operatorname{Tan}[e+f x]\right)$$

$$\Bigg(\Bigg(a b (3+m) \operatorname{AppellF1}\Big[\frac{1+m}{2}, \frac{m}{2}, 2, \frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \operatorname{Tan}[e+f x]^2}{a^2}\Big]\Bigg) \Big/$$

$$\Bigg((1+m) \Bigg(a^2 (3+m) \operatorname{AppellF1}\Big[\frac{1+m}{2}, \frac{m}{2}, 2, \frac{3+m}{2}, -\operatorname{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-\Bigg(4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{3+m}{2},\frac{m}{2},3,\frac{5+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\,m\,\text{AppellF1}\Big[\frac{3+m}{2},\frac{2+m}{2},$$
$$2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)+$$
$$\Bigg(\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},-\text{Tan}[e+f x]^2,$$
$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$
$$\Bigg(\left(2+m\right)\Bigg(a^2(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\frac{1}{2}(-1+m),2,\frac{4+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$
$$\Bigg(-4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\frac{1}{2}(-1+m),3,\frac{6+m}{2},-\text{Tan}[e+f x]^2,$$
$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\frac{1+m}{2},2,$$
$$\frac{6+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)-$$
$$\Bigg(\left(a^2+b^2\right)(3+m)\,\text{AppellF1}\Big[\frac{1+m}{2},\frac{m}{2},1,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$
$$\Bigg(2\Bigg(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{3+m}{2},\frac{m}{2},2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,$$
$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\,m\,\text{AppellF1}\Big[\frac{3+m}{2},\frac{2+m}{2},1,\frac{5+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-$$
$$a^2(3+m)\Bigg(-\frac{1}{3+m}m(1+m)\,\text{AppellF1}\Big[1+\frac{1+m}{2},1+\frac{m}{2},1,1+\frac{3+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$
$$\frac{1}{3+m}2\left(-1+\frac{b^2}{a^2}\right)(1+m)\,\text{AppellF1}\Big[1+\frac{1+m}{2},\frac{m}{2},2,1+\frac{3+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)+$$
$$\text{Tan}[e+f x]^2\Bigg(2\left(a^2-b^2\right)\Bigg(-\frac{1}{5+m}m(3+m)\,\text{AppellF1}\Big[1+\frac{3+m}{2},1+\frac{m}{2},2,1+\frac{5+m}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$
$$\frac{1}{5+m}4\left(-1+\frac{b^2}{a^2}\right)(3+m)\,\text{AppellF1}\Big[1+\frac{3+m}{2},\frac{m}{2},3,1+\frac{5+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)+$$

$$a^2 m\left(\frac{1}{5+m}2\left(-1+\frac{b^2}{a^2}\right)(3+m)\,\text{AppellF1}\Big[1+\frac{3+m}{2},\ \frac{2+m}{2},\ 2,\ 1+\frac{5+m}{2},\right.$$

$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-$$

$$\frac{1}{5+m}(2+m)\,(3+m)\,\text{AppellF1}\Big[1+\frac{3+m}{2},\ 1+\frac{2+m}{2},\ 1,\ 1+\frac{5+m}{2},$$

$$\left.-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg((1+m)\,\Bigg(-a^2\,(3+m)\,\text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 1,\ \frac{3+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)$$

$$\text{Tan}[e+f x]^2\Big]+\Bigg(2\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{m}{2},\ 2,\ \frac{5+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2 m\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{2+m}{2},\ 1,\ \frac{5+m}{2},\ -\text{Tan}[e+$$

$$f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)^2\ \left(-b^2\,\text{Tan}[e+f x]^2+\right.$$

$$\left.a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}$$

$$2\,a\,b\,\Bigg(\Bigg(a\,b\,(3+m)\,\Bigg(-\frac{1}{3+m}m\,(1+m)\,\text{AppellF1}\Big[1+\frac{1+m}{2},\ 1+\frac{m}{2},\ 2,\ 1+\frac{3+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2\,(3+m)}4\,\left(-a^2+b^2\right)(1+m)\,\text{AppellF1}\Big[1+\frac{1+m}{2},\ \frac{m}{2},\ 3,\ 1+\frac{3+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\Bigg)\Bigg/$$

$$\Bigg((1+m)\,\Bigg(a^2\,(3+m)\,\text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 2,\ \frac{3+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-\Bigg(4\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{m}{2},\ 3,\ \frac{5+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2 m\,\text{AppellF1}\Big[\frac{3+m}{2},\ \frac{2+m}{2},$$

$$2,\ \frac{5+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)+$$

$$\Bigg(\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}(-1+m),\ 2,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]^2\Bigg)\Bigg/$$

$$\Bigg((2+m)\,\sqrt{1+\text{Tan}[e+f x]^2}\ \Bigg(a^2\,(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}(-1+m),$$

$$2,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1}{2}(-1+m),\ 3,\ \frac{6+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1+m}{2},\ 2,$$

$$\frac{6+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)+$$

$$\Bigg(\left(a^2-b^2\right)(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}(-1+m),\ 2,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Sec}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg((2+m)\Bigg(a^2(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}(-1+m),\ 2,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(-4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1}{2}(-1+m),\ 3,$$

$$\frac{6+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(-1+m)\,\text{AppellF1}\Big[$$

$$\frac{4+m}{2},\ \frac{1+m}{2},\ 2,\ \frac{6+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\Bigg)+\Bigg(\left(a^2-b^2\right)(4+m)\,\text{Tan}[e+f x]$$

$$\Bigg(-\frac{1}{4+m}(-1+m)(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},\ 1+\frac{1}{2}(-1+m),\ 2,\ 1+\frac{4+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2(4+m)}4\left(-a^2+b^2\right)(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},\ \frac{1}{2}(-1+m),\ 3,\ 1+\frac{4+m}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)$$

$$\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/\Bigg((2+m)\Bigg(a^2(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},\ \frac{1}{2}(-1+m),$$

$$2,\ \frac{4+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1}{2}(-1+m),\ 3,\ \frac{6+m}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\ \frac{1+m}{2},\ 2,$$

$$\frac{6+m}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)-$$

$$\Bigg(a\,b\,(3+m)\,\text{AppellF1}\Big[\frac{1+m}{2},\ \frac{m}{2},\ 2,\ \frac{3+m}{2},\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$

$$
\left(-2\left(4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},3,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\right.\right.\right.
$$

$$
\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2\,m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},2,\frac{5+m}{2},\right.
$$

$$
\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+
$$

$$
a^2\left(3+m\right)\left(-\frac{1}{3+m}m\left(1+m\right)\text{AppellF1}\left[1+\frac{1+m}{2},1+\frac{m}{2},2,1+\frac{3+m}{2},\right.\right.
$$

$$
\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+
$$

$$
\frac{1}{3+m}4\left(-1+\frac{b^2}{a^2}\right)\left(1+m\right)\text{AppellF1}\left[1+\frac{1+m}{2},\frac{m}{2},3,1+\frac{3+m}{2},\right.
$$

$$
\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)-
$$

$$
\text{Tan}[e+f x]^2\left(4\left(a^2-b^2\right)\left(-\frac{1}{5+m}m\left(3+m\right)\text{AppellF1}\left[1+\frac{3+m}{2},1+\frac{m}{2},\right.\right.\right.
$$

$$
\left.3,1+\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2
$$

$$
\text{Tan}[e+f x]+\frac{1}{5+m}6\left(-1+\frac{b^2}{a^2}\right)\left(3+m\right)\text{AppellF1}\left[1+\frac{3+m}{2},\right.
$$

$$
\left.\frac{m}{2},4,1+\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]
$$

$$
\left.\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+a^2\,m\left(\frac{1}{5+m}4\left(-1+\frac{b^2}{a^2}\right)\left(3+m\right)\right.
$$

$$
\text{AppellF1}\left[1+\frac{3+m}{2},\frac{2+m}{2},3,1+\frac{5+m}{2},-\text{Tan}[e+f x]^2,\right.
$$

$$
\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{1}{5+m}\left(2+m\right)
$$

$$
\left(3+m\right)\text{AppellF1}\left[1+\frac{3+m}{2},1+\frac{2+m}{2},2,1+\frac{5+m}{2},-\text{Tan}[e+f x]^2,\right.
$$

$$
\left.\left.\left.\left.\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\right)\right)\Big/
$$

$$
\left(\left(1+m\right)\left(a^2\left(3+m\right)\text{AppellF1}\left[\frac{1+m}{2},\frac{m}{2},2,\frac{3+m}{2},-\text{Tan}[e+f x]^2,\right.\right.\right.
$$

$$
\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]-\left(4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{3+m}{2},\frac{m}{2},3,\frac{5+m}{2},\right.\right.
$$

$$
\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2\,m\,\text{AppellF1}\left[\frac{3+m}{2},\frac{2+m}{2},\right.
$$

$$
\left.\left.\left.2,\frac{5+m}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)^2\right)-
$$

$$
\left(\left(a^2-b^2\right)\left(4+m\right)\text{AppellF1}\left[\frac{2+m}{2},\frac{1}{2}\left(-1+m\right),2,\frac{4+m}{2},-\text{Tan}[e+f x]^2,\right.\right.
$$

$$\frac{\left(-a^2+b^2\right)\,\text{Tan}[e+f\,x]^2}{a^2}\Big]\;\text{Tan}[e+f\,x]\;\sqrt{1+\text{Tan}[e+f\,x]^2}$$

$$\Bigg(2\,\Bigg(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1}{2}\,(-1+m),\,3,\,\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]-a^2\,(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1+m}{2},\,2,\,\frac{6+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+$$

$$a^2\,(4+m)\,\Bigg(-\frac{1}{4+m}(-1+m)\,(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},\,1+\frac{1}{2}\,(-1+m),$$

$$2,\,1+\frac{4+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]+\frac{1}{4+m}4\,\left(-1+\frac{b^2}{a^2}\right)\,(2+m)\,\text{AppellF1}\Big[1+\frac{2+m}{2},$$

$$\frac{1}{2}\,(-1+m),\,3,\,1+\frac{4+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)+\text{Tan}[e+f\,x]^2\,\Bigg(-4\,\left(a^2-b^2\right)$$

$$\Bigg(-\frac{1}{6+m}(-1+m)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,1+\frac{1}{2}\,(-1+m),\,3,\,1+\frac{6+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+$$

$$\frac{1}{6+m}6\,\left(-1+\frac{b^2}{a^2}\right)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,\frac{1}{2}\,(-1+m),\,4,\,1+\frac{6+m}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)-$$

$$a^2\,(-1+m)\,\Bigg(\frac{1}{6+m}4\,\left(-1+\frac{b^2}{a^2}\right)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,\frac{1+m}{2},$$

$$3,\,1+\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]-\frac{1}{6+m}(1+m)\,(4+m)\,\text{AppellF1}\Big[1+\frac{4+m}{2},\,1+\frac{1+m}{2},$$

$$2,\,1+\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2$$

$$\text{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/\Bigg((2+m)\,\Bigg(a^2\,(4+m)\,\text{AppellF1}\Big[\frac{2+m}{2},$$

$$\frac{1}{2}\,(-1+m),\,2,\,\frac{4+m}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]+$$

$$\Bigg(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1}{2}\,(-1+m),\,3,\,\frac{6+m}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]-a^2\,(-1+m)\,\text{AppellF1}\Big[\frac{4+m}{2},\,\frac{1+m}{2},\,2,$$

$$\left.\left.\left.\left.\left.\frac{6+m}{2},\ -\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\right]\mathrm{Tan}[e+f x]^2\right)^2\right)\right)\right)\right)$$

Problem 218: Result more than twice size of optimal antiderivative.

$$\int \frac{(d\,\mathrm{Sin}[e+f x])^m}{(a+b\,\mathrm{Sin}[e+f x])^3}\,dx$$

Optimal (type 6, 406 leaves, 13 steps):

$$-\frac{1}{\left(a^2-b^2\right)^3 d f}3\,a\,b^2\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1-m),3,\frac{3}{2},\mathrm{Cos}[e+f x]^2,-\frac{b^2\,\mathrm{Cos}[e+f x]^2}{a^2-b^2}\right]\mathrm{Cos}[e+f x]\,(d\,\mathrm{Sin}[e+f x])^{1+m}\left(\mathrm{Sin}[e+f x]^2\right)^{\frac{1}{2}(-1-m)}-\frac{1}{\left(a^2-b^2\right)^3 f}a^3\,d\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1-m}{2},3,\frac{3}{2},\mathrm{Cos}[e+f x]^2,-\frac{b^2\,\mathrm{Cos}[e+f x]^2}{a^2-b^2}\right]\mathrm{Cos}[e+f x]\,(d\,\mathrm{Sin}[e+f x])^{-1+m}\left(\mathrm{Sin}[e+f x]^2\right)^{\frac{1-m}{2}}+\frac{1}{\left(a^2-b^2\right)^3 f}b^3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-2-m),3,\frac{3}{2},\mathrm{Cos}[e+f x]^2,-\frac{b^2\,\mathrm{Cos}[e+f x]^2}{a^2-b^2}\right]\mathrm{Cos}[e+f x]\,(d\,\mathrm{Sin}[e+f x])^m\left(\mathrm{Sin}[e+f x]^2\right)^{-m/2}+\frac{1}{\left(a^2-b^2\right)^3 f}3\,a^2\,b\,\mathrm{AppellF1}\left[\frac{1}{2},-\frac{m}{2},3,\frac{3}{2},\mathrm{Cos}[e+f x]^2,-\frac{b^2\,\mathrm{Cos}[e+f x]^2}{a^2-b^2}\right]\mathrm{Cos}[e+f x]\,(d\,\mathrm{Sin}[e+f x])^m\left(\mathrm{Sin}[e+f x]^2\right)^{-m/2}$$

Result (type 6, 20 820 leaves): Display of huge result suppressed!

Problem 222: Unable to integrate problem.

$$\int \mathrm{Sin}[c+d x]^3\,(a+b\,\mathrm{Sin}[c+d x])^n\,dx$$

Optimal (type 6, 351 leaves, 9 steps):

$$\frac{2\,a\,\text{Cos}[c+d\,x]\,(a+b\,\text{Sin}[c+d\,x])^{1+n}}{b^2\,d\,(2+n)\,(3+n)}-\frac{\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]\,(a+b\,\text{Sin}[c+d\,x])^{1+n}}{b\,d\,(3+n)}-\left(\sqrt{2}\,(a+b)\,\left(2\,a^2+b^2\,(2+n)^2\right)\right.$$
$$\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-n,\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[c+d\,x]),\frac{b\,(1-\text{Sin}[c+d\,x])}{a+b}\right]\text{Cos}[c+d\,x]$$
$$\left.(a+b\,\text{Sin}[c+d\,x])^n\left(\frac{a+b\,\text{Sin}[c+d\,x]}{a+b}\right)^{-n}\right)\Big/\left(b^3\,d\,(2+n)\,(3+n)\,\sqrt{1+\text{Sin}[c+d\,x]}\right)+$$
$$\left(\sqrt{2}\,a\,\left(2\,a^2+b^2\,\left(4+5\,n+n^2\right)\right)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-n,\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[c+d\,x]),\frac{b\,(1-\text{Sin}[c+d\,x])}{a+b}\right]\right.$$
$$\left.\text{Cos}[c+d\,x]\,(a+b\,\text{Sin}[c+d\,x])^n\left(\frac{a+b\,\text{Sin}[c+d\,x]}{a+b}\right)^{-n}\right)\Big/$$
$$\left(b^3\,d\,(2+n)\,(3+n)\,\sqrt{1+\text{Sin}[c+d\,x]}\right)$$

Result (type 8, 23 leaves):

$$\int \text{Sin}[c+d\,x]^3\,(a+b\,\text{Sin}[c+d\,x])^n\,dx$$

Problem 223: Unable to integrate problem.

$$\int \text{Sin}[c+d\,x]^2\,(a+b\,\text{Sin}[c+d\,x])^n\,dx$$

Optimal (type 6, 274 leaves, 8 steps):

$$-\frac{\text{Cos}[c+d\,x]\,(a+b\,\text{Sin}[c+d\,x])^{1+n}}{b\,d\,(2+n)}+$$
$$\left(\sqrt{2}\,a\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-n,\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[c+d\,x]),\frac{b\,(1-\text{Sin}[c+d\,x])}{a+b}\right]\text{Cos}[c+d\,x]\right.$$
$$\left.(a+b\,\text{Sin}[c+d\,x])^n\left(\frac{a+b\,\text{Sin}[c+d\,x]}{a+b}\right)^{-n}\right)\Big/\left(b^2\,d\,(2+n)\,\sqrt{1+\text{Sin}[c+d\,x]}\right)-$$
$$\left(\sqrt{2}\,\left(a^2+b^2\,(1+n)\right)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-n,\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[c+d\,x]),\frac{b\,(1-\text{Sin}[c+d\,x])}{a+b}\right]\right.$$
$$\left.\text{Cos}[c+d\,x]\,(a+b\,\text{Sin}[c+d\,x])^n\left(\frac{a+b\,\text{Sin}[c+d\,x]}{a+b}\right)^{-n}\right)\Big/\left(b^2\,d\,(2+n)\,\sqrt{1+\text{Sin}[c+d\,x]}\right)$$

Result (type 8, 23 leaves):

$$\int \text{Sin}[c+d\,x]^2\,(a+b\,\text{Sin}[c+d\,x])^n\,dx$$

Problem 231: Result more than twice size of optimal antiderivative.

$$\int \frac{a+a\,\text{Sin}[e+f\,x]}{c-c\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 33 leaves, 2 steps):

$$-\frac{a\,x}{c}+\frac{2\,a\,\text{Cos}[e+f\,x]}{f\,(c-c\,\text{Sin}[e+f\,x])}$$

Result (type 3, 83 leaves):

$$\frac{a\left(-f\,x\,\text{Cos}\left[\frac{f\,x}{2}\right]+4\,\text{Sin}\left[\frac{f\,x}{2}\right]+f\,x\,\text{Sin}\left[e+\frac{f\,x}{2}\right]\right)}{c\,f\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}$$

Problem 232: Result more than twice size of optimal antiderivative.

$$\int\frac{a+a\,\text{Sin}[e+f\,x]}{(c-c\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 30 leaves, 2 steps):

$$\frac{a\,c\,\text{Cos}[e+f\,x]^3}{3\,f\,(c-c\,\text{Sin}[e+f\,x])^3}$$

Result (type 3, 74 leaves):

$$-\frac{a\left(-3\,\text{Cos}\left[e+\frac{f\,x}{2}\right]+\text{Cos}\left[e+\frac{3\,f\,x}{2}\right]\right)}{3\,c^2\,f\left(\text{Cos}\left[\frac{e}{2}\right]-\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3}$$

Problem 241: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^2}{c-c\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 57 leaves, 4 steps):

$$-\frac{3\,a^2\,x}{c}+\frac{3\,a^2\,\text{Cos}[e+f\,x]}{c\,f}+\frac{2\,a^2\,c\,\text{Cos}[e+f\,x]^3}{f\,(c-c\,\text{Sin}[e+f\,x])^2}$$

Result (type 3, 130 leaves):

$$\left(a^2\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,(3\,(e+f\,x)-\text{Cos}[e+f\,x])+(-8-3\,e-3\,f\,x+\text{Cos}[e+f\,x])\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$
$$\left.(1+\text{Sin}[e+f\,x])^2\right)\Big/\left(c\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\,(-1+\text{Sin}[e+f\,x])\right)$$

Problem 243: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^2}{(c-c\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 34 leaves, 2 steps):

$$\frac{a^2 c^2 \text{Cos}[e+f x]^5}{5 f (c-c \text{Sin}[e+f x])^5}$$

Result (type 3, 81 leaves):

$$\left(a^2 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \left(-10 \text{Sin}\left[\frac{1}{2} (e+f x)\right]-5 \text{Sin}\left[\frac{3}{2} (e+f x)\right]+\text{Sin}\left[\frac{5}{2} (e+f x)\right]\right)\right) \Big/ \left(10 c^3 f (-1+\text{Sin}[e+f x])^3\right)$$

Problem 255: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a \text{Sin}[e+f x])^3}{(c-c \text{Sin}[e+f x])^3} \, dx$$

Optimal (type 3, 106 leaves, 5 steps):

$$-\frac{a^3 x}{c^3}+\frac{2 a^3 c^2 \text{Cos}[e+f x]^5}{5 f (c-c \text{Sin}[e+f x])^5}-\frac{2 a^3 \text{Cos}[e+f x]^3}{3 f (c-c \text{Sin}[e+f x])^3}+\frac{2 a^3 \text{Cos}[e+f x]}{f \left(c^3-c^3 \text{Sin}[e+f x]\right)}$$

Result (type 3, 249 leaves):

$$\frac{1}{15 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^6 (c-c \text{Sin}[e+f x])^3} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \left(24 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)-44 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^3-15 (e+f x) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5+48 \text{Sin}\left[\frac{1}{2} (e+f x)\right]-88 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2 \text{Sin}\left[\frac{1}{2} (e+f x)\right]+92 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4 \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) (a+a \text{Sin}[e+f x])^3$$

Problem 256: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a \text{Sin}[e+f x])^3}{(c-c \text{Sin}[e+f x])^4} \, dx$$

Optimal (type 3, 34 leaves, 2 steps):

$$\frac{a^3 c^3 \text{Cos}[e+f x]^7}{7 f (c-c \text{Sin}[e+f x])^7}$$

Result (type 3, 93 leaves):

$$\left(a^3\left(35\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-21\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-7\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]+\mathrm{Cos}\left[\frac{7}{2}(e+f\,x)\right]\right)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big/\left(28\,c^4\,f\,(-1+\mathrm{Sin}[e+f\,x])^4\right)$$

Problem 263: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-c\,\mathrm{Sin}[e+f\,x])^2}{a+a\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 56 leaves, 4 steps):

$$-\frac{3\,c^2\,x}{a}-\frac{3\,c^2\,\mathrm{Cos}[e+f\,x]}{a\,f}-\frac{2\,a\,c^2\,\mathrm{Cos}[e+f\,x]^3}{f\,(a+a\,\mathrm{Sin}[e+f\,x])^2}$$

Result (type 3, 129 leaves):

$$-\left(\left(c^2\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right](3\,(e+f\,x)+\mathrm{Cos}[e+f\,x])+(-8+3\,e+3\,f\,x+\mathrm{Cos}[e+f\,x])\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)(-1+\mathrm{Sin}[e+f\,x])^2\right)\Big/\left(a\,f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4(1+\mathrm{Sin}[e+f\,x])\right)\right)$$

Problem 264: Result more than twice size of optimal antiderivative.

$$\int\frac{c-c\,\mathrm{Sin}[e+f\,x]}{a+a\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 32 leaves, 2 steps):

$$-\frac{c\,x}{a}-\frac{2\,c\,\mathrm{Cos}[e+f\,x]}{f\,(a+a\,\mathrm{Sin}[e+f\,x])}$$

Result (type 3, 79 leaves):

$$-\frac{c\left(f\,x\,\mathrm{Cos}\left[\frac{f\,x}{2}\right]-4\,\mathrm{Sin}\left[\frac{f\,x}{2}\right]+f\,x\,\mathrm{Sin}\left[e+\frac{f\,x}{2}\right]\right)}{a\,f\left(\mathrm{Cos}\left[\frac{e}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}\right]\right)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)}$$

Problem 271: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-c\,\mathrm{Sin}[e+f\,x])^3}{(a+a\,\mathrm{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 90 leaves, 5 steps):

$$\frac{5\,c^3\,x}{a^2}+\frac{5\,c^3\,\mathrm{Cos}[e+f\,x]}{a^2\,f}-\frac{2\,a^2\,c^3\,\mathrm{Cos}[e+f\,x]^5}{3\,f\,(a+a\,\mathrm{Sin}[e+f\,x])^4}+\frac{10\,c^3\,\mathrm{Cos}[e+f\,x]^3}{3\,f\,(a+a\,\mathrm{Sin}[e+f\,x])^2}$$

Result (type 3, 210 leaves):

$$\frac{1}{3 f \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (a+a \text{Sin}[e+f x])^2}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)$$
$$\left(16 \text{Sin}\left[\frac{1}{2}(e+f x)\right]-8\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)-56 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2+15 (e+f x)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+$$
$$\left.3 \text{Cos}[e+f x]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\right)(c-c \text{Sin}[e+f x])^3$$

Problem 273: Result more than twice size of optimal antiderivative.

$$\int \frac{c-c \text{Sin}[e+f x]}{(a+a \text{Sin}[e+f x])^2} \, dx$$

Optimal (type 3, 29 leaves, 2 steps):

$$-\frac{a c \text{Cos}[e+f x]^3}{3 f (a+a \text{Sin}[e+f x])^3}$$

Result (type 3, 70 leaves):

$$\frac{c\left(-3 \text{Cos}\left[e+\frac{f x}{2}\right]+\text{Cos}\left[e+\frac{3 f x}{2}\right]\right)}{3 a^2 f\left(\text{Cos}\left[\frac{e}{2}\right]+\text{Sin}\left[\frac{e}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3}$$

Problem 280: Result more than twice size of optimal antiderivative.

$$\int \frac{(c-c \text{Sin}[e+f x])^4}{(a+a \text{Sin}[e+f x])^3} \, dx$$

Optimal (type 3, 124 leaves, 6 steps):

$$-\frac{7 c^4 x}{a^3}-\frac{7 c^4 \text{Cos}[e+f x]}{a^3 f}-\frac{2 a^3 c^4 \text{Cos}[e+f x]^7}{5 f (a+a \text{Sin}[e+f x])^6}+$$
$$\frac{14 a c^4 \text{Cos}[e+f x]^5}{15 f (a+a \text{Sin}[e+f x])^4}-\frac{14 c^4 \text{Cos}[e+f x]^3}{3 a f (a+a \text{Sin}[e+f x])^2}$$

Result (type 3, 270 leaves):

$$\frac{1}{15\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^8 (a+a\,\text{Sin}[e+f x])^3}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(96\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-48\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)-256\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2+128\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+464\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4-105\,(e+f x)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5-15\,\text{Cos}[e+f x]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)(c-c\,\text{Sin}[e+f x])^4$$

Problem 281: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-c\,\text{Sin}[e+f x])^3}{(a+a\,\text{Sin}[e+f x])^3}\,dx$$

Optimal (type 3, 103 leaves, 5 steps):

$$-\frac{c^3 x}{a^3}-\frac{2\,a^2 c^3\,\text{Cos}[e+f x]^5}{5\,f\,(a+a\,\text{Sin}[e+f x])^5}+\frac{2\,c^3\,\text{Cos}[e+f x]^3}{3\,f\,(a+a\,\text{Sin}[e+f x])^3}-\frac{2\,c^3\,\text{Cos}[e+f x]}{f\,(a^3+a^3\,\text{Sin}[e+f x])}$$

Result (type 3, 239 leaves):

$$\frac{1}{15\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (a+a\,\text{Sin}[e+f x])^3}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(48\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-24\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)-88\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2+44\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+92\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4-15\,(e+f x)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)(c-c\,\text{Sin}[e+f x])^3$$

Problem 282: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-c\,\text{Sin}[e+f x])^2}{(a+a\,\text{Sin}[e+f x])^3}\,dx$$

Optimal (type 3, 33 leaves, 2 steps):

$$-\frac{a^2 c^2 \operatorname{Cos}[e+f x]^5}{5 f (a+a \operatorname{Sin}[e+f x])^5}$$

Result (type 3, 81 leaves):

$$\left(c^2 \left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(10 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+5 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]\right)\right) \Big/ \left(10 a^3 f (1+\operatorname{Sin}[e+f x])^3\right)$$

Problem 293: Result more than twice size of optimal antiderivative.

$$\int (a+a \operatorname{Sin}[e+f x]) \sqrt{c-c \operatorname{Sin}[e+f x]}\, dx$$

Optimal (type 3, 34 leaves, 2 steps):

$$\frac{2 a c^2 \operatorname{Cos}[e+f x]^3}{3 f (c-c \operatorname{Sin}[e+f x])^{3/2}}$$

Result (type 3, 71 leaves):

$$\frac{2 a \left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3 \sqrt{c-c \operatorname{Sin}[e+f x]}}{3 f \left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}$$

Problem 294: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a+a \operatorname{Sin}[e+f x]}{\sqrt{c-c \operatorname{Sin}[e+f x]}}\, dx$$

Optimal (type 3, 77 leaves, 4 steps):

$$\frac{2 \sqrt{2}\, a \operatorname{ArcTanh}\left[\frac{\sqrt{c} \operatorname{Cos}[e+f x]}{\sqrt{2} \sqrt{c-c \operatorname{Sin}[e+f x]}}\right]}{\sqrt{c}\, f}-\frac{2 a \operatorname{Cos}[e+f x]}{f \sqrt{c-c \operatorname{Sin}[e+f x]}}$$

Result (type 3, 162 leaves):

$$-\left(\left(2 a \left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(\sqrt{c}+\sqrt{c} \operatorname{Sin}[e+f x]-\right.\right.\right.$$
$$\left.\left.\left. i \sqrt{2} \operatorname{Log}\left[\frac{2\left(-i \sqrt{2} \sqrt{c}+\sqrt{-c (1+\operatorname{Sin}[e+f x])}\right)}{\sqrt{c-c \operatorname{Sin}[e+f x]}}\right] \sqrt{-c (1+\operatorname{Sin}[e+f x])}\right)\right) \Big/\right.$$
$$\left.\left(\sqrt{c}\, f \left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \sqrt{c-c \operatorname{Sin}[e+f x]}\right)\right)$$

Problem 295: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a + a \,\text{Sin}[e + f x]}{(c - c \,\text{Sin}[e + f x])^{3/2}} \, dx$$

Optimal (type 3, 76 leaves, 4 steps):

$$-\frac{a \,\text{ArcTanh}\left[\frac{\sqrt{c} \,\text{Cos}[e+f x]}{\sqrt{2} \sqrt{c-c \,\text{Sin}[e+f x]}}\right]}{\sqrt{2} \, c^{3/2} f} + \frac{a \,\text{Cos}[e + f x]}{f (c - c \,\text{Sin}[e + f x])^{3/2}}$$

Result (type 3, 201 leaves):

$$\left(a \,\text{Sec}[e + f x] \left(\left(2 \sqrt{c} - i \sqrt{2} \,\text{Log}\left[\frac{2 \left(-i \sqrt{2} \sqrt{c} + \sqrt{-c (1 + \text{Sin}[e + f x])}\right)}{\sqrt{c - c \,\text{Sin}[e + f x]}}\right] \sqrt{-c (1 + \text{Sin}[e + f x])} + \text{Sin}[e + f x] \left(2 \sqrt{c} + i \sqrt{2} \,\text{Log}\left[\frac{2 \left(-i \sqrt{2} \sqrt{c} + \sqrt{-c (1 + \text{Sin}[e + f x])}\right)}{\sqrt{c - c \,\text{Sin}[e + f x]}}\right] \sqrt{-c (1 + \text{Sin}[e + f x])}\right)\right)\right)\right) \Big/ \left(2 c^{3/2} f \sqrt{c - c \,\text{Sin}[e + f x]}\right)$$

Problem 296: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a + a \,\text{Sin}[e + f x]}{(c - c \,\text{Sin}[e + f x])^{5/2}} \, dx$$

Optimal (type 3, 113 leaves, 5 steps):

$$-\frac{a \,\text{ArcTanh}\left[\frac{\sqrt{c} \,\text{Cos}[e+f x]}{\sqrt{2} \sqrt{c-c \,\text{Sin}[e+f x]}}\right]}{8 \sqrt{2} \, c^{5/2} f} + \frac{a \,\text{Cos}[e + f x]}{2 f (c - c \,\text{Sin}[e + f x])^{5/2}} - \frac{a \,\text{Cos}[e + f x]}{8 c f (c - c \,\text{Sin}[e + f x])^{3/2}}$$

Result (type 3, 334 leaves):

$$\left(a\left(14\sqrt{c}-3\,i\sqrt{2}\,\text{Log}\left[\frac{2\left(-i\sqrt{2}\sqrt{c}+\sqrt{-c\,(1+\text{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]\sqrt{-c\,(1+\text{Sin}[e+f\,x])}-\right.\right.$$
$$\text{Cos}[2\,(e+f\,x)]\left(2\sqrt{c}-i\sqrt{2}\,\text{Log}\left[\frac{2\left(-i\sqrt{2}\sqrt{c}+\sqrt{-c\,(1+\text{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]\right.$$
$$\left.\sqrt{-c\,(1+\text{Sin}[e+f\,x])}\right)+4\,\text{Sin}[e+f\,x]$$
$$\left.\left.\left(4\sqrt{c}+i\sqrt{2}\,\text{Log}\left[\frac{2\left(-i\sqrt{2}\sqrt{c}+\sqrt{-c\,(1+\text{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]\sqrt{-c\,(1+\text{Sin}[e+f\,x])}\right)\right)\right)\Bigg/$$
$$\left(32\,c^{5/2}\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$
$$\left.\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)$$

Problem 297: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{a+a\,\text{Sin}[e+f\,x]}{(c-c\,\text{Sin}[e+f\,x])^{7/2}}\,dx$$

Optimal (type 3, 145 leaves, 6 steps):

$$-\frac{a\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{32\,\sqrt{2}\,c^{7/2}\,f}+\frac{a\,\text{Cos}[e+f\,x]}{3\,f\,(c-c\,\text{Sin}[e+f\,x])^{7/2}}-\frac{a\,\text{Cos}[e+f\,x]}{24\,c\,f\,(c-c\,\text{Sin}[e+f\,x])^{5/2}}-\frac{a\,\text{Cos}[e+f\,x]}{32\,c^2\,f\,(c-c\,\text{Sin}[e+f\,x])^{3/2}}$$

Result (type 3, 426 leaves):

$$\left(a\left(6\left(38\sqrt{c}-5\,\mathrm{i}\,\sqrt{2}\,\mathrm{Log}\left[\frac{2\left(-\mathrm{i}\,\sqrt{2}\,\sqrt{c}+\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}\right]\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)-\right.\right.$$

$$2\,\mathrm{Cos}[2\,(e+f\,x)]\left(14\sqrt{c}-9\,\mathrm{i}\,\sqrt{2}\,\mathrm{Log}\left[\frac{2\left(-\mathrm{i}\,\sqrt{2}\,\sqrt{c}+\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}\right]\right.$$

$$\left.\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)+\mathrm{Sin}[e+f\,x]$$

$$\left(262\sqrt{c}+45\,\mathrm{i}\,\sqrt{2}\,\mathrm{Log}\left[\frac{2\left(-\mathrm{i}\,\sqrt{2}\,\sqrt{c}+\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}\right]\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)+$$

$$3\left(2\sqrt{c}-\mathrm{i}\,\sqrt{2}\,\mathrm{Log}\left[\frac{2\left(-\mathrm{i}\,\sqrt{2}\,\sqrt{c}+\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)}{\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}\right]\sqrt{-c\,(1+\mathrm{Sin}[e+f\,x])}\right)$$

$$\left.\left.\mathrm{Sin}[3\,(e+f\,x)]\right)\right)\Big/$$

$$\left(768\,c^{7/2}\,f\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^5\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$

$$\left.\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}\right)$$

Problem 298: Result more than twice size of optimal antiderivative.

$$\int(a+a\,\mathrm{Sin}[e+f\,x])^2\,(c-c\,\mathrm{Sin}[e+f\,x])^{7/2}\,dx$$

Optimal (type 3, 145 leaves, 5 steps):

$$\frac{256\,a^2\,c^6\,\mathrm{Cos}[e+f\,x]^5}{1155\,f\,(c-c\,\mathrm{Sin}[e+f\,x])^{5/2}}+\frac{64\,a^2\,c^5\,\mathrm{Cos}[e+f\,x]^5}{231\,f\,(c-c\,\mathrm{Sin}[e+f\,x])^{3/2}}+$$

$$\frac{8\,a^2\,c^4\,\mathrm{Cos}[e+f\,x]^5}{33\,f\,\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}+\frac{2\,a^2\,c^3\,\mathrm{Cos}[e+f\,x]^5\,\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}{11\,f}$$

Result (type 3, 1105 leaves):

$$\left(7\,\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,(a+a\,\mathrm{Sin}[e+f\,x])^2\,(c-c\,\mathrm{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(8\,f\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)-$$

$$\left(\mathrm{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]\,(a+a\,\mathrm{Sin}[e+f\,x])^2\,(c-c\,\mathrm{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(8\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(11\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(80\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(\text{Cos}\left[\frac{7}{2}\,(e+f\,x)\right]\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(112\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(\text{Cos}\left[\frac{9}{2}\,(e+f\,x)\right]\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(48\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(\text{Cos}\left[\frac{11}{2}\,(e+f\,x)\right]\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(176\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(7\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(8\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(8\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left(11\,(a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(80\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)-$$
$$\left((a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(112\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(48\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)-$$
$$\left((a+a\,\text{Sin}[e+f\,x])^2\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{11}{2}\,(e+f\,x)\right]\right)\Big/$$
$$\left(176\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4\right)$$

Problem 299: Result more than twice size of optimal antiderivative.

$$\int (a + a \operatorname{Sin}[e + f x])^2 (c - c \operatorname{Sin}[e + f x])^{5/2} \, dx$$

Optimal (type 3, 109 leaves, 4 steps):

$$\frac{64 a^2 c^5 \operatorname{Cos}[e + f x]^5}{315 f (c - c \operatorname{Sin}[e + f x])^{5/2}} + \frac{16 a^2 c^4 \operatorname{Cos}[e + f x]^5}{63 f (c - c \operatorname{Sin}[e + f x])^{3/2}} + \frac{2 a^2 c^3 \operatorname{Cos}[e + f x]^5}{9 f \sqrt{c - c \operatorname{Sin}[e + f x]}}$$

Result (type 3, 921 leaves):

$$\left(3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(4 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)-$$
$$\left(\text{Cos}\left[\frac{3}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(6 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left(\text{Cos}\left[\frac{5}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(10 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)-$$
$$\left(\text{Cos}\left[\frac{7}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(56 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left(\text{Cos}\left[\frac{9}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(72 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left(3\,\text{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\right)\Big/$$
$$\left(4 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\Big/$$
$$\left(6 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{5}{2}(e+f x)\right]\right)\Big/$$
$$\left(10 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{7}{2}(e+f x)\right]\right)\Big/$$
$$\left(56 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^2 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{9}{2}(e+f x)\right]\right)\Big/$$
$$\left(72 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)$$

Problem 301: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f x])^2\sqrt{c-c\,\text{Sin}[e+f x]}\,dx$$

Optimal (type 3, 36 leaves, 2 steps):

$$\frac{2\,a^2\,c^3\,\text{Cos}[e+f\,x]^5}{5\,f\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}$$

Result (type 3, 73 leaves):

$$\frac{2\,a^2\,\left(\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\right)^5\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}{5\,f\,\left(\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]-\text{Sin}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\right)}$$

Problem 302: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\left(a+a\,\text{Sin}[e+f\,x]\right)^2}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 115 leaves, 5 steps):

$$\frac{4\,\sqrt{2}\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{c}\,f}-\frac{2\,a^2\,c\,\text{Cos}[e+f\,x]^3}{3\,f\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{3/2}}-\frac{4\,a^2\,\text{Cos}[e+f\,x]}{f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 130 leaves):

$$-\left(\left(a^2\,\left(\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]-\text{Sin}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]\right)\right.\right.$$
$$\left(\left(24+24\,i\right)\,\left(-1\right)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)\,\left(-1\right)^{1/4}\,\left(1+\text{Tan}\left[\frac{1}{4}\,\left(e+f\,x\right)\right]\right)\right]+15\,\text{Cos}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]-\right.$$
$$\left.\left.\left.\text{Cos}\left[\frac{3}{2}\,\left(e+f\,x\right)\right]+15\,\text{Sin}\left[\frac{1}{2}\,\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{3}{2}\,\left(e+f\,x\right)\right]\right)\right)\Big/\left(3\,f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\right)$$

Problem 303: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\left(a+a\,\text{Sin}[e+f\,x]\right)^2}{\left(c-c\,\text{Sin}[e+f\,x]\right)^{3/2}}\,dx$$

Optimal (type 3, 115 leaves, 5 steps):

$$-\frac{3\,\sqrt{2}\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{c^{3/2}\,f}+\frac{a^2\,c\,\text{Cos}[e+f\,x]^3}{f\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}+\frac{3\,a^2\,\text{Cos}[e+f\,x]}{c\,f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 149 leaves):

$$-\left(\left(a^2\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\left(3\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Cos}\left[\frac{3}{2}(e+fx)\right]+3\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]-(6+6\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+fx)\right]\right)\right](-1+\text{Sin}[e+fx])-\text{Sin}\left[\frac{3}{2}(e+fx)\right]\right)\right)\Big/\left(c\,f\,(-1+\text{Sin}[e+fx])\sqrt{c-c\,\text{Sin}[e+fx]}\right)\right)$$

Problem 304: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(a+a\,\text{Sin}[e+fx])^2}{(c-c\,\text{Sin}[e+fx])^{5/2}}\,dx$$

Optimal (type 3, 122 leaves, 5 steps):

$$\frac{3\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+fx]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+fx]}}\right]}{4\sqrt{2}\,c^{5/2}\,f}+\frac{a^2\,c\,\text{Cos}[e+fx]^3}{2\,f\,(c-c\,\text{Sin}[e+fx])^{7/2}}-\frac{3\,a^2\,\text{Cos}[e+fx]}{4\,c\,f\,(c-c\,\text{Sin}[e+fx])^{3/2}}$$

Result (type 3, 163 leaves):

$$\left(a^2\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\left(3\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]-5\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]+3\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+(3+3\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+fx)\right]\right)\right](-3+\text{Cos}[2\,(e+fx)]+4\,\text{Sin}[e+fx])+5\,\text{Sin}\left[\frac{3}{2}(e+fx)\right]\right)\right)\Big/\left(8\,c^2\,f\,(-1+\text{Sin}[e+fx])^2\sqrt{c-c\,\text{Sin}[e+fx]}\right)$$

Problem 305: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(a+a\,\text{Sin}[e+fx])^2}{(c-c\,\text{Sin}[e+fx])^{7/2}}\,dx$$

Optimal (type 3, 156 leaves, 6 steps):

$$\frac{a^2\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+fx]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+fx]}}\right]}{16\sqrt{2}\,c^{7/2}\,f}+\frac{a^2\,c\,\text{Cos}[e+fx]^3}{3\,f\,(c-c\,\text{Sin}[e+fx])^{9/2}}-\frac{a^2\,\text{Cos}[e+fx]}{4\,c\,f\,(c-c\,\text{Sin}[e+fx])^{5/2}}+\frac{a^2\,\text{Cos}[e+fx]}{16\,c^2\,f\,(c-c\,\text{Sin}[e+fx])^{3/2}}$$

Result (type 3, 307 leaves):

$$\frac{1}{48\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4 (c-c\,\text{Sin}[e+f x])^{7/2}}$$
$$a^2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)$$
$$\left(32\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)-28\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+\right.$$
$$3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5-(3+3\,i)\,(-1)^{1/4}$$
$$\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6+$$
$$64\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-56\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\text{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$\left.6\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)(1+\text{Sin}[e+f x])^2$$

Problem 306: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(a+a\,\text{Sin}[e+f x])^2}{(c-c\,\text{Sin}[e+f x])^{9/2}}\,dx$$

Optimal (type 3, 190 leaves, 7 steps):

$$\frac{3\,a^2\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{256\,\sqrt{2}\,c^{9/2}\,f}+\frac{a^2\,c\,\text{Cos}[e+f x]^3}{4\,f\,(c-c\,\text{Sin}[e+f x])^{11/2}}-$$
$$\frac{a^2\,\text{Cos}[e+f x]}{8\,c\,f\,(c-c\,\text{Sin}[e+f x])^{7/2}}+\frac{a^2\,\text{Cos}[e+f x]}{64\,c^2\,f\,(c-c\,\text{Sin}[e+f x])^{5/2}}+\frac{3\,a^2\,\text{Cos}[e+f x]}{256\,c^3\,f\,(c-c\,\text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 371 leaves):

$$\frac{1}{256\,f\left(\text{Cos}\left[\tfrac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\tfrac{1}{2}(e+f\,x)\right]\right)^4\left(c-c\,\text{Sin}[e+f\,x]\right)^{9/2}}$$

$$a^2\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)$$

$$\left(128\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)-96\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3+\right.$$

$$4\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+3\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7-$$

$$(3+3\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f\,x)\right]\right)\right]$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^8+256\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]-$$

$$192\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]+$$

$$8\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]+$$

$$\left.6\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(1+\text{Sin}[e+f\,x]\right)^2$$

Problem 307: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^3\,(c-c\,\text{Sin}[e+f\,x])^{7/2}\,dx$$

Optimal (type 3, 145 leaves, 5 steps):

$$\frac{256\,a^3\,c^7\,\text{Cos}[e+f\,x]^7}{3003\,f\,(c-c\,\text{Sin}[e+f\,x])^{7/2}}+\frac{64\,a^3\,c^6\,\text{Cos}[e+f\,x]^7}{429\,f\,(c-c\,\text{Sin}[e+f\,x])^{5/2}}+$$

$$\frac{24\,a^3\,c^5\,\text{Cos}[e+f\,x]^7}{143\,f\,(c-c\,\text{Sin}[e+f\,x])^{3/2}}+\frac{2\,a^3\,c^4\,\text{Cos}[e+f\,x]^7}{13\,f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 1289 leaves):

$$\left(5\,\text{Cos}\left[\frac{1}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(8\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)-$$

$$\left(5\,\text{Cos}\left[\frac{3}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(32\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$

$$\left(3\,\text{Cos}\left[\frac{5}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(32\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)-$$

$$\left(3\,\text{Cos}\left[\frac{7}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$

$$\left(112\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(\text{Cos}\left[\frac{9}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(48\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)-$$
$$\left(\text{Cos}\left[\frac{11}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(352\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(\text{Cos}\left[\frac{13}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(416\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(5\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right](a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\right)\Big/$$
$$\left(8\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(5\,(a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{3}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(32\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(3\,(a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{5}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(32\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left(3\,(a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{7}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(112\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{9}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(48\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{11}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(352\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f\,x])^3(c-c\,\text{Sin}[e+f\,x])^{7/2}\,\text{Sin}\left[\frac{13}{2}(e+f\,x)\right]\right)\Big/$$
$$\left(416\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^7\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\right)$$

Problem 308: Result more than twice size of optimal antiderivative.

$$\int (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2} \, dx$$

Optimal (type 3, 109 leaves, 4 steps):

$$\frac{64 a^3 c^6 \operatorname{Cos}[e + f x]^7}{693 f (c - c \operatorname{Sin}[e + f x])^{7/2}} + \frac{16 a^3 c^5 \operatorname{Cos}[e + f x]^7}{99 f (c - c \operatorname{Sin}[e + f x])^{5/2}} + \frac{2 a^3 c^4 \operatorname{Cos}[e + f x]^7}{11 f (c - c \operatorname{Sin}[e + f x])^{3/2}}$$

Result (type 3, 1105 leaves):

$$\left(5 \operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(8 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) -$$
$$\left(5 \operatorname{Cos}\left[\frac{3}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(24 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left(\operatorname{Cos}\left[\frac{5}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(16 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) -$$
$$\left(5 \operatorname{Cos}\left[\frac{7}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(112 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left(\operatorname{Cos}\left[\frac{9}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(144 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) -$$
$$\left(\operatorname{Cos}\left[\frac{11}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(176 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left(5 \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right] (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2}\right) \Big/$$
$$\left(8 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left(5 (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2} \operatorname{Sin}\left[\frac{3}{2} (e + f x)\right]\right) \Big/$$
$$\left(24 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left((a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2} \operatorname{Sin}\left[\frac{5}{2} (e + f x)\right]\right) \Big/$$
$$\left(16 f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] - \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^5 \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)^6\right) +$$
$$\left(5 (a + a \operatorname{Sin}[e + f x])^3 (c - c \operatorname{Sin}[e + f x])^{5/2} \operatorname{Sin}\left[\frac{7}{2} (e + f x)\right]\right) \Big/$$

$$\left(112\, f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^3 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{9}{2} (e+f x)\right]\right)\Big/$$
$$\left(144\, f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^3 (c-c\,\text{Sin}[e+f x])^{5/2}\,\text{Sin}\left[\frac{11}{2} (e+f x)\right]\right)\Big/$$
$$\left(176\, f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^6\right)$$

Problem 309: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f x])^3 (c-c\,\text{Sin}[e+f x])^{3/2}\, dx$$

Optimal (type 3, 73 leaves, 3 steps):

$$\frac{8\, a^3 c^5\, \text{Cos}[e+f x]^7}{63\, f\, (c-c\,\text{Sin}[e+f x])^{7/2}}+\frac{2\, a^3 c^4\, \text{Cos}[e+f x]^7}{9\, f\, (c-c\,\text{Sin}[e+f x])^{5/2}}$$

Result (type 3, 737 leaves):

$$\left(3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\right)\Big/$$
$$\left(4 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)-$$
$$\left(\text{Cos}\left[\frac{3}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\right)\Big/$$
$$\left(3 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)-$$
$$\left(3\,\text{Cos}\left[\frac{7}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\right)\Big/$$
$$\left(56 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)-$$
$$\left(\text{Cos}\left[\frac{9}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\right)\Big/$$
$$\left(72 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)+$$
$$\left(3\,\text{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\right)\Big/$$
$$\left(4 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)+$$
$$\left((a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\,\text{Sin}\left[\frac{3}{2}(e+f x)\right]\right)\Big/$$
$$\left(3 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)+$$
$$\left(3\,(a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\,\text{Sin}\left[\frac{7}{2}(e+f x)\right]\right)\Big/$$
$$\left(56 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)-$$
$$\left((a+a\,\text{Sin}[e+f x])^3(c-c\,\text{Sin}[e+f x])^{3/2}\,\text{Sin}\left[\frac{9}{2}(e+f x)\right]\right)\Big/$$
$$\left(72 f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right)$$

Problem 310: Result more than twice size of optimal antiderivative.

$$\int(a+a\,\text{Sin}[e+f x])^3\sqrt{c-c\,\text{Sin}[e+f x]}\,dx$$

Optimal (type 3, 36 leaves, 2 steps):

$$\frac{2\,a^3\,c^4\,\text{Cos}[e+f x]^7}{7 f\,(c-c\,\text{Sin}[e+f x])^{7/2}}$$

Result (type 3, 73 leaves):

$$\frac{2\,a^3\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\sqrt{c-c\,\text{Sin}[e+f\,x]}}{7\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}$$

Problem 311: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^3}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 151 leaves, 6 steps):

$$\frac{8\,\sqrt{2}\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{c}\,f}-\frac{2\,a^3\,c^2\,\text{Cos}[e+f\,x]^5}{5\,f\,(c-c\,\text{Sin}[e+f\,x])^{5/2}}-\frac{4\,a^3\,c\,\text{Cos}[e+f\,x]^3}{3\,f\,(c-c\,\text{Sin}[e+f\,x])^{3/2}}-\frac{8\,a^3\,\text{Cos}[e+f\,x]}{f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 156 leaves):

$$-\left(\left(a^3\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\left((480+480\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]\right)\right]+330\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-35\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]-3\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]+330\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+35\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-3\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]\right)\right)\Big/\left(30\,f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\right)$$

Problem 312: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^3}{(c-c\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 150 leaves, 6 steps):

$$-\frac{10\,\sqrt{2}\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{c^{3/2}\,f}+\frac{a^3\,c^2\,\text{Cos}[e+f\,x]^5}{f\,(c-c\,\text{Sin}[e+f\,x])^{7/2}}+\frac{5\,a^3\,\text{Cos}[e+f\,x]^3}{3\,f\,(c-c\,\text{Sin}[e+f\,x])^{3/2}}+\frac{10\,a^3\,\text{Cos}[e+f\,x]}{c\,f\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 173 leaves):

$$-\left(\left(a^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right.\right.$$
$$\left(50\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+25\,\text{Cos}\left[\frac{3}{2}(e+f x)\right]+\text{Cos}\left[\frac{5}{2}(e+f x)\right]+50\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-\right.$$
$$(120+120\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\,(-1+\text{Sin}[e+f x])-$$
$$\left.\left.\left.25\,\text{Sin}\left[\frac{3}{2}(e+f x)\right]+\text{Sin}\left[\frac{5}{2}(e+f x)\right]\right)\right)\Big/\left(6\,c\,f\,(-1+\text{Sin}[e+f x])\,\sqrt{c-c\,\text{Sin}[e+f x]}\right)\right)$$

Problem 313: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(a+a\,\text{Sin}[e+f x])^3}{(c-c\,\text{Sin}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 157 leaves, 6 steps):

$$\frac{15\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{2\,\sqrt{2}\,c^{5/2}\,f}+\frac{a^3\,c^2\,\text{Cos}[e+f x]^5}{2\,f\,(c-c\,\text{Sin}[e+f x])^{9/2}}-$$
$$\frac{5\,a^3\,\text{Cos}[e+f x]^3}{4\,f\,(c-c\,\text{Sin}[e+f x])^{5/2}}-\frac{15\,a^3\,\text{Cos}[e+f x]}{4\,c^2\,f\,\sqrt{c-c\,\text{Sin}[e+f x]}}$$

Result (type 3, 187 leaves):

$$\left(a^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right.$$
$$\left(-5\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-15\,\text{Cos}\left[\frac{3}{2}(e+f x)\right]+2\,\text{Cos}\left[\frac{5}{2}(e+f x)\right]-5\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+\right.$$
$$(15+15\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]$$
$$\left.\left.(-3+\text{Cos}[2\,(e+f x)]+4\,\text{Sin}[e+f x])+15\,\text{Sin}\left[\frac{3}{2}(e+f x)\right]+2\,\text{Sin}\left[\frac{5}{2}(e+f x)\right]\right)\right)\Big/$$
$$\left(4\,c^2\,f\,(-1+\text{Sin}[e+f x])^2\,\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 314: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(a+a\,\text{Sin}[e+f x])^3}{(c-c\,\text{Sin}[e+f x])^{7/2}}\,dx$$

Optimal (type 3, 157 leaves, 6 steps):

$$-\frac{5\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{8\,\sqrt{2}\,c^{7/2}\,f}+\frac{a^3\,c^2\,\text{Cos}[e+f x]^5}{3\,f\,(c-c\,\text{Sin}[e+f x])^{11/2}}-$$
$$\frac{5\,a^3\,\text{Cos}[e+f x]^3}{12\,f\,(c-c\,\text{Sin}[e+f x])^{7/2}}+\frac{5\,a^3\,\text{Cos}[e+f x]}{8\,c^2\,f\,(c-c\,\text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 307 leaves):

$$\frac{1}{24\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6\left(c-c\,\text{Sin}[e+f\,x]\right)^{7/2}}\,a^3\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(32\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)-52\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3+33\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+(15+15\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^6+64\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]-104\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]+66\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(1+\text{Sin}[e+f\,x]\right)^3$$

Problem 315: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\left(a+a\,\text{Sin}[e+f\,x]\right)^3}{\left(c-c\,\text{Sin}[e+f\,x]\right)^{9/2}}\,dx$$

Optimal (type 3, 191 leaves, 7 steps):

$$-\frac{5\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{128\,\sqrt{2}\,c^{9/2}\,f}+\frac{a^3\,c^2\,\text{Cos}[e+f\,x]^5}{4\,f\left(c-c\,\text{Sin}[e+f\,x]\right)^{13/2}}-\frac{5\,a^3\,\text{Cos}[e+f\,x]^3}{24\,f\left(c-c\,\text{Sin}[e+f\,x]\right)^{9/2}}+\frac{5\,a^3\,\text{Cos}[e+f\,x]}{32\,c^2\,f\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}-\frac{5\,a^3\,\text{Cos}[e+f\,x]}{128\,c^3\,f\left(c-c\,\text{Sin}[e+f\,x]\right)^{3/2}}$$

Result (type 3, 371 leaves):

$$\frac{1}{384\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6(c-c\,\text{Sin}[e+f x])^{9/2}}$$
$$a^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)$$
$$\left(384\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)-544\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+\right.$$
$$236\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5-15\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^7+$$
$$(15+15\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^8+768\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-$$
$$1088\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\text{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$472\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\text{Sin}\left[\frac{1}{2}(e+f x)\right]-$$
$$\left.30\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)(1+\text{Sin}[e+f x])^3$$

Problem 316: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f x])^3}{(c-c\,\text{Sin}[e+f x])^{11/2}}\,dx$$

Optimal (type 3, 225 leaves, 8 steps):

$$-\frac{3\,a^3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{512\,\sqrt{2}\,c^{11/2}\,f}+\frac{a^3\,c^2\,\text{Cos}[e+f x]^5}{5\,f\,(c-c\,\text{Sin}[e+f x])^{15/2}}-\frac{a^3\,\text{Cos}[e+f x]^3}{8\,f\,(c-c\,\text{Sin}[e+f x])^{11/2}}+$$
$$\frac{a^3\,\text{Cos}[e+f x]}{16\,c^2\,f\,(c-c\,\text{Sin}[e+f x])^{7/2}}-\frac{a^3\,\text{Cos}[e+f x]}{128\,c^3\,f\,(c-c\,\text{Sin}[e+f x])^{5/2}}-\frac{3\,a^3\,\text{Cos}[e+f x]}{512\,c^4\,f\,(c-c\,\text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 1005 leaves):

$$\frac{4\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2 (a+a\,\mathrm{Sin}[e+f x])^3}{5 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}}-$$

$$\frac{21\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4 (a+a\,\mathrm{Sin}[e+f x])^3}{20 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}}+$$

$$\frac{31\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (a+a\,\mathrm{Sin}[e+f x])^3}{80 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}}-$$

$$\frac{\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^8 (a+a\,\mathrm{Sin}[e+f x])^3}{128 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}}-$$

$$\frac{3\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^{10} (a+a\,\mathrm{Sin}[e+f x])^3}{512 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}}+\left(\left(\frac{3}{512}+\frac{3\,i}{512}\right)(-1)^{1/4}\right.$$

$$\mathrm{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\,\mathrm{Sec}\left[\frac{1}{4}(e+f x)\right]\left(\mathrm{Cos}\left[\frac{1}{4}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{4}(e+f x)\right]\right)\right]$$

$$\left.\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^{11}(a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)+$$

$$\left(8\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(5 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)-$$

$$\left(21\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(10 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)+$$

$$\left(31\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(40 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)-$$

$$\left(\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^7\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(64 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)-$$

$$\left(3\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^9\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right](a+a\,\mathrm{Sin}[e+f x])^3\right)\Big/$$

$$\left(256 f\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6 (c-c\,\mathrm{Sin}[e+f x])^{11/2}\right)$$

Problem 321: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a + a\,\text{Sin}[e + f\,x])\,\sqrt{c - c\,\text{Sin}[e + f\,x]}}\,dx$$

Optimal (type 3, 83 leaves, 4 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{2}\,a\,\sqrt{c}\,f} - \frac{\text{Sec}[e + f\,x]\,\sqrt{c - c\,\text{Sin}[e + f\,x]}}{a\,c\,f}$$

Result (type 3, 97 leaves):

$$-\left(\left(\text{Cos}[e + f\,x]\left(1 + (1 + i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2} + \frac{i}{2}\right)(-1)^{1/4}\left(1 + \text{Tan}\left[\frac{1}{4}(e + f\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}(e + f\,x)\right]\right)\right)\right)\Big/\left(a\,f\,(1 + \text{Sin}[e + f\,x])\,\sqrt{c - c\,\text{Sin}[e + f\,x]}\right)\right)$$

Problem 322: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a + a\,\text{Sin}[e + f\,x])\,(c - c\,\text{Sin}[e + f\,x])^{3/2}}\,dx$$

Optimal (type 3, 117 leaves, 5 steps):

$$\frac{3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}\right]}{4\,\sqrt{2}\,a\,c^{3/2}\,f} + \frac{3\,\text{Cos}[e + f\,x]}{4\,a\,f\,(c - c\,\text{Sin}[e + f\,x])^{3/2}} - \frac{\text{Sec}[e + f\,x]}{a\,c\,f\,\sqrt{c - c\,\text{Sin}[e + f\,x]}}$$

Result (type 3, 125 leaves):

$$-\left(\left(\text{Sec}[e + f\,x]\left(1 + (3 + 3\,i)\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2} + \frac{i}{2}\right)(-1)^{1/4}\left(1 + \text{Tan}\left[\frac{1}{4}(e + f\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e + f\,x)\right] - \text{Sin}\left[\frac{1}{2}(e + f\,x)\right]\right)^2\left(\text{Cos}\left[\frac{1}{2}(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}(e + f\,x)\right]\right) - 3\,\text{Sin}[e + f\,x]\right)\right)\Big/\left(4\,a\,c\,f\,\sqrt{c - c\,\text{Sin}[e + f\,x]}\right)\right)$$

Problem 323: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a + a\,\text{Sin}[e + f\,x])\,(c - c\,\text{Sin}[e + f\,x])^{5/2}}\,dx$$

Optimal (type 3, 156 leaves, 6 steps):

$$\frac{15\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{32\,\sqrt{2}\,a\,c^{5/2}\,f}+\frac{15\,\text{Cos}[e+f x]}{32\,a\,c\,f\,(c-c\,\text{Sin}[e+f x])^{3/2}}+\frac{\text{Sec}[e+f x]}{4\,a\,c\,f\,(c-c\,\text{Sin}[e+f x])^{3/2}}-\frac{5\,\text{Sec}[e+f x]}{8\,a\,c^2\,f\,\sqrt{c-c\,\text{Sin}[e+f x]}}$$

Result (type 3, 162 leaves):

$$\left(\left(\frac{1}{128}+\frac{i}{128}\right)\text{Cos}[e+f x]\left(-60\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)+(1-i)\,(-9+15\,\text{Cos}[2\,(e+f x)]+40\,\text{Sin}[e+f x])\right)\right)\Big/\left(a\,c^2\,f\,(-1+\text{Sin}[e+f x])^2\,(1+\text{Sin}[e+f x])\,\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 328: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c-c\,\text{Sin}[e+f x]}}{(a+a\,\text{Sin}[e+f x])^2}\,dx$$

Optimal (type 3, 36 leaves, 2 steps):

$$-\frac{2\,\text{Sec}[e+f x]^3\,(c-c\,\text{Sin}[e+f x])^{3/2}}{3\,a^2\,c\,f}$$

Result (type 3, 73 leaves):

$$-\left(\left(2\,\sqrt{c-c\,\text{Sin}[e+f x]}\right)\Big/\left(3\,a^2\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\right)\right)$$

Problem 329: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(a+a\,\text{Sin}[e+f x])^2\,\sqrt{c-c\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 124 leaves, 5 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{2\,\sqrt{2}\,a^2\,\sqrt{c}\,f}-\frac{\text{Sec}[e+f x]\,\sqrt{c-c\,\text{Sin}[e+f x]}}{2\,a^2\,c\,f}-\frac{\text{Sec}[e+f x]^3\,(c-c\,\text{Sin}[e+f x])^{3/2}}{3\,a^2\,c^2\,f}$$

Result (type 3, 109 leaves):

$$\left(\text{Cos}[e+f x]\left(-5-(3+3\,i)(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3-3\,\text{Sin}[e+f x]\right)\right)\Big/\left(6\,a^2 f\,(1+\text{Sin}[e+f x])^2\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 330: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(a+a\,\text{Sin}[e+f x])^2\,(c-c\,\text{Sin}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 155 leaves, 6 steps):

$$\frac{5\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{8\sqrt{2}\,a^2 c^{3/2} f}+\frac{5\,\text{Cos}[e+f x]}{8\,a^2 f\,(c-c\,\text{Sin}[e+f x])^{3/2}}-\frac{5\,\text{Sec}[e+f x]}{6\,a^2 c f\sqrt{c-c\,\text{Sin}[e+f x]}}-\frac{\text{Sec}[e+f x]^3\sqrt{c-c\,\text{Sin}[e+f x]}}{3\,a^2 c^2 f}$$

Result (type 3, 164 leaves):

$$\left(\left(\frac{1}{96}+\frac{i}{96}\right)\text{Cos}[e+f x]\left(60\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+(1-i)\left(11+15\,\text{Cos}[2(e+f x)]-20\,\text{Sin}[e+f x]\right)\right)\right)\Big/\left(a^2 c f\,(-1+\text{Sin}[e+f x])\,(1+\text{Sin}[e+f x])^2\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 331: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(a+a\,\text{Sin}[e+f x])^2\,(c-c\,\text{Sin}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 192 leaves, 7 steps):

$$\frac{35\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{64\sqrt{2}\,a^2 c^{5/2} f}+\frac{35\,\text{Cos}[e+f x]}{64\,a^2 c f\,(c-c\,\text{Sin}[e+f x])^{3/2}}+\frac{7\,\text{Sec}[e+f x]}{24\,a^2 c f\,(c-c\,\text{Sin}[e+f x])^{3/2}}-\frac{35\,\text{Sec}[e+f x]}{48\,a^2 c^2 f\sqrt{c-c\,\text{Sin}[e+f x]}}-\frac{\text{Sec}[e+f x]^3}{3\,a^2 c^2 f\sqrt{c-c\,\text{Sin}[e+f x]}}$$

Result (type 3, 156 leaves):

$$-\left(\left(\left(\left(\frac{1}{1536}+\frac{i}{1536}\right)\text{Sec}[e+fx]^3\left(840\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+fx)\right]\right)\right]\right.\right.\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3+$$
$$\left.\left.\left.(1-i)\left(102+70\,\text{Cos}[2(e+fx)]-329\,\text{Sin}[e+fx]-105\,\text{Sin}[3(e+fx)]\right)\right)\right)\Big/$$
$$\left.\left(a^2c^2f\sqrt{c-c\,\text{Sin}[e+fx]}\right)\right)$$

Problem 336: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c-c\,\text{Sin}[e+fx]}}{(a+a\,\text{Sin}[e+fx])^3}\,dx$$

Optimal (type 3, 36 leaves, 2 steps):

$$-\frac{2\,\text{Sec}[e+fx]^5\,(c-c\,\text{Sin}[e+fx])^{5/2}}{5\,a^3c^2f}$$

Result (type 3, 73 leaves):

$$-\left(\left(2\sqrt{c-c\,\text{Sin}[e+fx]}\right)\Big/\right.$$
$$\left.\left(5\,a^3f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\right)\right)$$

Problem 337: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(a+a\,\text{Sin}[e+fx])^3\sqrt{c-c\,\text{Sin}[e+fx]}}\,dx$$

Optimal (type 3, 160 leaves, 6 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+fx]}{\sqrt{2}\sqrt{c-c\,\text{Sin}[e+fx]}}\right]}{4\sqrt{2}\,a^3\sqrt{c}\,f}-\frac{\text{Sec}[e+fx]\sqrt{c-c\,\text{Sin}[e+fx]}}{4\,a^3c\,f}-$$
$$\frac{\text{Sec}[e+fx]^3\,(c-c\,\text{Sin}[e+fx])^{3/2}}{6\,a^3c^2f}-\frac{\text{Sec}[e+fx]^5\,(c-c\,\text{Sin}[e+fx])^{5/2}}{5\,a^3c^3f}$$

Result (type 3, 189 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(-12-10\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2-\right.$$
$$15\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4-(15+15\,i)\,(-1)^{1/4}$$
$$\left.\left.\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)\right)\Big/$$
$$\left(60\,a^3 f\,(1+\text{Sin}[e+f x])^3\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 338: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a+a\,\text{Sin}[e+f x])^3\,(c-c\,\text{Sin}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 191 leaves, 7 steps):

$$\frac{7\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{16\sqrt{2}\,a^3 c^{3/2} f}+\frac{7\,\text{Cos}[e+f x]}{16\,a^3 f\,(c-c\,\text{Sin}[e+f x])^{3/2}}-\frac{7\,\text{Sec}[e+f x]}{12\,a^3 c f\sqrt{c-c\,\text{Sin}[e+f x]}}-$$
$$\frac{7\,\text{Sec}[e+f x]^3\sqrt{c-c\,\text{Sin}[e+f x]}}{30\,a^3 c^2 f}-\frac{\text{Sec}[e+f x]^5\,(c-c\,\text{Sin}[e+f x])^{3/2}}{5\,a^3 c^3 f}$$

Result (type 3, 174 leaves):

$$\left(\left(\frac{1}{1920}+\frac{i}{1920}\right)\text{Cos}[e+f x]\left(840\,(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5+$$
$$\left.\left.(1-i)\,(206+350\,\text{Cos}[2\,(e+f x)]-231\,\text{Sin}[e+f x]+105\,\text{Sin}[3\,(e+f x)])\right)\right)\Big/$$
$$\left(a^3 c f\,(-1+\text{Sin}[e+f x])\,(1+\text{Sin}[e+f x])^3\sqrt{c-c\,\text{Sin}[e+f x]}\right)$$

Problem 339: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a+a\,\text{Sin}[e+f x])^3\,(c-c\,\text{Sin}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 228 leaves, 8 steps):

$$\frac{63\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{c-c\,\text{Sin}[e+f x]}}\right]}{128\sqrt{2}\,a^3 c^{5/2} f}+\frac{63\,\text{Cos}[e+f x]}{128\,a^3 c f\,(c-c\,\text{Sin}[e+f x])^{3/2}}+\frac{21\,\text{Sec}[e+f x]}{80\,a^3 c f\,(c-c\,\text{Sin}[e+f x])^{3/2}}-$$
$$\frac{21\,\text{Sec}[e+f x]}{32\,a^3 c^2 f\sqrt{c-c\,\text{Sin}[e+f x]}}-\frac{3\,\text{Sec}[e+f x]^3}{10\,a^3 c^2 f\sqrt{c-c\,\text{Sin}[e+f x]}}-\frac{\text{Sec}[e+f x]^5\sqrt{c-c\,\text{Sin}[e+f x]}}{5\,a^3 c^3 f}$$

Result (type 3, 443 leaves):

$$\frac{1}{640\, a^3\, f\, (1+\mathrm{Sin}[e+f\,x])^3\, (c-c\,\mathrm{Sin}[e+f\,x])^{5/2}} \left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right) \left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)$$
$$\left(-240\,\mathrm{Cos}[e+f\,x]^4-32\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4-\right.$$
$$80\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2+$$
$$20\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+$$
$$75\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5-$$
$$(315+315\,i)\,(-1)^{1/4}\,\mathrm{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\left(1+\mathrm{Tan}\left[\frac{1}{4}(e+f\,x)\right]\right)\right]$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+$$
$$40\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+$$
$$150\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2$$
$$\left.\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5\right)$$

Problem 344: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}{\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 52 leaves, 3 steps):

$$-\frac{a\,\mathrm{Cos}[e+f\,x]\,\mathrm{Log}[1-\mathrm{Sin}[e+f\,x]]}{f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c-c\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 3, 129 leaves):

$$-\left(\left(\sqrt{2}\,\left(-i+e^{i\,(e+f\,x)}\right)\left(f\,x-2\,\mathrm{ArcTan}\left[e^{i\,(e+f\,x)}\right]+i\,\mathrm{Log}\left[1+e^{2\,i\,(e+f\,x)}\right]\right)\sqrt{a\,(1+\mathrm{Sin}[e+f\,x])}\right)\right/$$
$$\left.\left(\sqrt{i\,c\,e^{-i\,(e+f\,x)}\left(-i+e^{i\,(e+f\,x)}\right)^2}\,\left(i+e^{i\,(e+f\,x)}\right)\,f\right)\right)$$

Problem 345: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}{(c-c\,\mathrm{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 40 leaves, 1 step):

$$\frac{a\,\text{Cos}[e+f\,x]}{f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{3/2}}$$

Result (type 3, 84 leaves):

$$\left(\sqrt{a\,\left(1+\text{Sin}[e+f\,x]\right)}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(c^2\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)$$

Problem 346: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+a\,\text{Sin}[e+f\,x]}}{\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 43 leaves, 1 step):

$$\frac{a\,\text{Cos}[e+f\,x]}{2\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}$$

Result (type 3, 87 leaves):

$$\left(\sqrt{a\,\left(1+\text{Sin}[e+f\,x]\right)}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(2\,c^3\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^5\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)$$

Problem 347: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+a\,\text{Sin}[e+f\,x]}}{\left(c-c\,\text{Sin}[e+f\,x]\right)^{7/2}}\,dx$$

Optimal (type 3, 43 leaves, 1 step):

$$\frac{a\,\text{Cos}[e+f\,x]}{3\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\left(c-c\,\text{Sin}[e+f\,x]\right)^{7/2}}$$

Result (type 3, 87 leaves):

$$\left(\sqrt{a\,\left(1+\text{Sin}[e+f\,x]\right)}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(3\,c^4\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^7\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)$$

Problem 354: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+a\,\text{Sin}[e+f\,x]\right)^{3/2}}{\left(c-c\,\text{Sin}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 42 leaves, 1 step):

$$\frac{\text{Cos}[e+f x] (a+a \text{Sin}[e+f x])^{3/2}}{4 f (c-c \text{Sin}[e+f x])^{5/2}}$$

Result (type 3, 99 leaves):

$$\left(a \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \text{Sin}[e+f x] \sqrt{a (1+\text{Sin}[e+f x])}\right) \Big/ \left(c^2 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) (-1+\text{Sin}[e+f x])^2 \sqrt{c-c \text{Sin}[e+f x]}\right)$$

Problem 365: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a \text{Sin}[e+f x])^{5/2}}{(c-c \text{Sin}[e+f x])^{7/2}} \, dx$$

Optimal (type 3, 42 leaves, 1 step):

$$\frac{\text{Cos}[e+f x] (a+a \text{Sin}[e+f x])^{5/2}}{6 f (c-c \text{Sin}[e+f x])^{7/2}}$$

Result (type 3, 110 leaves):

$$\left(a^2 (-5+3 \text{Cos}[2 (e+f x)]) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \sqrt{a (1+\text{Sin}[e+f x])}\right) \Big/ \left(6 c^3 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) (-1+\text{Sin}[e+f x])^3 \sqrt{c-c \text{Sin}[e+f x]}\right)$$

Problem 369: Result more than twice size of optimal antiderivative.

$$\int (a+a \text{Sin}[e+f x])^{7/2} (c-c \text{Sin}[e+f x])^{9/2} \, dx$$

Optimal (type 3, 179 leaves, 4 steps):

$$-\frac{a^4 \text{Cos}[e+f x] (c-c \text{Sin}[e+f x])^{9/2}}{35 f \sqrt{a+a \text{Sin}[e+f x]}}-\frac{a^3 \text{Cos}[e+f x] \sqrt{a+a \text{Sin}[e+f x]} (c-c \text{Sin}[e+f x])^{9/2}}{14 f}-\frac{3 a^2 \text{Cos}[e+f x] (a+a \text{Sin}[e+f x])^{3/2} (c-c \text{Sin}[e+f x])^{9/2}}{28 f}-\frac{a \text{Cos}[e+f x] (a+a \text{Sin}[e+f x])^{5/2} (c-c \text{Sin}[e+f x])^{9/2}}{8 f}$$

Result (type 3, 735 leaves):

$$\left(7\,\mathrm{Cos}\left[2\,(e+f\,x)\right]\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\right)\Big/$$
$$\left(128\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(7\,\mathrm{Cos}\left[4\,(e+f\,x)\right]\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\right)\Big/$$
$$\left(256\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(\mathrm{Cos}\left[6\,(e+f\,x)\right]\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\right)\Big/$$
$$\left(128\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(\mathrm{Cos}\left[8\,(e+f\,x)\right]\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\right)\Big/$$
$$\left(1024\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(35\,\mathrm{Sin}[e+f\,x]\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\right)\Big/$$
$$\left(64\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(7\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\,\mathrm{Sin}\left[3\,(e+f\,x)\right]\right)\Big/$$
$$\left(64\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(7\,\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\,\mathrm{Sin}\left[5\,(e+f\,x)\right]\right)\Big/$$
$$\left(320\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)+$$
$$\left(\left(a\,(1+\mathrm{Sin}[e+f\,x])\right)^{7/2}\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}\,\mathrm{Sin}\left[7\,(e+f\,x)\right]\right)\Big/$$
$$\left(448\,f\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{9}\,\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{7}\right)$$

Problem 378: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^{7/2}}{\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}}\,dx$$

Optimal (type 3, 42 leaves, 1 step):

$$\frac{\mathrm{Cos}[e+f\,x]\,\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^{7/2}}{8\,f\,\left(c-c\,\mathrm{Sin}[e+f\,x]\right)^{9/2}}$$

Result (type 3, 327 leaves):

$$\frac{2\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{9/2}}-$$
$$\frac{4\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{3}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{9/2}}+$$
$$\frac{3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{5}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{9/2}}-$$
$$\frac{\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{9/2}}$$

Problem 379: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+a\,\text{Sin}[e+fx]\right)^{7/2}}{\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}\,dx$$

Optimal (type 3, 88 leaves, 2 steps):

$$\frac{\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^{7/2}}{10\,f\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}+\frac{\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^{7/2}}{80\,c\,f\left(c-c\,\text{Sin}[e+fx]\right)^{9/2}}$$

Result (type 3, 331 leaves):

$$\frac{8\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{5\,f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}-$$
$$\frac{3\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{3}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}+$$
$$\frac{2\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{5}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}-$$
$$\frac{\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{7/2}}{2\,f\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^{7}\left(c-c\,\text{Sin}[e+fx]\right)^{11/2}}$$

Problem 380: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+a\,\text{Sin}[e+fx]\right)^{7/2}}{\left(c-c\,\text{Sin}[e+fx]\right)^{13/2}}\,dx$$

Optimal (type 3, 133 leaves, 3 steps):

$$\frac{\cos[e+fx]\,(a+a\sin[e+fx])^{7/2}}{12\,f\,(c-c\sin[e+fx])^{13/2}}+\frac{\cos[e+fx]\,(a+a\sin[e+fx])^{7/2}}{60\,c\,f\,(c-c\sin[e+fx])^{11/2}}+\frac{\cos[e+fx]\,(a+a\sin[e+fx])^{7/2}}{480\,c^2\,f\,(c-c\sin[e+fx])^{9/2}}$$

Result (type 3, 335 leaves):

$$\frac{4\left(\cos\left[\frac{1}{2}(e+fx)\right]-\sin\left[\frac{1}{2}(e+fx)\right]\right)(a\,(1+\sin[e+fx]))^{7/2}}{3\,f\left(\cos\left[\frac{1}{2}(e+fx)\right]+\sin\left[\frac{1}{2}(e+fx)\right]\right)^7(c-c\sin[e+fx])^{13/2}}-\frac{12\left(\cos\left[\frac{1}{2}(e+fx)\right]-\sin\left[\frac{1}{2}(e+fx)\right]\right)^3(a\,(1+\sin[e+fx]))^{7/2}}{5\,f\left(\cos\left[\frac{1}{2}(e+fx)\right]+\sin\left[\frac{1}{2}(e+fx)\right]\right)^7(c-c\sin[e+fx])^{13/2}}+\frac{3\left(\cos\left[\frac{1}{2}(e+fx)\right]-\sin\left[\frac{1}{2}(e+fx)\right]\right)^5(a\,(1+\sin[e+fx]))^{7/2}}{2\,f\left(\cos\left[\frac{1}{2}(e+fx)\right]+\sin\left[\frac{1}{2}(e+fx)\right]\right)^7(c-c\sin[e+fx])^{13/2}}-\frac{\left(\cos\left[\frac{1}{2}(e+fx)\right]-\sin\left[\frac{1}{2}(e+fx)\right]\right)^7(a\,(1+\sin[e+fx]))^{7/2}}{3\,f\left(\cos\left[\frac{1}{2}(e+fx)\right]+\sin\left[\frac{1}{2}(e+fx)\right]\right)^7(c-c\sin[e+fx])^{13/2}}$$

Problem 385: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c-c\sin[e+fx]}}{\sqrt{a+a\sin[e+fx]}}\,dx$$

Optimal (type 3, 49 leaves, 3 steps):

$$\frac{c\cos[e+fx]\,\mathrm{Log}[1+\sin[e+fx]]}{f\sqrt{a+a\sin[e+fx]}\,\sqrt{c-c\sin[e+fx]}}$$

Result (type 3, 130 leaves):

$$-\left(\left(\sqrt{2}\,\left(i+e^{i\,(e+fx)}\right)\left(fx+2\,\mathrm{ArcTan}\left[e^{i\,(e+fx)}\right]+i\,\mathrm{Log}\left[1+e^{2\,i\,(e+fx)}\right]\right)\sqrt{c-c\sin[e+fx]}\right)\Big/\left(\left(-i+e^{i\,(e+fx)}\right)\sqrt{-i\,a\,e^{-i\,(e+fx)}\left(i+e^{i\,(e+fx)}\right)^2}\;f\right)\right)$$

Problem 392: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c-c\sin[e+fx]}}{(a+a\sin[e+fx])^{3/2}}\,dx$$

Optimal (type 3, 41 leaves, 1 step):

$$-\frac{c\,\text{Cos}[e+f\,x]}{f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 85 leaves):

$$-\left(\left(\sqrt{a\,(1+\text{Sin}[e+f\,x])}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(a^2\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3\right)\right)$$

Problem 399: Result more than twice size of optimal antiderivative.

$$\int\frac{(c-c\,\text{Sin}[e+f\,x])^{3/2}}{(a+a\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 42 leaves, 1 step):

$$-\frac{\text{Cos}[e+f\,x]\,(c-c\,\text{Sin}[e+f\,x])^{3/2}}{4\,f\,(a+a\,\text{Sin}[e+f\,x])^{5/2}}$$

Result (type 3, 86 leaves):

$$\left(c\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\text{Sin}[e+f\,x]\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)(a\,(1+\text{Sin}[e+f\,x]))^{5/2}\right)$$

Problem 400: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c-c\,\text{Sin}[e+f\,x]}}{(a+a\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 43 leaves, 1 step):

$$-\frac{c\,\text{Cos}[e+f\,x]}{2\,f\,(a+a\,\text{Sin}[e+f\,x])^{5/2}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 87 leaves):

$$-\left(\left(\sqrt{a\,(1+\text{Sin}[e+f\,x])}\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)\Big/\left(2\,a^3\,f\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^5\right)\right)$$

Problem 404: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int(a+a\,\text{Sin}[e+f\,x])^m\,(c-c\,\text{Sin}[e+f\,x])^n\,dx$$

Optimal (type 5, 110 leaves, 4 steps):

$$\frac{1}{f\,(1+2\,m)}2^{\frac{1}{2}+n}\,c\,\mathrm{Cos}[e+f\,x]\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2}\,(1+2\,m),\,\frac{1}{2}\,(1-2\,n),\,\frac{1}{2}\,(3+2\,m),\,\frac{1}{2}\,(1+\mathrm{Sin}[e+f\,x])\right]\\ (1-\mathrm{Sin}[e+f\,x])^{\frac{1}{2}-n}\,(a+a\,\mathrm{Sin}[e+f\,x])^{m}\,(c-c\,\mathrm{Sin}[e+f\,x])^{-1+n}$$

Result (type 6, 4008 leaves):

$$-\left(\left(4\,(3+2\,n)\right.\right.\\ \mathrm{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\\ \left(\mathrm{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+2\,m}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2\,n}\,(a+a\,\mathrm{Sin}[e+f\,x])^{m}\\ \left.(c-c\,\mathrm{Sin}[e+f\,x])^{n}\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(1-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/\\ \left(f\,(1+2\,n)\,\left((3+2\,n)\,\mathrm{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\right.\right.\right.\\ \left.\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\\ 2\left(2\,m\,\mathrm{AppellF1}\left[\frac{3}{2}+n,\,1-2\,m,\,1+2\,(m+n),\,\frac{5}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\\ \left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(1+2\,m+2\,n)\,\mathrm{AppellF1}\left[\frac{3}{2}+n,\,-2\,m,\,2\,(1+m+n),\right.\\ \left.\left.\left.\frac{5}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\\ \left(\left((3+2\,n)\,\mathrm{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.\\ \left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\mathrm{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\\ \left.\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2\,n}\left(1-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/\\ \left((1+2\,n)\,\left((3+2\,n)\,\mathrm{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.\\ \left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-2\left(2\,m\,\mathrm{AppellF1}\left[\frac{3}{2}+n,\,1-2\,m,\,1+2\,(m+n),\right.\right.\\ \left.\frac{5}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(1+2\,m+2\,n)\\ \mathrm{AppellF1}\left[\frac{3}{2}+n,\,-2\,m,\,2\,(1+m+n),\,\frac{5}{2}+n,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\\ \left.\left.\left.\left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$

$$\left(2\,(1+2\,m)\,(3+2\,n)\,\text{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left.\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2\,n}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/$$

$$\left((1+2\,n)\left((3+2\,n)\,\text{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}+n,\,1-2\,m,\,1+2\,(m+n),\right.\right.$$

$$\left.\frac{5}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(1+2\,m+2\,n)$$

$$\text{AppellF1}\left[\frac{3}{2}+n,\,-2\,m,\,2\,(1+m+n),\,\frac{5}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$

$$\left(4\,n\,(3+2\,n)\,\text{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+2\,m}\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$

$$\left.\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-1+2\,n}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/$$

$$\left((1+2\,n)\left((3+2\,n)\,\text{AppellF1}\left[\frac{1}{2}+n,\,-2\,m,\,1+2\,(m+n),\,\frac{3}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}+n,\,1-2\,m,\,1+2\,(m+n),\right.\right.$$

$$\left.\frac{5}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(1+2\,m+2\,n)$$

$$\text{AppellF1}\left[\frac{3}{2}+n,\,-2\,m,\,2\,(1+m+n),\,\frac{5}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$

$$\left(4\,(3+2\,n)\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+2\,m}\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2\,n}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right.$$

$$\left(-\frac{1}{\frac{3}{2}+n}m\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2}+n,\,1-2\,m,\,1+2\,(m+n),\,\frac{5}{2}+n,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}+n\right)}\left(\frac{1}{2}+n\right)(1+2\,(m+n))\,\text{AppellF1}\left[\frac{3}{2}+n,\,-2\,m,\,2+2\,(m+n),\,\frac{5}{2}+n,\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left.\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\left(1-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2m}\right)\Big/$$

$$\left(\left(1+2n\right)\left(\left(3+2n\right)\text{AppellF1}\left[\frac{1}{2}+n,-2m,1+2(m+n),\frac{3}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-2\left(2m\,\text{AppellF1}\left[\frac{3}{2}+n,1-2m,1+2(m+n),\right.\right.$$
$$\left.\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\left(1+2m+2n\right)$$
$$\text{AppellF1}\left[\frac{3}{2}+n,-2m,2\left(1+m+n\right),\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)-$$

$$\left(4m\left(3+2n\right)\text{AppellF1}\left[\frac{1}{2}+n,-2m,1+2(m+n),\frac{3}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\left(\operatorname{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2m}\operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2n}$$
$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(1-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{-1+2m}\right)\Big/$$

$$\left(\left(1+2n\right)\left(\left(3+2n\right)\text{AppellF1}\left[\frac{1}{2}+n,-2m,1+2(m+n),\frac{3}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-2\left(2m\,\text{AppellF1}\left[\frac{3}{2}+n,1-2m,1+2(m+n),\right.\right.$$
$$\left.\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\left(1+2m+2n\right)$$
$$\text{AppellF1}\left[\frac{3}{2}+n,-2m,2\left(1+m+n\right),\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)-$$

$$\left(4\left(3+2n\right)\text{AppellF1}\left[\frac{1}{2}+n,-2m,1+2(m+n),\frac{3}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\left(\operatorname{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{1+2m}$$
$$\operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2n}\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(1-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2m}$$
$$\left(-\left(2m\,\text{AppellF1}\left[\frac{3}{2}+n,1-2m,1+2(m+n),\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\left(1+2m+2n\right)\text{AppellF1}\left[\frac{3}{2}+n,-2m,\right.$$
$$\left.\left.2\left(1+m+n\right),\frac{5}{2}+n,\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$
$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\left(3+2n\right)$$

$$\left(-\frac{1}{\frac{3}{2}+n} m \left(\frac{1}{2}+n\right) \text{AppellF1}\left[\frac{3}{2}+n, 1-2m, 1+2(m+n), \frac{5}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right] - \frac{1}{2\left(\frac{3}{2}+n\right)}\left(\frac{1}{2}+n\right)(1+2(m+n)) \text{AppellF1}\left[\frac{3}{2}+n, -2m, 2+2(m+n), \frac{5}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right) - 2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2$$

$$\left(2m\left(-\frac{1}{2\left(\frac{5}{2}+n\right)}\left(\frac{3}{2}+n\right)(1+2(m+n)) \text{AppellF1}\left[\frac{5}{2}+n, 1-2m, 2+2(m+n), \frac{7}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right] + \frac{1}{2\left(\frac{5}{2}+n\right)}(1-2m)\left(\frac{3}{2}+n\right) \text{AppellF1}\left[\frac{5}{2}+n, 2-2m, 1+2(m+n), \frac{7}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right) +$$

$$(1+2m+2n)\left(-\frac{1}{\frac{5}{2}+n} m \left(\frac{3}{2}+n\right) \text{AppellF1}\left[\frac{5}{2}+n, 1-2m, 2(1+m+n), \frac{7}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right] - \frac{1}{\frac{5}{2}+n}\left(\frac{3}{2}+n\right)(1+m+n) \text{AppellF1}\left[\frac{5}{2}+n, -2m, 1+2(1+m+n), \frac{7}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg) \Big/$$

$$\left((1+2n)\left((3+2n) \text{AppellF1}\left[\frac{1}{2}+n, -2m, 1+2(m+n), \frac{3}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] - 2\left(2m\,\text{AppellF1}\left[\frac{3}{2}+n, 1-2m, 1+2(m+n), \frac{5}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right] + (1+2m+2n) \text{AppellF1}\left[\frac{3}{2}+n, -2m, 2(1+m+n), \frac{5}{2}+n, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2\Big)\Big)\Big)\Big)$$

Problem 405: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^m\,(c-c\,\text{Sin}[e+f\,x])^3\,dx$$

Optimal (type 5, 86 leaves, 4 steps):

$$-\frac{1}{7\,f}2^{\frac{1}{2}+m}\,a^4\,c^3\,\text{Cos}[e+f\,x]^7\,\text{Hypergeometric2F1}\left[\frac{7}{2},\frac{1}{2}-m,\frac{9}{2},\frac{1}{2}\,(1-\text{Sin}[e+f\,x])\right]\,(1+\text{Sin}[e+f\,x])^{\frac{1}{2}-m}\,(a+a\,\text{Sin}[e+f\,x])^{-4+m}$$

Result (type 6, 12 670 leaves):

$$-\Bigg(\Bigg(\Bigg(2048\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-2m}\,(a+a\,\text{Sin}[e+f\,x])^m$$

$$(c-c\,\text{Sin}[e+f\,x])^3\,\Bigg(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^6-$$

$$6\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^5\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]+$$

$$15\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^4\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^2-$$

$$20\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^3\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^3+$$

$$15\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^2\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^4-$$

$$6\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^5+$$

$$\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2m}\,\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]^6\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$

$$\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2m}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{7+2m}$$

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^3\Bigg)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2m,4+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(2+m)\,\text{AppellF1}\left[\frac{3}{2},-2m,5+2m,\frac{5}{2},\right.$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)+$$

$$\Big(9\,\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,5+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Big)\Big/$$

$$\Big(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,5+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$2\,\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,5+2\,m,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+(5+2\,m)\ \mathrm{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,6+2\,m,\,\frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)+$$

$$\Big(9\,\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,6+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)\Big/$$

$$\Big(3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,6+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,\Big(m\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,6+2\,m,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+(3+m)\ \mathrm{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,7+2\,m,\,\frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)-$$

$$\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,7+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/$$

$$\Big(\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,7+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$\frac{2}{3}\,\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,7+2\,m,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+(7+2\,m)\ \mathrm{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,8+2\,m,\,\frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)\Big)\Big)\Big/$$

$$\Big(f\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^6\,\Big(512\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(1-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\left(\frac{1}{1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{7+2\,m}$$

$$\Big(\Big(3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-2\,m,\,4+2\,m,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^3\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,4+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2\,m,4+2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(2+m)\,\text{AppellF1}\left[\frac{3}{2},-2\,m,5+2\,m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2\,m,5+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,5+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$2\,\Bigg(2\,m\,\text{AppellF1}\left[\frac{3}{2},1-2\,m,5+2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(5+2\,m)\,\text{AppellF1}\left[\frac{3}{2},-2\,m,6+2\,m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2\,m,6+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,6+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2\,m,6+2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(3+m)\,\text{AppellF1}\left[\frac{3}{2},-2\,m,7+2\,m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)-$$

$$\text{AppellF1}\left[\frac{1}{2},-2\,m,7+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2},-2\,m,7+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$\frac{2}{3}\,\Bigg(2\,m\,\text{AppellF1}\left[\frac{3}{2},1-2\,m,7+2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+(7+2\,m)\,\text{AppellF1}\left[\frac{3}{2},-2\,m,8+2\,m,\frac{5}{2},\text{Tan}\left[\right.\right.$$

$$\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)-$$

$$2048\,m\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-1+2\,m}$$

$$\left(\frac{1}{1+\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{7+2 m}$$

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,4+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^3\Bigg)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,4+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,4+2 m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(2+m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,5+2 m,\frac{5}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2 m,5+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},-2 m,5+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$2\Bigg(2 m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,5+2 m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(5+2 m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,6+2 m,\frac{5}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2 m,6+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,6+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,6+2 m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(3+m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,7+2 m,\frac{5}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)-$$

$$\text{AppellF1}\left[\frac{1}{2},-2 m,7+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big/$$

$$\Bigg(\text{AppellF1}\left[\frac{1}{2},-2 m,7+2 m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$\frac{2}{3}\Bigg(2 m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,7+2 m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(7+2 m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,8+2 m,\frac{5}{2},\text{Tan}\left[\right.\right.$$

$$\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)\Bigg)-$$

$$1024\,(7+2 m)\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2 m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{8+2 m}$$

$$\Bigg(\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,4+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^3\Bigg)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,4+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,4+2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(2+m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,5+2 m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2 m,5+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},-2 m,5+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$2\,\Bigg(2 m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,5+2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(5+2 m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,6+2 m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)+$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},-2 m,6+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2 m,6+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2},1-2 m,6+2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+(3+m)\,\text{AppellF1}\left[\frac{3}{2},-2 m,7+2 m,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)-$$

$$\text{AppellF1}\left[\frac{1}{2},-2m,7+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big/$$

$$\Big(\text{AppellF1}\left[\frac{1}{2},-2m,7+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$\frac{2}{3}\Big(2m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,7+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(7+2m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,8+2m,\frac{5}{2},\text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$

$$2048\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{7+2m}$$

$$\Big(\Big(9\,\text{AppellF1}\left[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\Big)\Big/$$

$$\Big(2\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-4\Big(m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,4+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(2+m)\,\text{AppellF1}\Big[\frac{3}{2},$$

$$-2m,5+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+\Big(3\Big(-\frac{1}{3}m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,4+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{6}(4+2m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,5+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^3\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4\Big(m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,4+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(2+m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,5+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},-2m,5+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big/$$

$$\Big(-3\,\text{AppellF1}\Big[\frac{1}{2},-2m,5+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$2\Big(2m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,5+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(5+2m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,6+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$

$$\Big(9\Big(-\frac{1}{3}m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,5+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{6}(5+2m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,6+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\Big)\Big/$$

$$\Big(-3\,\text{AppellF1}\Big[\frac{1}{2},-2m,5+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$2\Big(2m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,5+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+(5+2m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,6+2m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},-2m,6+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big/$$

$$\Big(2\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2m,6+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-4\Big(m\,\text{AppellF1}\Big[\frac{3}{2},1-2m,6+2m,$$

$$\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$(3+m)\,\text{AppellF1}\Big[\frac{3}{2},-2m,7+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$

$$\left(9\left(-\frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2},1-2m,6+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right.\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-\frac{1}{6}(6+2m)\,\text{AppellF1}\left[\frac{3}{2},-2m,7+2m,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2$$
$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-2m,6+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]-\right.$$
$$4\left(m\,\text{AppellF1}\left[\frac{3}{2},1-2m,6+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+(3+m)\,\text{AppellF1}\left[\frac{3}{2},-2m,7+2m,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)-$$
$$\left(-\frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2},1-2m,7+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-$$
$$\frac{1}{6}(7+2m)\,\text{AppellF1}\left[\frac{3}{2},-2m,8+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\Big/$$
$$\left(\text{AppellF1}\left[\frac{1}{2},-2m,7+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]-\right.$$
$$\frac{2}{3}\left(2m\,\text{AppellF1}\left[\frac{3}{2},1-2m,7+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+(7+2m)\,\text{AppellF1}\left[\frac{3}{2},-2m,8+2m,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)-$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-2m,4+2m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right.$$
$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^3\left(-2\left(m\,\text{AppellF1}\left[\frac{3}{2},1-2m,4+2m,\frac{5}{2},\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+(2+m)\,\text{AppellF1}\left[\frac{3}{2},\right.$$
$$\left.\left.-2m,5+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]+3\left(-\frac{1}{3}m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$
$$\left.1-2m,4+2m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{6}\left(4+2\,m\right)\mathrm{AppellF1}\left[\frac{3}{2},-2\,m,5+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)-4\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Bigg(m\left(-\frac{3}{10}\left(4+2\,m\right)\mathrm{AppellF1}\left[\frac{5}{2},1-2\,m,5+2\,m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\frac{3}{10}\left(1-2\,m\right)\mathrm{AppellF1}\left[\frac{5}{2},2-2\,m,4+2\,m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)+\left(2+m\right)\left(-\frac{3}{5}\,m\,\mathrm{AppellF1}\left[\frac{5}{2},1-2\,m,5+2\,m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{3}{10}\left(5+2\,m\right)\mathrm{AppellF1}\left[\frac{5}{2},-2\,m,6+2\,m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2},-2\,m,4+2\,m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-4\left(m\,\mathrm{AppellF1}\left[\frac{3}{2},1-2\,m,4+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\left(2+m\right)\mathrm{AppellF1}\left[\frac{3}{2},-2\,m,5+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)^2-$$

$$\Bigg(9\,\mathrm{AppellF1}\left[\frac{1}{2},-2\,m,5+2\,m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Bigg(\Bigg(2\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1-2\,m,5+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\left(5+2\,m\right)\mathrm{AppellF1}\left[\frac{3}{2},-2\,m,6+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-3\left(-\frac{1}{3}\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1-2\,m,5+2\,m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{6}\left(5+2\,m\right)\mathrm{AppellF1}\Big[$$

$$\frac{3}{2}, -2m, 6+2m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big) + 2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\Big(2m\Big(-\frac{3}{10}(5+2m)\,\mathrm{AppellF1}\Big[\frac{5}{2}, 1-2m, 6+2m, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] + \frac{3}{10}(1-2m)\,\mathrm{AppellF1}\Big[\frac{5}{2}, 2-2m, 5+2m, \frac{7}{2}, \mathrm{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big) + (5+2m)\,\Big(-\frac{3}{5}m\,\mathrm{AppellF1}\Big[\frac{5}{2}, 1-2m,$$

$$6+2m, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{3}{10}(6+2m)\,\mathrm{AppellF1}\Big[$$

$$\frac{5}{2}, -2m, 7+2m, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big)\Big) \Big/$$

$$\Big(-3\,\mathrm{AppellF1}\Big[\frac{1}{2}, -2m, 5+2m, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] + 2\Big(2m\,\mathrm{AppellF1}\Big[\frac{3}{2}, 1-2m, 5+2m,$$

$$\frac{5}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$(5+2m)\,\mathrm{AppellF1}\Big[\frac{3}{2}, -2m, 6+2m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2 -$$

$$\Big(9\,\mathrm{AppellF1}\Big[\frac{1}{2}, -2m, 6+2m, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\Big(1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\,\Big(-2\Big(m\,\mathrm{AppellF1}\Big[\frac{3}{2}, 1-2m, 6+2m, \frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] + (3+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},$$

$$-2m, 7+2m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] + 3\,\Big(-\frac{1}{3}m\,\mathrm{AppellF1}\Big[\frac{3}{2},$$

$$1-2m, 6+2m, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{1}{6}(6+2m)\,\mathrm{AppellF1}\Big[$$

$$\frac{3}{2},\ -2\,m,\ 7+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)-4\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$
$$\Big(m\,\Big(-\frac{3}{10}\,(6+2\,m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\ 1-2\,m,\ 7+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\Big[$$
$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]+\frac{3}{10}\,(1-2\,m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\ 2-2\,m,\ 6+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\Big[\frac{1}{4}$$
$$\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$
$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)+(3+m)\,\Big(-\frac{3}{5}\,m\,\mathrm{AppellF1}\Big[\frac{5}{2},\ 1-2\,m,$$
$$7+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{3}{10}\,(7+2\,m)\,\mathrm{AppellF1}\Big[$$
$$\frac{5}{2},\ -2\,m,\ 8+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(3\,\mathrm{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 6+2\,m,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]-4\,\Big(m\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 6+2\,m,$$
$$\frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$
$$(3+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 7+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2+$$
$$\Big(\mathrm{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 7+2\,m,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\Big(-\frac{1}{3}\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 7+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{6}$$
$$(7+2\,m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 8+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{3}$$
$$\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 7+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+(7+2\,m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ -2\,m,$$

$$8+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big)$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{2}{3}\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Big(2\,m\,\Big(-\frac{3}{10}\,(7+2\,m)\,\mathrm{AppellF1}\left[\frac{5}{2},\ 1-2\,m,\ 8+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]+\frac{3}{10}\,(1-2\,m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\ 2-2\,m,\ 7+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)+(7+2\,m)\,\Big(-\frac{3}{5}\,m\,\mathrm{AppellF1}\Big[\frac{5}{2},\ 1-2\,m,$$

$$8+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{3}{10}\,(8+2\,m)\,\mathrm{AppellF1}\Big[$$

$$\frac{5}{2},\ -2\,m,\ 9+2\,m,\ \frac{7}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(\mathrm{AppellF1}\left[\frac{1}{2},\ -2\,m,\ 7+2\,m,\ \frac{3}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$\frac{2}{3}\,\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 7+2\,m,\ \frac{5}{2},$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$(7+2\,m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 8+2\,m,\ \frac{5}{2},\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2\Big)\Big)\Big)\Big)$$

Problem 406: Attempted integration timed out after 120 seconds.

$$\int (a+a\,\mathrm{Sin}[e+f\,x])^m\,(c-c\,\mathrm{Sin}[e+f\,x])^2\,dx$$

Optimal (type 5, 86 leaves, 4 steps):

$$-\frac{1}{5\,f}2^{\frac{1}{2}+m}\,a^3\,c^2\,\mathrm{Cos}[e+f\,x]^5\,\mathrm{Hypergeometric2F1}\left[\frac{5}{2},\ \frac{1}{2}-m,\ \frac{7}{2},\ \frac{1}{2}\,(1-\mathrm{Sin}[e+f\,x])\right]$$

$$(1+\mathrm{Sin}[e+f\,x])^{\frac{1}{2}-m}\,(a+a\,\mathrm{Sin}[e+f\,x])^{-3+m}$$

Result (type 1, 1 leaves):

???

Problem 407: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a + a \sin[e + f x])^m (c - c \sin[e + f x]) \, dx$$

Optimal (type 5, 84 leaves, 4 steps):

$$-\frac{1}{3 f} 2^{\frac{1}{2}+m} a^2 c \cos[e + f x]^3 \text{Hypergeometric2F1}\left[\frac{3}{2}, \frac{1}{2} - m, \frac{5}{2}, \frac{1}{2} (1 - \sin[e + f x])\right] (1 + \sin[e + f x])^{\frac{1}{2}-m} (a + a \sin[e + f x])^{-2+m}$$

Result (type 5, 283 leaves):

$$-\frac{1}{f (-1 + m) m (1 + m) \left(\cos\left[\frac{1}{2} (e + f x)\right] - \sin\left[\frac{1}{2} (e + f x)\right]\right)^2} \, i \, 2^{-1-2 m} c \, e^{-i (e+f x)} \left(1 + i e^{-i (e+f x)}\right)^{-2 m} \left(e^{-\frac{1}{4} i (2 e+\pi+2 f x)} \left(i + e^{i (e+f x)}\right)\right)^{2 m} \left(e^{2 i (e+f x)} (-1 + m) m \, \text{Hypergeometric2F1}\left[-1 - m, -2 m, -m, -i e^{-i (e+f x)}\right] + (1 + m) \left(m \, \text{Hypergeometric2F1}\left[1 - m, -2 m, 2 - m, -i e^{-i (e+f x)}\right] - 2 e^{i (e+f x)} (-1 + m) \text{Hypergeometric2F1}\left[-2 m, -m, 1 - m, -i e^{-i (e+f x)}\right]\right)\right) (-1 + \sin[e + f x]) (a (1 + \sin[e + f x]))^m \sin\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^{-2 m}$$

Problem 408: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a + a \sin[e + f x])^m}{c - c \sin[e + f x]} \, dx$$

Optimal (type 5, 76 leaves, 4 steps):

$$\frac{1}{c f} 2^{\frac{1}{2}+m} \text{Hypergeometric2F1}\left[-\frac{1}{2}, \frac{1}{2} - m, \frac{1}{2}, \frac{1}{2} (1 - \sin[e + f x])\right] \sec[e + f x] (1 + \sin[e + f x])^{\frac{1}{2}-m} (a + a \sin[e + f x])^m$$

Result (type 6, 4905 leaves):

$$-\left(\left(\cos\left[\frac{1}{2} \left(-e + \frac{\pi}{2} - f x\right)\right]^{2 m} \cot\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right] \left(\cos\left[\frac{1}{2} (e + f x)\right] - \sin\left[\frac{1}{2} (e + f x)\right]\right)^2 (a + a \sin[e + f x])^m \left(-\left(\text{AppellF1}\left[-\frac{1}{2}, -2 m, 2 m, \frac{1}{2}, \tan\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right]^2, -\tan\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right]^2\right] \middle/ \left(\text{AppellF1}\left[-\frac{1}{2}, -2 m, 2 m, \frac{1}{2}, \tan\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right]^2, -\tan\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right]^2\right] - 4 m \left(\text{AppellF1}\left[\frac{1}{2}, 1 - 2 m, 2 m, \frac{3}{2}, \tan\left[\frac{1}{4} \left(-e + \frac{\pi}{2} - f x\right)\right]^2, \right.\right.\right.\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},-2 m,1+2 m,\frac{3}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$
$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big/$$
$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4 m\,\Big(\text{AppellF1}\Big[\frac{3}{2},1-2 m,2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$\text{AppellF1}\Big[\frac{3}{2},-2 m,1+2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)\Big)\Big/$$
$$\Big(2 f\,(c-c\,\text{Sin}[e+f x])\,\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]\right)^2$$
$$\Big(-\frac{1}{8}\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2 m}\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$
$$\Big(-\Big(\text{AppellF1}\Big[-\frac{1}{2},-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big/$$
$$\Big(\text{AppellF1}\Big[-\frac{1}{2},-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-4$$
$$m\,\Big(\text{AppellF1}\Big[\frac{1}{2},1-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},-2 m,1+2 m,\frac{3}{2},\text{Tan}\Big[\frac{1}{4}$$
$$\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$
$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big/$$
$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4 m\,\Big(\text{AppellF1}\Big[\frac{3}{2},1-2 m,2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},-2 m,1+2 m,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)-$$
$$\frac{1}{2}m\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-1+2 m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]$$
$$\Big(-\Big(\text{AppellF1}\Big[-\frac{1}{2},-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big/$$

$$\Big(\text{AppellF1}\Big[-\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-4$$

$$m\ \Big(\text{AppellF1}\Big[\frac{1}{2},\ 1-2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 1+2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}$$

$$\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$

$$4\,m\ \Big(\text{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 2\,m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 1+2\,m,\ \frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\frac{1}{2}\,\text{Cos}\Big[\frac{1}{2}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^{2\,m}\,\text{Cot}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\ \Big(-\Big(\Big(m\,\text{AppellF1}\Big[\frac{1}{2},\ 1-2\,m,\ 2\,m,$$

$$\frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]+m\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 1+2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[-\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$

$$4\,m\ \Big(\text{AppellF1}\Big[\frac{1}{2},\ 1-2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 1+2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}$$

$$\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Big)\Big/$$

$$\Big(2\ \Big(3\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$

$$4\,m\ \Big(\text{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 2\,m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 1+2\,m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\right) \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big)\Big) +$$

$$\Big(3\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big(-\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1-2m, 2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] - \frac{1}{3}$$

$$m\,\text{AppellF1}\Big[\frac{3}{2}, -2m, 1+2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2}, -2m, 2m, \frac{3}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big] -$$

$$4m\,\Big(\text{AppellF1}\Big[\frac{3}{2}, 1-2m, 2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big] + \text{AppellF1}\Big[\frac{3}{2}, -2m, 1+2m, \frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big) +$$

$$\Big(\text{AppellF1}\Big[-\frac{1}{2}, -2m, 2m, \frac{1}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]$$

$$\Big(m\,\text{AppellF1}\Big[\frac{1}{2}, 1-2m, 2m, \frac{3}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] + m\,\text{AppellF1}\Big[\frac{1}{2}, -2m,$$

$$1+2m, \frac{3}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] - 2m\,\Big(\text{AppellF1}\Big[\frac{1}{2}, 1-2m,$$

$$2m, \frac{3}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big] + \text{AppellF1}\Big[\frac{1}{2},$$

$$-2m, 1+2m, \frac{3}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] - 4m\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2$$

$$\Big(-\frac{2}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1-2m, 1+2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] +$$

$$\frac{1}{6}\left(1-2m\right)\,\text{AppellF1}\Big[\frac{3}{2}, 2-2m, 2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big] -$$

$$\frac{1}{6}\left(1+2m\right)\,\text{AppellF1}\Big[\frac{3}{2}, -2m, 2+2m, \frac{5}{2}, \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2, -\text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]\Big)\Big)\Big)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$
$$4\,m\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\right.\right.$$
$$\left.\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2-$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(-2\,m\left(\text{AppellF1}\left[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\right.\right.\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\right.$$
$$\left.\left.-2\,m,\,1+2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+3\left(-\frac{1}{3}\,m\,\text{AppellF1}\left[\frac{3}{2},\right.\right.$$
$$1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{3}\,m\,\text{AppellF1}\left[\frac{3}{2},\right.$$
$$-2\,m,\,1+2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)-4\,m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$
$$\left(-\frac{6}{5}\,m\,\text{AppellF1}\left[\frac{5}{2},\,1-2\,m,\,1+2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$
$$\frac{3}{10}\left(1-2\,m\right)\text{AppellF1}\left[\frac{5}{2},\,2-2\,m,\,2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$
$$\frac{3}{10}\left(1+2\,m\right)\text{AppellF1}\left[\frac{5}{2},\,-2\,m,\,2+2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\right.\right.$$
$$\left.\left.\left.\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$
$$4\,m\left(\text{AppellF1}\left[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-\right.\right.\right.$$
$$\left.\left.\left.\left.\left.\left.f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\right)\right)\right)\right)$$

Problem 409: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+a\,\text{Sin}[e+f\,x])^m}{(c-c\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 5, 86 leaves, 4 steps):

$$\frac{1}{3\,a\,c^2\,f}2^{\frac{1}{2}+m}\,\text{Hypergeometric2F1}\left[-\frac{3}{2},\,\frac{1}{2}-m,\,-\frac{1}{2},\,\frac{1}{2}\,(1-\text{Sin}[e+f\,x])\right]\\ \text{Sec}[e+f\,x]^3\,(1+\text{Sin}[e+f\,x])^{\frac{1}{2}-m}\,(a+a\,\text{Sin}[e+f\,x])^{1+m}$$

Result (type 6, 10 191 leaves):

$$-\left(\left(\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^3\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4\right.\right.$$

$$(a+a\,\text{Sin}[e+f\,x])^m\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$

$$\left(-\left(\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right/\right.$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{1}{2},$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$

$$\left(9\,\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\left(27\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{3}{2},1-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[\frac{3}{2},-2\,m,1+2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\left(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\right)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{5}{2},1-2\,m,2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\text{AppellF1}\left[\frac{5}{2},-2\,m,1+2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\right)\Big/$$

$$\left(48\,f\,(c-c\,\text{Sin}[e+f\,x])^2\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]\right)^4\right.$$

$$\left(-\frac{1}{64}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}\right.$$

$$\left(-\left(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/\right.\right.$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\right.\right.$$

$$\left.\left.\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$

$$\left(9\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{1}{2},1-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},-2\,m,1+2\,m,\frac{3}{2},$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$\left(27\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{3}{2},1-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},-2\,m,1+2\,m,\frac{5}{2},$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\right)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{5}{2},1-2\,m,2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},-2\,m,1+2\,m,\frac{7}{2},$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$

$$\frac{1}{24}\,m\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^3\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-1+2\,m}$$

$$\left(-\left(\left(\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\right)\right)-\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)}\right)$$

$$\left(-\left(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/\right.\right.$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\right.$$

$$\left.\left.\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$

$$\left(9\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\left[\frac{1}{2},1-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},-2\,m,1+2\,m,\frac{3}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(27\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\left[\frac{3}{2},1-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},-2\,m,1+2\,m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\Bigg)\Bigg/$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\left[\frac{5}{2},1-2\,m,2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},-2\,m,1+2\,m,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\frac{1}{48}\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^3\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$

$$\Bigg(-\Bigg(\Bigg(-3\,m\,\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-3$$

$$m\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg/$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$4\,m\,\left(\text{AppellF1}\left[-\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\right.\right.$$
$$\left.\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$
$$\left(9\,\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\left.\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\Big/$$
$$\left(2\,\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.\right.$$
$$4\,m\,\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\right.\right.$$
$$\left.\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$
$$\left(9\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(m\,\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]+m$$
$$\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)\Big/$$
$$\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$
$$4\,m\,\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$
$$\left(27\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\left.\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^3\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$
$$4\,m\,\left(\text{AppellF1}\left[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},\right.$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)\ +$$

$$\Big(27\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^4\ \Big(-\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},\ 1-2m,\ 2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]-\frac{1}{3}$$

$$m\,\text{AppellF1}\Big[\frac{3}{2},\ -2m,\ 1+2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\ -2m,\ 2m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]-$$

$$4m\,\Big(\text{AppellF1}\Big[\frac{3}{2},\ 1-2m,\ 2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\ -2m,\ 1+2m,\ \frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)\ +$$

$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\ -2m,\ 2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^5\Big)\Big/$$

$$\Big(2\,\Big(5\,\text{AppellF1}\Big[\frac{3}{2},\ -2m,\ 2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]-$$

$$4m\,\Big(\text{AppellF1}\Big[\frac{5}{2},\ 1-2m,\ 2m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},\ -2m,\ 1+2m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}$$

$$\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)\Big)\ +$$

$$\Big(5\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^6\ \Big(-\frac{3}{5}\,m\,\text{AppellF1}\Big[\frac{5}{2},\ 1-2m,\ 2m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]-\frac{3}{5}$$

$$m\,\text{AppellF1}\Big[\frac{5}{2},\ -2m,\ 1+2m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(5\,\text{AppellF1}\Big[\frac{3}{2},\ -2m,\ 2m,\ \frac{5}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]-$$

$$4m\,\Big(\text{AppellF1}\Big[\frac{5}{2},\ 1-2m,\ 2m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},\ -2m,\ 1+2m,\ \frac{7}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)\ +$$

$$\Big(\text{AppellF1}\Big[-\frac{3}{2},-2m,2m,-\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]$$

$$\Big(-3m\,\text{AppellF1}\Big[-\frac{1}{2},1-2m,2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]-3$$

$$m\,\text{AppellF1}\Big[-\frac{1}{2},-2m,1+2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]+2$$

$$m\,\Big(\text{AppellF1}\Big[-\frac{1}{2},1-2m,2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]+\text{AppellF1}\Big[-\frac{1}{2},-2m,1+2m,$$

$$\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]+4m\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2$$

$$\Big(2m\,\text{AppellF1}\Big[\frac{1}{2},1-2m,1+2m,\frac{3}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]-$$

$$\frac{1}{2}(1-2m)\,\text{AppellF1}\Big[\frac{1}{2},2-2m,2m,\frac{3}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]+$$

$$\frac{1}{2}(1+2m)\,\text{AppellF1}\Big[\frac{1}{2},-2m,2+2m,\frac{3}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[$$

$$\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]\Big)\Big)\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[-\frac{3}{2},-2m,2m,-\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]+$$

$$4m\,\Big(\text{AppellF1}\Big[-\frac{1}{2},1-2m,2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]+\text{AppellF1}\Big[-\frac{1}{2},-2m,1+2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}$$

$$\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big)^2+$$

$$\Big(9\,\text{AppellF1}\Big[-\frac{1}{2},-2m,2m,\frac{1}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2$$

$$\Big(m\,\text{AppellF1}\Big[\frac{1}{2},1-2m,2m,\frac{3}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2,-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-fx\Big)\Big]+m\,\text{AppellF1}\Big[\frac{1}{2},-2m,$$

$$1+2\,m,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-2\,m\,\Big(\text{AppellF1}\Big[\frac{1}{2},\ 1-2\,m,$$

$$2\,m,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},$$

$$-2\,m,\ 1+2\,m,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-4\,m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Big(-\frac{2}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 1+2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$

$$\frac{1}{6}\,(1-2\,m)\,\text{AppellF1}\Big[\frac{3}{2},\ 2-2\,m,\ 2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{6}\,(1+2\,m)\,\text{AppellF1}\Big[\frac{3}{2},\ -2\,m,\ 2+2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[-\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{1}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]-$$

$$4\,m\,\Big(\text{AppellF1}\Big[\frac{1}{2},\ 1-2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 1+2\,m,\ \frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2-$$

$$\Big(27\,\text{AppellF1}\Big[\frac{1}{2},\ -2\,m,\ 2\,m,\ \frac{3}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\Big(-2\,m\,\Big(\text{AppellF1}\Big[\frac{3}{2},\ 1-2\,m,\ 2\,m,\ \frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},$$

$$-2\,m,\ 1+2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+3\,\Big(-\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},$$

$$1-2\,m,\ 2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{3}\,m\,\text{AppellF1}\Big[\frac{3}{2},$$

$$-2\,m,\ 1+2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big) - 4 m \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\Big(-\frac{6}{5} m \operatorname{AppellF1}\left[\frac{5}{2}, 1-2m, 1+2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +$$

$$\frac{3}{10}(1-2m) \operatorname{AppellF1}\left[\frac{5}{2}, 2-2m, 2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{3}{10}(1+2m) \operatorname{AppellF1}\left[\frac{5}{2}, -2m, 2+2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\right.\right.$$

$$\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big) \Big/$$

$$\Big(3 \operatorname{AppellF1}\left[\frac{1}{2}, -2m, 2m, \frac{3}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] -$$

$$4 m \Big(\operatorname{AppellF1}\left[\frac{3}{2}, 1-2m, 2m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \operatorname{AppellF1}\left[\frac{3}{2}, -2m, 1+2m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\right.\right.$$

$$\left.\left.\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big) \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2 -$$

$$\Big(5 \operatorname{AppellF1}\left[\frac{3}{2}, -2m, 2m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^6 \Big(-2 m \Big(\operatorname{AppellF1}\left[\frac{5}{2}, 1-2m, 2m, \frac{7}{2},\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \operatorname{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.-2m, 1+2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] + 5\Big(-\frac{3}{5} m \operatorname{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.1-2m, 2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{3}{5} m \operatorname{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.-2m, 1+2m, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big) - 4 m \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\Big(-\frac{10}{7} m \operatorname{AppellF1}\left[\frac{7}{2}, 1-2m, 1+2m, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +$$

$$\frac{5}{14}(1-2m) \operatorname{AppellF1}\left[\frac{7}{2}, 2-2m, 2m, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$
$$\frac{5}{14}(1+2m)\ \mathrm{AppellF1}\Big[\frac{7}{2},-2m,2+2m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\Big[$$
$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\ \mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big)\Big/$$
$$\Big(5\ \mathrm{AppellF1}\Big[\frac{3}{2},-2m,2m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4m\Big(\mathrm{AppellF1}\Big[\frac{5}{2},1-2m,2m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\mathrm{AppellF1}\Big[\frac{5}{2},-2m,1+2m,\frac{7}{2},\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-$$
$$f x\Big)\Big]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2\Big)\Big)\Big)$$

Problem 410: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+a\,\mathrm{Sin}[e+f x])^m}{(c-c\,\mathrm{Sin}[e+f x])^3}\,dx$$

Optimal (type 5, 86 leaves, 4 steps):

$$\frac{1}{5 a^2 c^3 f}2^{\frac{1}{2}+m}\ \mathrm{Hypergeometric2F1}\left[-\frac{5}{2},\frac{1}{2}-m,-\frac{3}{2},\frac{1}{2}(1-\mathrm{Sin}[e+f x])\right]$$
$$\mathrm{Sec}[e+f x]^5\,(1+\mathrm{Sin}[e+f x])^{\frac{1}{2}-m}\,(a+a\,\mathrm{Sin}[e+f x])^{2+m}$$

Result (type 6, 15 208 leaves):

$$-\Big(\Big(\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^5\left(\mathrm{Cos}\left[\frac{1}{2}(e+f x)\right]-\mathrm{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6$$
$$(a+a\,\mathrm{Sin}[e+f x])^m\left(\frac{1-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{2m}$$
$$\Big(-\Big(\Big(9\ \mathrm{AppellF1}\Big[-\frac{5}{2},-2m,2m,-\frac{3}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\Big/$$
$$\Big(3\ \mathrm{AppellF1}\Big[-\frac{5}{2},-2m,2m,-\frac{3}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$4m\Big(\mathrm{AppellF1}\Big[-\frac{3}{2},1-2m,2m,-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\mathrm{AppellF1}\Big[-\frac{3}{2},-2m,1+2m,-\frac{1}{2},$$
$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)-$$

$$\left(25\,\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)-\left(150\,\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\left(450\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\left(125\,\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,2\,m,\,\frac{5}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^8\right)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{5}{2},\,1-2\,m,\,2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$\left.\text{AppellF1}\left[\frac{5}{2},\,-2\,m,\,1+2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\left(21\,\text{AppellF1}\left[\frac{5}{2},\,-2\,m,\,2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{10}\right)\Big/$$

$$\left(7\,\text{AppellF1}\left[\frac{5}{2},\,-2\,m,\,2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{7}{2},1-2\,m,2\,m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$\text{AppellF1}\left[\frac{7}{2},-2\,m,1+2\,m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\Bigg/$$

$$\left(1920\,f\,(c-c\,\text{Sin}[e+f\,x])^3\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]\right)^6\right.$$

$$\left(-\frac{1}{1536}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}\right.$$

$$\left(-\left(\left(9\,\text{AppellF1}\left[-\frac{5}{2},-2\,m,2\,m,-\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-\right.\right.\right.\right.\right.\right.$$
$$\left.\left.\left.f\,x\right)\right]^2\right]\right)\Bigg/\left(3\,\text{AppellF1}\left[-\frac{5}{2},-2\,m,2\,m,-\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+4\,m\left(\text{AppellF1}\left[-\frac{3}{2},1-2\,m,2\,m,-\frac{1}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{3}{2},\right.$$
$$\left.\left.-2\,m,1+2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$
$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-\left(25\,\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg/$$
$$\left(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\right.\right.$$
$$\left.\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)-$$
$$\left(150\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg/\left(\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\right.\right.$$
$$\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-4\,m\left(\text{AppellF1}\left[\frac{1}{2},1-2\,m,\right.\right.$$
$$2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},\right.$$
$$\left.\left.-2\,m,1+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+\Bigg(450\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\left[\frac{3}{2},1-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},-2\,m,1+2\,m,\frac{5}{2},\text{Tan}\left[\right.\right.$$

$$\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(125\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^8\Bigg)\Bigg/\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},-2\,m,2\,m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-4\,m\,\Bigg(\text{AppellF1}\left[\frac{5}{2},1-2\,m,2\,m,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{5}{2},\right.$$

$$\left.-2\,m,1+2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+\Bigg(21\,\text{AppellF1}\left[\frac{5}{2},-2\,m,2\,m,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{10}\Bigg)\Bigg/$$

$$\Bigg(7\,\text{AppellF1}\left[\frac{5}{2},-2\,m,2\,m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\left[\frac{7}{2},1-2\,m,2\,m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{7}{2},-2\,m,1+2\,m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\right.\right.$$

$$\left.\left.\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\frac{1}{960}\,m\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^5\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-1+2\,m}$$

$$\Bigg(-\Bigg(\Bigg(\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\left(2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\right)\Bigg)-\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)}\Bigg)$$

$$\Bigg(-\Bigg(\Bigg(9\,\text{AppellF1}\left[-\frac{5}{2},-2\,m,2\,m,-\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\Bigg/$$

$$\left(3\,\text{AppellF1}\left[-\frac{5}{2},\,-2\,m,\,2\,m,\,-\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+4\,m\left(\text{AppellF1}\left[-\frac{3}{2},\,1-2\,m,\,2\,m,\,-\frac{1}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{3}{2},\right.$$

$$\left.\left.-2\,m,\,1+2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-\left(25\,\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{3}{2},\,-2\,m,\,2\,m,\,-\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$

$$4\,m\left(\text{AppellF1}\left[-\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{1}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)-$$

$$\left(150\,\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Big/$$

$$\left(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$\left(450\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$4\,m\left(\text{AppellF1}\left[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$\left(125\,\text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^8\right)\Big/$$

$$\left(5\,\mathrm{AppellF1}\left[\frac{3}{2},-2m,2m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-\right.$$

$$4m\left(\mathrm{AppellF1}\left[\frac{5}{2},1-2m,2m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\mathrm{AppellF1}\left[\frac{5}{2},-2m,1+2m,\frac{7}{2},$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)+$$

$$\left(21\,\mathrm{AppellF1}\left[\frac{5}{2},-2m,2m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^{10}\right)\Big/$$

$$\left(7\,\mathrm{AppellF1}\left[\frac{5}{2},-2m,2m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-\right.$$

$$4m\left(\mathrm{AppellF1}\left[\frac{7}{2},1-2m,2m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\mathrm{AppellF1}\left[\frac{7}{2},-2m,1+2m,\frac{9}{2},$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)+$$

$$\frac{1}{1920}\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^5\left(\frac{1-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{2m}$$

$$\left(-\left(\left(9\left(-\frac{5}{3}m\,\mathrm{AppellF1}\left[-\frac{3}{2},1-2m,2m,-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{5}{3}m\,\mathrm{AppellF1}\left[-\frac{3}{2},-2m,1+2m,-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.\left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\Big/$$

$$\left(3\,\mathrm{AppellF1}\left[-\frac{5}{2},-2m,2m,-\frac{3}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+4m\left(\mathrm{AppellF1}\left[-\frac{3}{2},1-2m,2m,\right.\right.$$

$$-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$\mathrm{AppellF1}\left[-\frac{3}{2},-2m,1+2m,-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.\left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)-$$

$$\left(25\,\mathrm{AppellF1}\left[-\frac{3}{2},-2m,2m,-\frac{1}{2},\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg/$$

$$\Bigg(2\left(\text{AppellF1}\left[-\frac{3}{2},-2 m,2 m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+4 m\left(\text{AppellF1}\left[-\frac{1}{2},1-2 m,2 m,\frac{1}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},\right.$$

$$-2 m,1+2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)\Bigg)-\Bigg(25\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\Bigg(-3 m\,\text{AppellF1}\left[-\frac{1}{2},1-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$3 m\,\text{AppellF1}\left[-\frac{1}{2},-2 m,1+2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[-\frac{3}{2},-2 m,2 m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$4 m\left(\text{AppellF1}\left[-\frac{1}{2},1-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\text{AppellF1}\left[-\frac{1}{2},-2 m,1+2 m,\frac{1}{2},\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)-$$

$$\Bigg(150\,\text{AppellF1}\left[-\frac{1}{2},-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^3\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[-\frac{1}{2},-2 m,2 m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$4 m\left(\text{AppellF1}\left[\frac{1}{2},1-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\text{AppellF1}\left[\frac{1}{2},-2 m,1+2 m,\frac{3}{2},\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)-$$

$$\Bigg(150\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\Bigg(m\,\text{AppellF1}\left[\frac{1}{2},1-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+$$

$$m\,\text{AppellF1}\left[\frac{1}{2},-2 m,1+2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[-\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{1}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\Big[\frac{1}{2},\,1-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{1}{2},\,-2\,m,\,1+2\,m,\,\frac{3}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(675\ \text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^5\Bigg)\Bigg/$$

$$\Bigg(3\ \text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(450\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^6\ \Bigg(-\frac{1}{3}\,m\ \text{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ \text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]-\frac{1}{3}\,m\ \text{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\ \text{AppellF1}\left[\frac{1}{2},\,-2\,m,\,2\,m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\Big[\frac{3}{2},\,1-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\,-2\,m,\,1+2\,m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(250\ \text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^7\Bigg)\Bigg/$$

$$\Bigg(5\ \text{AppellF1}\left[\frac{3}{2},\,-2\,m,\,2\,m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Bigg(\text{AppellF1}\Big[\frac{5}{2},\,1-2\,m,\,2\,m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},-2 m,1+2 m,\frac{7}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$
$$\Big(125\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^8\Big(-\frac{3}{5}m\,\text{AppellF1}\Big[\frac{5}{2},1-2 m,2 m,\frac{7}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\Big[$$
$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]-\frac{3}{5}m\,\text{AppellF1}\Big[\frac{5}{2},-2 m,1+2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big/$$
$$\Big(5\,\text{AppellF1}\Big[\frac{3}{2},-2 m,2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4 m\Big(\text{AppellF1}\Big[\frac{5}{2},1-2 m,2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},-2 m,1+2 m,\frac{7}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+$$
$$\Big(105\,\text{AppellF1}\Big[\frac{5}{2},-2 m,2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^9\Big)\Big/$$
$$\Big(2\Big(7\,\text{AppellF1}\Big[\frac{5}{2},-2 m,2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4 m\Big(\text{AppellF1}\Big[\frac{7}{2},1-2 m,2 m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{7}{2},-2 m,1+2 m,\frac{9}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+$$
$$\frac{\pi}{2}-f x\Big)\Big]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$
$$\Big(21\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^{10}\Big(-\frac{5}{7}m\,\text{AppellF1}\Big[\frac{7}{2},1-2 m,2 m,\frac{9}{2},$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\Big[$$
$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]-\frac{5}{7}m\,\text{AppellF1}\Big[\frac{7}{2},-2 m,1+2 m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big/$$
$$\Big(7\,\text{AppellF1}\Big[\frac{5}{2},-2 m,2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$
$$4 m\Big(\text{AppellF1}\Big[\frac{7}{2},1-2 m,2 m,\frac{9}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{7}{2},-2 m,1+2 m,\frac{9}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)+$$

$$\Big(9\,\text{AppellF1}\Big[-\frac{5}{2},\ -2\,m,\ 2\,m,\ -\frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]$$

$$\Big(2\,m\,\Big(\text{AppellF1}\Big[-\frac{3}{2},\ 1-2\,m,\ 2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+\text{AppellF1}\Big[-\frac{3}{2},\ -2\,m,\ 1+2\,m,$$

$$-\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]+3\,\Big(-\frac{5}{3}\,m\,\text{AppellF1}\Big[-\frac{3}{2},$$

$$1-2\,m,\ 2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]-\frac{5}{3}\,m\,\text{AppellF1}\Big[-\frac{3}{2},$$

$$-2\,m,\ 1+2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)+4\,m\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2$$

$$\Big(-6\,m\,\text{AppellF1}\Big[-\frac{1}{2},\ 1-2\,m,\ 1+2\,m,\ \frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]+$$

$$\frac{3}{2}\,(1-2\,m)\ \text{AppellF1}\Big[-\frac{1}{2},\ 2-2\,m,\ 2\,m,\ \frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]-$$

$$\frac{3}{2}\,(1+2\,m)\ \text{AppellF1}\Big[-\frac{1}{2},\ -2\,m,\ 2+2\,m,\ \frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}$$

$$\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[-\frac{5}{2},\ -2\,m,\ 2\,m,\ -\frac{3}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+$$

$$4\,m\,\Big(\text{AppellF1}\Big[-\frac{3}{2},\ 1-2\,m,\ 2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]+\text{AppellF1}\Big[-\frac{3}{2},\ -2\,m,\ 1+2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+$$

$$\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big)^2+$$

$$\Big(25\,\text{AppellF1}\Big[-\frac{3}{2},\ -2\,m,\ 2\,m,\ -\frac{1}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\ \Big(-3\,m\,\text{AppellF1}\Big[-\frac{1}{2},\ 1-2\,m,\ 2\,m,\ \frac{1}{2},$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-3\,m\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+2\,m\,\Big(\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\left[-\frac{1}{2},\right.$$
$$-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+4\,m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$
$$\Big(2\,m\,\text{AppellF1}\left[\frac{1}{2},1-2\,m,1+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$
$$\frac{1}{2}\,(1-2\,m)\,\text{AppellF1}\left[\frac{1}{2},2-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+$$
$$\frac{1}{2}\,(1+2\,m)\,\text{AppellF1}\left[\frac{1}{2},-2\,m,2+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\right.\right.$$
$$\left.\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(\text{AppellF1}\left[-\frac{3}{2},-2\,m,2\,m,-\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$
$$4\,m\,\Big(\text{AppellF1}\left[-\frac{1}{2},1-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\left[-\frac{1}{2},-2\,m,1+2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\right.\right.\right.$$
$$\left.\left.\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2+$$
$$\Big(150\,\text{AppellF1}\left[-\frac{1}{2},-2\,m,2\,m,\frac{1}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\Big(m\,\text{AppellF1}\left[\frac{1}{2},1-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+$$
$$m\,\text{AppellF1}\left[\frac{1}{2},-2\,m,1+2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$
$$2\,m\,\Big(\text{AppellF1}\left[\frac{1}{2},1-2\,m,2\,m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\left[\frac{1}{2},-2\,m,1+2\,m,\right.$$

$$\frac{3}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - 4 m \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\left(-\frac{2}{3} m \operatorname{AppellF1}\left[\frac{3}{2}, 1-2 m, 1+2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +$$

$$\frac{1}{6}(1-2 m) \operatorname{AppellF1}\left[\frac{3}{2}, 2-2 m, 2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{1}{6}(1+2 m) \operatorname{AppellF1}\left[\frac{3}{2}, -2 m, 2+2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\right.\right.$$

$$\left.\left.\left.\left.\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\right) \Big/$$

$$\left(\operatorname{AppellF1}\left[-\frac{1}{2}, -2 m, 2 m, \frac{1}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] -\right.$$

$$4 m \left(\operatorname{AppellF1}\left[\frac{1}{2}, 1-2 m, 2 m, \frac{3}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \operatorname{AppellF1}\left[\frac{1}{2}, -2 m, 1+2 m, \frac{3}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\right.\right.\right.$$

$$\left.\left.\left.\left.\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2 -$$

$$\left(450 \operatorname{AppellF1}\left[\frac{1}{2}, -2 m, 2 m, \frac{3}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^6 \left(-2 m \left(\operatorname{AppellF1}\left[\frac{3}{2}, 1-2 m, 2 m, \frac{5}{2},\right.\right.\right.$$

$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \operatorname{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.\left.-2 m, 1+2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$

$$\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +$$

$$3 \left(-\frac{1}{3} m \operatorname{AppellF1}\left[\frac{3}{2}, 1-2 m, 2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{1}{3} m \operatorname{AppellF1}\left[\frac{3}{2}, -2 m, 1+2 m, \frac{5}{2}, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right) -$$

$$4 m \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \left(-\frac{6}{5} m \operatorname{AppellF1}\left[\frac{5}{2}, 1-2 m, 1+2 m, \frac{7}{2},\right.\right.$$

$$\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\frac{3}{10}(1-2 m)\,\text{AppellF1}\Big[\frac{5}{2},2-2 m,2 m,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{3}{10}(1+2 m)\,\text{AppellF1}\Big[\frac{5}{2},-2 m,2+2 m,$$

$$\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big]\Big)\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},-2 m,2 m,\frac{3}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]-$$

$$4 m\Big(\text{AppellF1}\Big[\frac{3}{2},1-2 m,2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},-2 m,1+2 m,\frac{5}{2},\text{Tan}\Big[\frac{1}{4}\Big(-e+$$

$$\frac{\pi}{2}-f x\Big)\Big]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2-$$

$$\Big(125\,\text{AppellF1}\Big[\frac{3}{2},-2 m,2 m,\frac{5}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^8\Big(-2 m\Big(\text{AppellF1}\Big[\frac{5}{2},1-2 m,2 m,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},$$

$$-2 m,1+2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+$$

$$5\Big(-\frac{3}{5} m\,\text{AppellF1}\Big[\frac{5}{2},1-2 m,2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{3}{5} m\,\text{AppellF1}\Big[\frac{5}{2},-2 m,1+2 m,\frac{7}{2},\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)-$$

$$4 m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big(-\frac{10}{7} m\,\text{AppellF1}\Big[\frac{7}{2},1-2 m,1+2 m,\frac{9}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\frac{5}{14}(1-2 m)\,\text{AppellF1}\Big[\frac{7}{2},2-2 m,2 m,\frac{9}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{5}{14}(1+2 m)\,\text{AppellF1}\Big[\frac{7}{2},-2 m,2+2 m,$$

$$\frac{9}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big]\Big)\Big)\Big)\Big/$$

$$\Big(5\,\text{AppellF1}\left[\frac{3}{2},\ -2\,m,\ 2\,m,\ \frac{5}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\,\Big(\text{AppellF1}\Big[\frac{5}{2},\ 1-2\,m,\ 2\,m,\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{5}{2},\ -2\,m,\ 1+2\,m,\ \frac{7}{2},\ \text{Tan}\Big[\frac{1}{4}\Big(-e+$$

$$\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2-$$

$$\Big(21\,\text{AppellF1}\left[\frac{5}{2},\ -2\,m,\ 2\,m,\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{10}\,\Big(-2\,m\,\Big(\text{AppellF1}\Big[\frac{7}{2},\ 1-2\,m,\ 2\,m,\ \frac{9}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{7}{2},$$

$$-2\,m,\ 1+2\,m,\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$

$$7\,\Big(-\frac{5}{7}\,m\,\text{AppellF1}\Big[\frac{7}{2},\ 1-2\,m,\ 2\,m,\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{5}{7}\,m\,\text{AppellF1}\Big[\frac{7}{2},\ -2\,m,\ 1+2\,m,\ \frac{9}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)-$$

$$4\,m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\Big(-\frac{14}{9}\,m\,\text{AppellF1}\Big[\frac{9}{2},\ 1-2\,m,\ 1+2\,m,\ \frac{11}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\frac{7}{18}\,(1-2\,m)\,\text{AppellF1}\Big[\frac{9}{2},\ 2-2\,m,\ 2\,m,\ \frac{11}{2},$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{7}{18}\,(1+2\,m)\,\text{AppellF1}\Big[\frac{9}{2},\ -2\,m,\ 2+2\,m,$$

$$\frac{11}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big/$$

$$\Big(7\,\text{AppellF1}\left[\frac{5}{2},\ -2\,m,\ 2\,m,\ \frac{7}{2},\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$4\,m\left(\text{AppellF1}\left[\frac{7}{2},\,1-2\,m,\,2\,m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{7}{2},\,-2\,m,\,1+2\,m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 414: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^m}{\sqrt{c-c\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 5, 68 leaves, 3 steps):

$$\left(\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[1,\,\frac{1}{2}+m,\,\frac{3}{2}+m,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x])\right]\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Big/\left(f\,(1+2\,m)\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 3268 leaves):

$$\left(\sqrt{2}\,(1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Big/$$

$$\Bigg(f\,(1+2\,m)\,\Bigg(2\,(1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+$$

$$\Bigg(\text{AppellF1}\left[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+m\,\text{AppellF1}\left[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)$$

$$\sqrt{c-c\,\text{Sin}[e+f\,x]}\,\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]\right)$$

$$\Bigg(\Bigg((1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/$$

$$\left(\sqrt{2}\ (1+2m)\ \left(2\ (1+m)\ \text{AppellF1}\left[1+2m,\ 2m,\ 1,\ 2+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\right.\right.\right.$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2m,\ 2m,$$
$$2,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\left[2+2m,\ 1+2m,\ 1,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\Big)+$$
$$\left(\left((1+m)\ \text{AppellF1}\left[1+2m,\ 2m,\ 1,\ 2+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\right.\right.\right.$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2m}$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big/$$
$$\left(\sqrt{2}\ \left(2\ (1+m)\ \text{AppellF1}\left[1+2m,\ 2m,\ 1,\ 2+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\right.\right.\right.$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2m,\ 2m,$$
$$2,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\left[2+2m,\ 1+2m,\ 1,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\Big)-$$
$$\left(\sqrt{2}\ (1+m)\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{1+2m}\ \text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right.$$
$$\left(-\frac{1}{2\ (2+2m)}\ (1+2m)\ \text{AppellF1}\left[2+2m,\ 2m,\ 2,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\right.\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{2\ (2+2m)}$$
$$m\ (1+2m)\ \text{AppellF1}\left[2+2m,\ 1+2m,\ 1,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\right.$$
$$\left.\left.\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\Big/$$
$$\left((1+2m)\ \left(2\ (1+m)\ \text{AppellF1}\left[1+2m,\ 2m,\ 1,\ 2+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\right.\right.\right.$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2m,\ 2m,$$
$$2,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\left[2+2m,\ 1+2m,\ 1,\ 3+2m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\Big)+$$

$$\left(\sqrt{2}\,(1+m)\,\text{AppellF1}\left[1+2m,2m,1,2+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),\right.\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^{1+2m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2$$

$$\left(-(1+m)\,\text{AppellF1}\left[1+2m,2m,1,2+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),\right.\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-$$

$$\frac{1}{2}\left(\text{AppellF1}\left[2+2m,2m,2,3+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),\right.\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+m\,\text{AppellF1}\left[2+2m,1+2m,1,3+\right.$$

$$\left.\left.2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]+2\,(1+m)\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2$$

$$\left(-\frac{1}{2\,(2+2m)}(1+2m)\,\text{AppellF1}\left[2+2m,2m,2,3+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),\right.\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-$$

$$\frac{1}{2\,(2+2m)}m\,(1+2m)\,\text{AppellF1}\left[2+2m,1+2m,1,3+2m,\frac{1}{2}\right.$$

$$\left.\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)+\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]$$

$$\left(-\frac{1}{3+2m}(2+2m)\,\text{AppellF1}\left[3+2m,2m,3,4+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),\right.\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-$$

$$\frac{1}{2\,(3+2m)}m\,(2+2m)\,\text{AppellF1}\left[3+2m,1+2m,2,4+2m,\frac{1}{2}\left(1-\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]+m\left(-\frac{1}{2\,(3+2m)}(2+2m)\,\text{AppellF1}\left[3+2m,1+2m,\right.\right.$$

$$\left.2,4+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-\frac{1}{4\,(3+2m)}(1+2m)\,(2+2m)$$

$$\text{AppellF1}\left[3+2m,2+2m,1,4+2m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right),1-\right.$$

$$\left.\left.\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\right)\right)\right)\right)\Big/$$

$$\Big(\big(1+2\,m\big)\,\Big(2\,\big(1+m\big)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\,\Big(1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big),$$
$$1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cos}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,$$
$$2,\,3+2\,m,\,\frac{1}{2}\,\Big(1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big),\,1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+m$$
$$\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}\,\Big(1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big),$$
$$1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\,\text{Cos}\Big[\frac{1}{2}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Big)^2\Big)\Big)\Big)$$

Problem 415: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\big(a+a\,\text{Sin}[e+f\,x]\big)^m}{\big(c-c\,\text{Sin}[e+f\,x]\big)^{3/2}}\,dx$$

Optimal (type 5, 74 leaves, 3 steps):

$$\Big(\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\Big[2,\,\frac{1}{2}+m,\,\frac{3}{2}+m,\,\frac{1}{2}\,\big(1+\text{Sin}[e+f\,x]\big)\Big]\,\big(a+a\,\text{Sin}[e+f\,x]\big)^m\Big)\Big/$$
$$\Big(2\,c\,f\,\big(1+2\,m\big)\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\Big)$$

Result (type 6, 7559 leaves):

$$-\Bigg(\Bigg(\Bigg(\Big(\text{Cos}\Big[\frac{1}{2}\,\big(e+f\,x\big)\Big]-\text{Sin}\Big[\frac{1}{2}\,\big(e+f\,x\big)\Big]\Big)^3\,\big(a+a\,\text{Sin}[e+f\,x]\big)^m\,\left(\frac{1-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}{1+\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}\right)^{2\,m}$$
$$\Big(-\Big(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big/$$
$$\Big(-m\,\Big(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,$$
$$\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)+\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,$$
$$\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$
$$\Big(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$
$$\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big/$$
$$\Big(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]-$$
$$m\,\Big(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$\text{AppellF1}\left[2,-2m,1+2m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\Big)-$$
$$\left(4\,(1+m)\,\text{AppellF1}\left[1+2m,2m,1,2+2m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$
$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\left.\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)\Big/$$
$$\left(\left(1+2m\right)\left(-2\,(1+m)\,\text{AppellF1}\left[1+2m,2m,1,2+2m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.\right.$$
$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+\left(\text{AppellF1}\left[2+2m,2m,2,3+2m,\right.\right.$$
$$\left.\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+m$$
$$\text{AppellF1}\left[2+2m,1+2m,1,3+2m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$
$$\left.\left.\left.\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)\right)\right)\Big/$$
$$\left(8\sqrt{2}\,f\,\left(c-c\,\text{Sin}[e+fx]\right)^{3/2}\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+fx\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+fx\right)\right]\right)^3\right.$$
$$\left(\frac{1}{4\sqrt{2}}\,m\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}\right)^{-1+2m}\right.$$
$$\left(-\left(\left(\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)\Big/\right.\right.$$
$$\left.\left.\left(2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^2\right)\right)-\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]}{2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)}\right)$$
$$\left(-\left(\text{AppellF1}\left[1,-2m,2m,2,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\Big/\right.\right.$$
$$\left(-m\left(\text{AppellF1}\left[2,1-2m,2m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.\right.$$
$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+\text{AppellF1}\left[2,-2m,1+2m,\right.$$
$$\left.\left.3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)+$$
$$\text{AppellF1}\left[1,-2m,2m,2,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$
$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)+\left(\text{AppellF1}\left[1,-2m,2m,2,\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\Big)\Big/$$

$$\Big(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,-$$

$$m\,\Big(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,+$$

$$\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big)\,-$$

$$\Big(4\,(1+m)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,1-\text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\Big(-1+\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big)\Big)\Big/$$

$$\Big((1+2\,m)\,\Big(-2\,(1+m)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]+\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,1-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,+$$

$$m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\Big)\,\Big(-1+\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big)\Big)\Big)\Big)\,+$$

$$\frac{1}{8\,\sqrt{2}}\left(\frac{1-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2}{1+\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2}\right)^{2\,m}\Big(-\Big(\Big(\frac{1}{2}\,m\,\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,$$

$$\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]$$

$$\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2+\frac{1}{2}\,m\,\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,$$

$$\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]$$

$$\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big)\Big/\Big(-m\,\Big(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,$$

$$\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]+\text{AppellF1}\Big[2,$$

$$-2\,m,\,1+2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\Big)\,+$$

$$\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big)\Big)\,+$$

$$\Big(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\Big)\Big/$$

$$\Bigg(2\,\Bigg(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]-$$

$$m\,\Bigg(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]+\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-$$

$$f\,x\Big)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Bigg)\Bigg)+$$

$$\Bigg(\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\Bigg(-\frac{1}{2}\,m\,\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]-$$

$$\frac{1}{2}\,m\,\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]-$$

$$m\,\Bigg(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]+$$

$$\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Bigg)+$$

$$\Bigg(\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]$$

$$\Bigg(-m\,\Bigg(\frac{4}{3}\,m\,\text{AppellF1}\Big[3,\,1-2\,m,\,1+2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\,\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2-$$

$$\frac{1}{3}\,(1-2\,m)\,\text{AppellF1}\Big[3,\,2-2\,m,\,2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\,\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2+$$

$$\frac{1}{3}\,(1+2\,m)\,\text{AppellF1}\Big[3,\,-2\,m,\,2+2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,$$

$$-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\,\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Bigg)+$$

$$\frac{1}{2}\,\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]+\Bigg(\frac{1}{2}\,m\,\text{AppellF1}\Big[2,$$

$$1-2\,m,\,2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]$$

$$\text{Cot}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\,\text{Csc}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2+\frac{1}{2}\,m\,\text{AppellF1}\Big[2,$$

$$-2\,m,\,1+2\,m,\,3,\,\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)\Big)\Big/$$

$$\Big(-m\,\Big(\mathrm{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$\mathrm{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)+\mathrm{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,$$

$$\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2-$$

$$\Big(\mathrm{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\Big(-\frac{1}{2}\,m\,\mathrm{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\,m\,\mathrm{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\,m\,\Big(\mathrm{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\mathrm{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,$$

$$3,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-m\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Big(-\frac{4}{3}\,m\,\mathrm{AppellF1}\Big[3,\,1-2\,m,\,1+2\,m,\,4,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$

$$\frac{1}{3}\,(1-2\,m)\,\mathrm{AppellF1}\Big[3,\,2-2\,m,\,2\,m,\,4,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{3}\,(1+2\,m)\,\mathrm{AppellF1}\Big[3,\,-2\,m,\,2+2\,m,\,4,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big/$$

$$\Big(\mathrm{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]-$$

$$m\,\Big(\mathrm{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[2,-2 m,1+2 m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)^2-$$

$$\Big(2(1+m)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big/$$

$$\Big((1+2 m)\Big(-2(1+m)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2 m,2 m,2,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big)+$$

$$\Big(2(1+m)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big/$$

$$\Big((1+2 m)\Big(-2(1+m)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2 m,2 m,2,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big)-$$

$$\Big(4(1+m)\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big(-\frac{1}{2(2+2 m)}(1+2 m)\text{AppellF1}\Big[2+2 m,2 m,2,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{2(2+2 m)}m(1+2 m)\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big/$$

$$\left(\left(1+2\,m\right)\,\left(-2\,\left(1+m\right)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$
$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\left(-1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)\Big)+$$
$$\Big(4\,\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cot}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(-1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)$$
$$\Big(\frac{1}{2}\,\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)$$
$$\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-2\,\left(1+m\right)$$
$$\Big(-\frac{1}{2\,\left(2+2\,m\right)}\left(1+2\,m\right)\,\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{2\,\left(2+2\,m\right)}m\,\left(1+2\,m\right)$$
$$\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-$$
$$\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)+$$
$$\left(-1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\,\Big(-\frac{1}{3+2\,m}\left(2+2\,m\right)\,\text{AppellF1}\Big[3+2\,m,$$
$$2\,m,\,3,\,4+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{2\,\left(3+2\,m\right)}$$
$$m\,\left(2+2\,m\right)\,\text{AppellF1}\Big[3+2\,m,\,1+2\,m,\,2,\,4+2\,m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$
$$m\,\Big(-\frac{1}{2\,\left(3+2\,m\right)}\left(2+2\,m\right)\,\text{AppellF1}\Big[3+2\,m,\,1+2\,m,\,2,\,4+2\,m,$$

$$\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{4\,(3+2\,m)}$$
$$(1+2\,m)\,(2+2\,m)\,\text{AppellF1}\Big[3+2\,m,\,2+2\,m,\,1,\,4+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\Bigg((1+2\,m)\,\Bigg(-2\,(1+m)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 416: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^m}{(c-c\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 5, 74 leaves, 3 steps):

$$\left(\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[3,\,\frac{1}{2}+m,\,\frac{3}{2}+m,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x])\right]\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Big/$$
$$\left(4\,c^2\,f\,(1+2\,m)\,\sqrt{c-c\,\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 11 641 leaves):

$$-\Bigg(\Bigg(\Bigg(\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^5\,(a+a\,\text{Sin}[e+f\,x])^m\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$
$$\Bigg(-\Bigg(\Bigg(8\,\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\Bigg/$$
$$\Bigg(-m\,\Big(\text{AppellF1}\Big[2,\,1-2\,m,\,2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,\,3,$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)+\text{AppellF1}\Big[1,\,-2\,m,\,2\,m,\,2,$$

$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$

$$\Big(8\,\text{AppellF1}\left[1,-2 m,2 m,2,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big/$$

$$\Big(\text{AppellF1}\left[1,-2 m,2 m,2,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$m\,\Big(\text{AppellF1}\left[2,1-2 m,2 m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$\text{AppellF1}\left[2,-2 m,1+2 m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)+\Big(3\,\text{AppellF1}\left[2,-2 m,2 m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\left[2,-2 m,2 m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-$$

$$2 m\,\Big(\text{AppellF1}\left[3,1-2 m,2 m,4,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$\text{AppellF1}\left[3,-2 m,1+2 m,4,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)-$$

$$\Big(3\,\text{AppellF1}\left[2,-2 m,2 m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)\Big/$$

$$\Big(-2 m\,\Big(\text{AppellF1}\left[3,1-2 m,2 m,4,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$\text{AppellF1}\left[3,-2 m,1+2 m,4,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+3\,\text{AppellF1}\left[2,-2 m,2 m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\Big)-$$

$$\Big(24\,(1+m)\,\text{AppellF1}\left[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big)\Big/$$

$$\Big((1+2 m)\,\Big(-2\,(1+m)\,\text{AppellF1}\left[1+2 m,2 m,1,2+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\Big(\text{AppellF1}\left[2+2 m,2 m,2,3+2 m,\right.$$

$$\left.\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+m$$

$$\text{AppellF1}\left[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(128\sqrt{2}\ f\ (c-c\,\text{Sin}[e+f x])^{5/2}\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]\right)^5\right.$$

$$\left(\frac{1}{64\sqrt{2}}\,m\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}\right)^{-1+2m}\right.$$

$$\left(-\left(\left(\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\right)\right)-\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]}{2\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)}\right)$$

$$\left(-\left(\left(8\,\text{AppellF1}\left[1,-2m,2m,2,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\Big/\right.\right.$$

$$\left(-m\left(\text{AppellF1}\left[2,1-2m,2m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\text{AppellF1}\left[2,-2m,1+2m,\right.$$

$$\left.\left.3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)+$$

$$\text{AppellF1}\left[1,-2m,2m,2,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)+\left(8\,\text{AppellF1}\left[1,-2m,2m,2,\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big/$$

$$\left(\text{AppellF1}\left[1,-2m,2m,2,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-\right.$$

$$m\left(\text{AppellF1}\left[2,1-2m,2m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\right.$$

$$\text{AppellF1}\left[2,-2m,1+2m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)+$$

$$\left(3\,\text{AppellF1}\left[2,-2m,2m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[2,-2m,2m,3,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]-\right.$$

$$2m\left(\text{AppellF1}\left[3,1-2m,2m,4,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[3,-2\,m,1+2\,m,4,$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)-$$
$$\left(3\,\text{AppellF1}\left[2,-2\,m,2\,m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\Big/$$
$$\Big(-2\,m\,\Big(\text{AppellF1}\Big[3,1-2\,m,2\,m,4,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-$$
$$f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[3,-2\,m,1+2\,m,4,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+3\,\text{AppellF1}\Big[2,-2\,m,2\,m,$$
$$3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\Big)-$$
$$\Big(24\,(1+m)\,\text{AppellF1}\Big[1+2\,m,2\,m,1,2+2\,m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,1-\text{Tan}\Big[$$
$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)\Big/$$
$$\Big((1+2\,m)\,\Big(-2\,(1+m)\,\text{AppellF1}\Big[1+2\,m,2\,m,1,2+2\,m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2\,m,2\,m,2,3+2\,m,$$
$$\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\Big[2+2\,m,1+2\,m,1,3+2\,m,\frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)\Big)\Big)+$$
$$\frac{1}{128\sqrt{2}}\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}\Big(-\Big(\Big(8\,\Big(\frac{1}{2}\,m\,\text{AppellF1}\Big[2,1-2\,m,2\,m,3,$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$
$$\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\frac{1}{2}\,m\,\text{AppellF1}\Big[2,-2\,m,1+2\,m,3,$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$
$$\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)\Big)\Big/\Big(-m\,\Big(\text{AppellF1}\Big[2,1-2\,m,2\,m,3,$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[2,$$
$$-2\,m,1+2\,m,3,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)+$$
$$\text{AppellF1}\Big[1,-2\,m,2\,m,2,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big) +$$

$$\Big(4\,\mathrm{AppellF1}\Big[1,-2m,2m,2,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big/$$

$$\Big(\mathrm{AppellF1}\Big[1,-2m,2m,2,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] -$$

$$m\Big(\mathrm{AppellF1}\Big[2,1-2m,2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$\mathrm{AppellF1}\Big[2,-2m,1+2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big) +$$

$$\Big(8\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big(-\frac{1}{2}m\,\mathrm{AppellF1}\Big[2,1-2m,2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{1}{2}m\,\mathrm{AppellF1}\Big[2,-2m,1+2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)\Big/$$

$$\Big(\mathrm{AppellF1}\Big[1,-2m,2m,2,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] -$$

$$m\Big(\mathrm{AppellF1}\Big[2,1-2m,2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$\mathrm{AppellF1}\Big[2,-2m,1+2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big) +$$

$$\Big(3\,\mathrm{AppellF1}\Big[2,-2m,2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^3\Big)\Big/$$

$$\Big(3\,\mathrm{AppellF1}\Big[2,-2m,2m,3,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] -$$

$$2m\Big(\mathrm{AppellF1}\Big[3,1-2m,2m,4,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] + \mathrm{AppellF1}\Big[3,-2m,1+2m,4,$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big) +$$

$$\Big(3\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\Big(-\frac{2}{3}m\,\mathrm{AppellF1}\Big[3,1-2m,2m,4,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{2}{3}\,m\,\text{AppellF1}\left[3,\,-2\,m,\,1+2\,m,\,4,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[2,\,-2\,m,\,2\,m,\,3,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$
$$2\,m\left(\text{AppellF1}\left[3,\,1-2\,m,\,2\,m,\,4,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[3,\,-2\,m,\,1+2\,m,\,4,\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$
$$\left(8\,\text{AppellF1}\left[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\left(-m\left(\frac{4}{3}\,m\,\text{AppellF1}\left[3,\,1-2\,m,\,1+2\,m,\,4,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$
$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2-$$
$$\frac{1}{3}\left(1-2\,m\right)\,\text{AppellF1}\left[3,\,2-2\,m,\,2\,m,\,4,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+$$
$$\frac{1}{3}\left(1+2\,m\right)\,\text{AppellF1}\left[3,\,-2\,m,\,2+2\,m,\,4,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$
$$\frac{1}{2}\,\text{AppellF1}\left[1,\,-2\,m,\,2\,m,\,2,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\left(\frac{1}{2}\,m\,\text{AppellF1}\left[2,\right.\right.$$
$$\left.1-2\,m,\,2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\frac{1}{2}\,m\,\text{AppellF1}\left[2,\right.$$
$$\left.-2\,m,\,1+2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\left.\left.\left.\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\Big/$$
$$\left(-m\left(\text{AppellF1}\left[2,\,1-2\,m,\,2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.\right.$$
$$\text{AppellF1}\left[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)+\text{AppellF1}\left[1,\,-2\,m,\,2\,m,\,2,\right.$$
$$\left.\left.\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2-$$

$$\Big(3\,\Big(\frac{2}{3}\,m\,\text{AppellF1}\Big[3,\,1-2\,m,\,2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+$$
$$\frac{2}{3}\,m\,\text{AppellF1}\Big[3,\,-2\,m,\,1+2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\Big/$$
$$\Big(-2\,m\,\Big(\text{AppellF1}\Big[3,\,1-2\,m,\,2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[3,\,-2\,m,\,1+2\,m,\,4,$$
$$\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+$$
$$3\,\text{AppellF1}\Big[2,\,-2\,m,\,2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^4\Big)+$$
$$\Big(3\,\text{AppellF1}\Big[2,\,-2\,m,\,2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$
$$\Big(-m\,\Big(\text{AppellF1}\Big[3,\,1-2\,m,\,2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-$$
$$f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[3,\,-2\,m,\,1+2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-$$
$$2\,m\,\Big(\frac{3}{2}\,m\,\text{AppellF1}\Big[4,\,1-2\,m,\,1+2\,m,\,5,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2-$$
$$\frac{3}{8}\,(1-2\,m)\,\text{AppellF1}\Big[4,\,2-2\,m,\,2\,m,\,5,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+$$
$$\frac{3}{8}\,(1+2\,m)\,\text{AppellF1}\Big[4,\,-2\,m,\,2+2\,m,\,5,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)$$
$$\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+3\,\text{AppellF1}\Big[2,\,-2\,m,\,2\,m,\,3,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^3+$$
$$3\,\Big(\frac{2}{3}\,m\,\text{AppellF1}\Big[3,\,1-2\,m,\,2\,m,\,4,\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$
$$-\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\,\text{Csc}\Big[\frac{1}{4}\,\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2+$$

$$\frac{2}{3}\,m\,\text{AppellF1}\left[3,\,-2\,m,\,1+2\,m,\,4,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\Bigg)\Bigg)\Bigg/\Bigg(-2\,m\,\Bigg(\text{AppellF1}\Big[3,\,1-2\,m,\,2\,m,\,4,$$

$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\text{AppellF1}\Big[3,$$

$$-2\,m,\,1+2\,m,\,4,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+3\,\text{AppellF1}\left[2,\,-2\,m,\,2\,m,\,3,\,\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\Bigg)^2-$$

$$\Bigg(8\,\text{AppellF1}\left[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg(-\frac{1}{2}\,m\,\text{AppellF1}\left[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\,m\,\text{AppellF1}\left[2,\,-2\,m,\,1+2\,m,\,3,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\,m\,\Bigg(\text{AppellF1}\left[2,\,1-2\,m,\,2\,m,\,3,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\Big[2,\,-2\,m,\,1+2\,m,$$

$$3,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Bigg(-\frac{4}{3}\,m\,\text{AppellF1}\left[3,\,1-2\,m,\,1+2\,m,\,4,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$

$$\frac{1}{3}\,(1-2\,m)\,\text{AppellF1}\left[3,\,2-2\,m,\,2\,m,\,4,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{3}\,(1+2\,m)\,\text{AppellF1}\Big[3,\,-2\,m,\,2+2\,m,\,4,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\Big[\frac{1}{4}$$

$$\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\text{AppellF1}\left[1,\,-2\,m,\,2\,m,\,2,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$m \left(\text{AppellF1}\left[2, 1-2m, 2m, 3, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[2, -2m, 1+2m, 3, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)^2 -$$

$$\Bigg(3\,\text{AppellF1}\left[2, -2m, 2m, 3, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \Bigg(-m\left(\text{AppellF1}\left[3, 1-2m, 2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[3, -2m, 1+2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] + 3\Bigg(-\frac{2}{3} m\,\text{AppellF1}\left[3, 1-2m, 2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{2}{3} m\,\text{AppellF1}\left[3, -2m, 1+2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg) - 2m\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\Bigg(-\frac{3}{2} m\,\text{AppellF1}\left[4, 1-2m, 1+2m, 5, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +$$

$$\frac{3}{8}(1-2m)\,\text{AppellF1}\left[4, 2-2m, 2m, 5, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$

$$\frac{3}{8}(1+2m)\,\text{AppellF1}\left[4, -2m, 2+2m, 5, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[2, -2m, 2m, 3, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] -$$

$$2m\left(\text{AppellF1}\left[3, 1-2m, 2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[3, -2m, 1+2m, 4, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)^2 -$$

$$\Bigg(12(1+m)\,\text{AppellF1}\left[1+2m, 2m, 1, 2+2m, \frac{1}{2}-\frac{1}{2}\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg) \Bigg/$$

$$\Bigg(\left(1+2 m\right) \Bigg(-2 \left(1+m\right) \text{AppellF1}\left[1+2 m, 2 m, 1, 2+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \Bigg(\text{AppellF1}\Big[2+2 m, 2 m, 2, 3+2 m,$$

$$\frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, 1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$m \text{AppellF1}\Big[2+2 m, 1+2 m, 1, 3+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg) \left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg)\Bigg) +$$

$$\Bigg(12 \left(1+m\right) \text{AppellF1}\left[1+2 m, 2 m, 1, 2+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]$$

$$\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg) \Bigg/$$

$$\Bigg(\left(1+2 m\right) \Bigg(-2 \left(1+m\right) \text{AppellF1}\left[1+2 m, 2 m, 1, 2+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \Bigg(\text{AppellF1}\Big[2+2 m, 2 m, 2, 3+2 m,$$

$$\frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, 1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$m \text{AppellF1}\Big[2+2 m, 1+2 m, 1, 3+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg) \left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg)\Bigg) -$$

$$\Bigg(24 \left(1+m\right) \text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \Bigg(-\frac{1}{2 \left(2+2 m\right)} \left(1+2 m\right) \text{AppellF1}\Big[2+2 m,$$

$$2 m, 2, 3+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, 1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{1}{2 \left(2+2 m\right)}$$

$$m \left(1+2 m\right) \text{AppellF1}\Big[2+2 m, 1+2 m, 1, 3+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg) \left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Bigg) \Bigg/$$

$$\Bigg(\left(1+2 m\right) \Bigg(-2 \left(1+m\right) \text{AppellF1}\left[1+2 m, 2 m, 1, 2+2 m, \frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \Bigg(\text{AppellF1}\Big[2+2 m, 2 m, 2, 3+2 m,$$

$$\frac{1}{2}-\frac{1}{2} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, 1 - \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big] +$$

$$m\,\text{AppellF1}\Big[2+2m,\,1+2m,\,1,\,3+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\;\Big(-1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\Big)+$$

$$\Big(24\,(1+m)\,\text{AppellF1}\Big[1+2m,\,2m,\,1,\,2+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Cot}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\Big(-1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)$$

$$\Big(\frac{1}{2}\Big(\text{AppellF1}\Big[2+2m,\,2m,\,2,\,3+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+m\,\text{AppellF1}\Big[2+2m,\,1+2m,\,1,\,3+2m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-2\,(1+m)$$

$$\Big(-\frac{1}{2\,(2+2m)}(1+2m)\,\text{AppellF1}\Big[2+2m,\,2m,\,2,\,3+2m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-\frac{1}{2\,(2+2m)}m\,(1+2m)$$

$$\text{AppellF1}\Big[2+2m,\,1+2m,\,1,\,3+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,1-$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Big)+$$

$$\Big(-1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\;\Big(-\frac{1}{3+2m}(2+2m)\,\text{AppellF1}\Big[3+2m,$$

$$2m,\,3,\,4+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-\frac{1}{2\,(3+2m)}$$

$$m\,(2+2m)\,\text{AppellF1}\Big[3+2m,\,1+2m,\,2,\,4+2m,\,\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]+$$

$$m\,\Big(-\frac{1}{2\,(3+2m)}(2+2m)\,\text{AppellF1}\Big[3+2m,\,1+2m,\,2,\,4+2m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-\frac{1}{4\,(3+2m)}$$

$$(1+2m)\;(2+2m)\,\text{AppellF1}\Big[3+2m,\,2+2m,\,1,\,4+2m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Big(\Big(1+2\,m\Big)\,\Big(-2\,\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\ 2\,m,\ 1,\ 2+2\,m,\ \frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+\Big(\text{AppellF1}\Big[2+2\,m,\ 2\,m,\ 2,\ 3+2\,m,$$

$$\frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$m\,\text{AppellF1}\Big[2+2\,m,\ 1+2\,m,\ 1,\ 3+2\,m,\ \frac{1}{2}-\frac{1}{2}\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\left(-1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)^2\Big)\Big)\Big)\Big)$$

Problem 417: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(a+a\,\text{Sin}\left[e+f\,x\right]\right)^m}{\sqrt{c-c\,\text{Sin}\left[e+f\,x\right]}}\,dx$$

Optimal (type 5, 68 leaves, 3 steps):

$$\left(\text{Cos}\left[e+f\,x\right]\,\text{Hypergeometric2F1}\left[1,\ \frac{1}{2}+m,\ \frac{3}{2}+m,\ \frac{1}{2}\left(1+\text{Sin}\left[e+f\,x\right]\right)\right]\,\left(a+a\,\text{Sin}\left[e+f\,x\right]\right)^m\right)\Big/$$

$$\left(f\,\left(1+2\,m\right)\,\sqrt{c-c\,\text{Sin}\left[e+f\,x\right]}\right)$$

Result (type 6, 3268 leaves):

$$\Big(\sqrt{2}\,\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\ 2\,m,\ 1,\ 2+2\,m,$$

$$\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}$$

$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]-\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\,\left(a+a\,\text{Sin}\left[e+f\,x\right]\right)^m\Big)\Big/$$

$$\Big(f\,\left(1+2\,m\right)\,\Big(2\,\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\ 2\,m,\ 1,\ 2+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+$$

$$\Big(\text{AppellF1}\Big[2+2\,m,\ 2\,m,\ 2,\ 3+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2\,m,\ 1+2\,m,\ 1,\ 3+2\,m,$$

$$\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Big)$$

$$\sqrt{c - c\,\text{Sin}[e + f\,x]}\ \left(\text{Cos}\left[\frac{\pi}{4} + \frac{1}{2}\left(e - \frac{\pi}{2} + f\,x\right)\right] - \text{Sin}\left[\frac{\pi}{4} + \frac{1}{2}\left(e - \frac{\pi}{2} + f\,x\right)\right]\right)$$

$$\Bigg(\Bigg(\Big((1 + m)\ \text{AppellF1}\Big[1 + 2\,m,\ 2\,m,\ 1,\ 2 + 2\,m,$$

$$\frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]$$

$$\text{Cos}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^{1+2\,m}\ \text{Cot}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]\ \text{Csc}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big)\Big/$$

$$\Bigg(\sqrt{2}\ (1 + 2\,m)\ \Bigg(2\,(1 + m)\ \text{AppellF1}\Big[1 + 2\,m,\ 2\,m,\ 1,\ 2 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2 + \Bigg(\text{AppellF1}\Big[2 + 2\,m,\ 2\,m,$$

$$2,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big] +$$

$$m\,\text{AppellF1}\Big[2 + 2\,m,\ 1 + 2\,m,\ 1,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 -$$

$$\text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\Bigg)\ \text{Cos}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]\Bigg)\Bigg) +$$

$$\Bigg(\Big((1 + m)\ \text{AppellF1}\Big[1 + 2\,m,\ 2\,m,\ 1,\ 2 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^{2\,m}$$

$$\text{Cot}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\ \text{Sin}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]\Big)\Big/$$

$$\Bigg(\sqrt{2}\ \Bigg(2\,(1 + m)\ \text{AppellF1}\Big[1 + 2\,m,\ 2\,m,\ 1,\ 2 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2 + \Bigg(\text{AppellF1}\Big[2 + 2\,m,\ 2\,m,$$

$$2,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big] +$$

$$m\,\text{AppellF1}\Big[2 + 2\,m,\ 1 + 2\,m,\ 1,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 -$$

$$\text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\Bigg)\ \text{Cos}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]\Bigg)\Bigg) -$$

$$\Bigg(\sqrt{2}\ (1 + m)\ \text{Cos}\left[\frac{1}{2}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^{1+2\,m}\ \text{Cot}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2$$

$$\Bigg(-\frac{1}{2\,(2 + 2\,m)}(1 + 2\,m)\ \text{AppellF1}\Big[2 + 2\,m,\ 2\,m,\ 2,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),\ 1 -$$

$$\text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right] - \frac{1}{2\,(2 + 2\,m)}$$

$$m\,(1 + 2\,m)\ \text{AppellF1}\Big[2 + 2\,m,\ 1 + 2\,m,\ 1,\ 3 + 2\,m,\ \frac{1}{2}\left(1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\right),$$

$$1 - \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]^2\ \text{Tan}\left[\frac{1}{4}\left(-e + \frac{\pi}{2} - f\,x\right)\right]\Bigg)\Bigg)\Big/$$

$$\left(\left(1+2\,m\right)\,\left(2\,\left(1+m\right)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.\right.\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2\,m,\,2\,m,$$

$$2,\,3+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\right)\,\text{Cos}\left[\frac{1}{2}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)+$$

$$\left(\sqrt{2}\,\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{2}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\,\text{Cot}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(-\left(1+m\right)\,\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{Sin}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\,\left(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+$$

$$\left.2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\right)$$

$$\text{Sin}\left[\frac{1}{2}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]+2\,\left(1+m\right)\,\text{Cos}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(-\frac{1}{2\,\left(2+2\,m\right)}\left(1+2\,m\right)\,\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\,\left(2+2\,m\right)}m\,\left(1+2\,m\right)\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}$$

$$\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\left.\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)+\text{Cos}\left[\frac{1}{2}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$

$$\left(-\frac{1}{3+2\,m}\left(2+2\,m\right)\,\text{AppellF1}\Big[3+2\,m,\,2\,m,\,3,\,4+2\,m,\,\frac{1}{2}\,\left(1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\,\left(3+2\,m\right)}m\,\left(2+2\,m\right)\,\text{AppellF1}\Big[3+2\,m,\,1+2\,m,\,2,\,4+2\,m,\,\frac{1}{2}\,\Big(1-$$

$$\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big),\,1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+m\left(-\frac{1}{2\,(3+2\,m)}(2+2\,m)\,\text{AppellF1}\left[3+2\,m,\,1+2\,m,\,2,\,4+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{4\,(3+2\,m)}(1+2\,m)\,(2+2\,m)\,\text{AppellF1}\left[3+2\,m,\,2+2\,m,\,1,\,4+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg((1+2\,m)\left(2\,(1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\left(\text{AppellF1}\left[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+m\,\text{AppellF1}\left[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)^2\Bigg)\Bigg)\Bigg)$$

Problem 418: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(c+c\,\text{Sin}[e+f\,x])^m}{\sqrt{a-a\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 5, 68 leaves, 3 steps):

$$\left(\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[1,\,\frac{1}{2}+m,\,\frac{3}{2}+m,\,\frac{1}{2}(1+\text{Sin}[e+f\,x])\right](c+c\,\text{Sin}[e+f\,x])^m\right)\Big/\left(f\,(1+2\,m)\,\sqrt{a-a\,\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 3268 leaves):

$$\Bigg(\sqrt{2}\,(1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)(c+c\,\text{Sin}[e+f\,x])^m\Bigg)\Bigg/$$

$$\Bigg(f\,(1+2\,m)\,\Bigg(2\,(1+m)\,\text{AppellF1}\left[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\left(\text{AppellF1}\left[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\right.\right.$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,$$
$$\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)\Big)$$
$$\sqrt{a-a\,\text{Sin}[e+f x]}\,\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]\right)$$
$$\Bigg(\Bigg(\left(1+m\right)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,$$
$$\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$
$$\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{1+2 m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\text{Csc}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)\Big/$$
$$\Bigg(\sqrt{2}\,\left(1+2 m\right)\,\Bigg(2\left(1+m\right)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2 m,2 m,$$
$$2,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg)+$$
$$\Bigg(\left(1+m\right)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2 m}$$
$$\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Big/$$
$$\Bigg(\sqrt{2}\,\Bigg(2\left(1+m\right)\text{AppellF1}\Big[1+2 m,2 m,1,2+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$
$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2 m,2 m,$$
$$2,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$
$$m\,\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg)-$$
$$\Bigg(\sqrt{2}\,\left(1+m\right)\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{1+2 m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$
$$\Bigg(-\frac{1}{2\left(2+2 m\right)}\left(1+2 m\right)\text{AppellF1}\Big[2+2 m,2 m,2,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),1-$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{2\left(2+2 m\right)}$$
$$m\left(1+2 m\right)\text{AppellF1}\Big[2+2 m,1+2 m,1,3+2 m,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(1+2\,m\right)\Bigg(2\left(1+m\right)\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+\Bigg(\text{AppellF1}\Big[2+2\,m,\,2\,m,$$

$$2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)+$$

$$\Bigg(\sqrt{2}\,\left(1+m\right)\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\text{Cot}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Bigg(-\left(1+m\right)\text{AppellF1}\Big[1+2\,m,\,2\,m,\,1,\,2+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2}\Bigg(\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+m\,\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+$$

$$2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+2\left(1+m\right)\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\Bigg(-\frac{1}{2\left(2+2\,m\right)}\left(1+2\,m\right)\text{AppellF1}\Big[2+2\,m,\,2\,m,\,2,\,3+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\left(2+2\,m\right)}m\left(1+2\,m\right)\text{AppellF1}\Big[2+2\,m,\,1+2\,m,\,1,\,3+2\,m,\,\frac{1}{2}$$

$$\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),\,1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)+\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$

$$\Bigg(-\frac{1}{3+2\,m}\left(2+2\,m\right)\text{AppellF1}\Big[3+2\,m,\,2\,m,\,3,\,4+2\,m,\,\frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\left(3+2\,m\right)}m\left(2+2\,m\right)\text{AppellF1}\Big[3+2\,m,\,1+2\,m,\,2,\,4+2\,m,\,\frac{1}{2}\Bigg(1-$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+m\left(-\frac{1}{2\,(3+2\,m)}(2+2\,m)\ \text{AppellF1}\Big[3+2\,m,\ 1+2\,m,\right.$$

$$2,\ 4+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{4\,(3+2\,m)}(1+2\,m)\ (2+2\,m)$$

$$\text{AppellF1}\Big[3+2\,m,\ 2+2\,m,\ 1,\ 4+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-$$

$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\right)\right)\Big/$$

$$\Bigg((1+2\,m)\ \Big(2\,(1+m)\ \text{AppellF1}\Big[1+2\,m,\ 2\,m,\ 1,\ 2+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2+\Big(\text{AppellF1}\Big[2+2\,m,\ 2\,m,$$

$$2,\ 3+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),\ 1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+m$$

$$\text{AppellF1}\Big[2+2\,m,\ 1+2\,m,\ 1,\ 3+2\,m,\ \frac{1}{2}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right),$$

$$1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\ \text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\Big)^2\Big)\Bigg)$$

Problem 421: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^m\ (c-c\,\text{Sin}[e+f\,x])^{-1-m}\,dx$$

Optimal (type 3, 46 leaves, 1 step):

$$\frac{\text{Cos}[e+f\,x]\ (a+a\,\text{Sin}[e+f\,x])^m\ (c-c\,\text{Sin}[e+f\,x])^{-1-m}}{f\,(1+2\,m)}$$

Result (type 3, 107 leaves):

$$\frac{1}{c\,f\,(1+2\,m)}2^{-m}\,\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^{-1-2\,m}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{2\,m}$$

$$(a\,(1+\text{Sin}[e+f\,x]))^m\ (c-c\,\text{Sin}[e+f\,x])^{-m}\,\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]$$

Problem 422: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^m\ (c-c\,\text{Sin}[e+f\,x])^{-m}\,dx$$

Optimal (type 5, 112 leaves, 4 steps):

$$\frac{1}{f\,(1+2\,m)}2^{\frac{1}{2}-m}\,c\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2}\,(1+2\,m),\,\frac{1}{2}\,(1+2\,m),\,\frac{1}{2}\,(3+2\,m),\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x])\right]\left(1-\text{Sin}[e+f\,x]\right)^{\frac{1}{2}+m}\,(a+a\,\text{Sin}[e+f\,x])^m\,(c-c\,\text{Sin}[e+f\,x])^{-1-m}$$

Result (type 6, 3987 leaves):

$$\left(2^{2-m}\,(-3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,1,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{1+2\,m}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-2\,m}$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{2\,m}\,(a+a\,\text{Sin}[e+f\,x])^m$$
$$(c-c\,\text{Sin}[e+f\,x])^{-m}\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right)\right]\right)^{-2\,m}$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/\left(f\,(-1+2\,m)\right.$$
$$\left(\left(-3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,1,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,1,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\right.$$
$$\left.\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,2,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\left(-\left(\left(2^{-m}\,(-3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,1,\,\frac{3}{2}-m,\right.\right.\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}$$
$$\left.\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-2\,m}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/$$
$$\left((-1+2\,m)\left((-3+2\,m)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,1,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,1,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\right.\right.\right.\right.$$
$$\left.\left.\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,2,\,\frac{5}{2}-m,$$
$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\right)+$$
$$\left(2^{1-m}\,(-3+2\,m)\,(1+2\,m)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,1,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}$$
$$\left.\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-2\,m}\left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{2\,m}\right)\Big/$$

$$\Big(\big(-1+2m\big)\ \Big(\big(-3+2m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 1,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\ \Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 1,\ \frac{5}{2}-m,$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 2,\ \frac{5}{2}-$$

$$m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\Big(2^{2-m}\,m\ \big(-3+2m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 1,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\ \Big(\text{Cos}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{1+2m}\ \text{Cos}\Big[\frac{1}{2}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]$$

$$\text{Sin}\Big[\frac{1}{2}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^{-1-2m}\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\ \Big(1-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{2m}\Big)\Big/$$

$$\Big(\big(-1+2m\big)\ \Big(\big(-3+2m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 1,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\ \Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 1,\ \frac{5}{2}-m,$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 2,\ \frac{5}{2}-$$

$$m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)-$$

$$\Big(2^{2-m}\ \big(-3+2m\big)\ \Big(\text{Cos}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{1+2m}\ \text{Sin}\Big[\frac{1}{2}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^{-2m}\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]$$

$$\Big(-\frac{1}{\frac{3}{2}-m}\Big(\frac{1}{2}-m\Big)\ m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 1,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-$$

$$\frac{1}{2\ \big(\frac{3}{2}-m\big)}\Big(\frac{1}{2}-m\Big)\ \text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 2,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Big)$$

$$\Big(1-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^{2m}\Big)\Big/\ \Big(\big(-1+2m\big)\ \Big(\big(-3+2m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,$$

$$-2m,\ 1,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$2\ \Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 1,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 2,\ \frac{5}{2}-m,$$

$$\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\ \Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\left(2^{2-m} m \left(-3+2 m\right) \text{AppellF1}\left[\frac{1}{2}-m, -2 m, 1, \frac{3}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2 m} \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2 m} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{-1+2 m}\right) \Big/$$

$$\left(\left(-1+2 m\right) \left(\left(-3+2 m\right) \text{AppellF1}\left[\frac{1}{2}-m, -2 m, 1, \frac{3}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + 2 \left(2 m \text{AppellF1}\left[\frac{3}{2}-m, 1-2 m, 1, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2}-m, -2 m, 2, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right) +\right.$$

$$\left(2^{2-m} \left(-3+2 m\right) \text{AppellF1}\left[\frac{1}{2}-m, -2 m, 1, \frac{3}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \left(\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{1+2 m} \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2 m} \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] \left(1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^{2 m}\right.$$

$$\left(\left(2 m \text{AppellF1}\left[\frac{3}{2}-m, 1-2 m, 1, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2}-m, -2 m, 2, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] +\right.$$

$$\left(-3+2 m\right) \left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m \text{AppellF1}\left[\frac{3}{2}-m, 1-2 m, 1, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{1}{2\left(\frac{3}{2}-m\right)}\left(\frac{1}{2}-m\right) \text{AppellF1}\left[\frac{3}{2}-m, -2 m, 2, \frac{5}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right) +$$

$$2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \left(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right) m \text{AppellF1}\left[\frac{5}{2}-m, 1-2 m, 2, \frac{7}{2}-m, \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] - \frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)\right.$$

$$\text{AppellF1}\left[\frac{5}{2}-m,-2m,3,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+2m\left(-\frac{1}{2\left(\frac{5}{2}-m\right)}\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\right.\right.$$
$$\frac{5}{2}-m,1-2m,2,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\frac{1}{2\left(\frac{5}{2}-m\right)}$$
$$(1-2m)\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,2-2m,1,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\right)\right)\Big/$$
$$\left((-1+2m)\left((-3+2m)\text{AppellF1}\left[\frac{1}{2}-m,-2m,1,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+2\left(2m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2m,1,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\right.\right.\right.\right.$$
$$\left.\left.\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2}-m,-2m,2,\frac{5}{2}-m,\right.$$
$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\right)\right)$$

Problem 423: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f x])^m\,(c-c\,\text{Sin}[e+f x])^{1-m}\,dx$$

Optimal (type 5, 114 leaves, 4 steps):

$$\frac{1}{f\,(1+2m)}$$
$$2^{\frac{3}{2}-m}c^2\,\text{Cos}[e+f x]\,\text{Hypergeometric2F1}\left[\frac{1}{2}(-1+2m),\frac{1}{2}(1+2m),\frac{1}{2}(3+2m),\frac{1}{2}(1+\text{Sin}[e+f x])\right]$$
$$(1-\text{Sin}[e+f x])^{\frac{1}{2}+m}\,(a+a\,\text{Sin}[e+f x])^m\,(c-c\,\text{Sin}[e+f x])^{-1-m}$$

Result (type 6, 7365 leaves):

$$-\left(\left(2^{5-m}\,(-3+2m)\,\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^5\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2m}\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right.\right.$$
$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2m}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^{-2(1-m)}(a+a\,\text{Sin}[e+f x])^m$$
$$(c-c\,\text{Sin}[e+f x])^{1-m}\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right)\right]\right)^{2-2m}$$

$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,2,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/\left(\left(-3+2\,m\right)\right.$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,2,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,2,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,3,\,\frac{5}{2}-m,\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/$$

$$\left(\left(-3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,4,\,\frac{5}{2}-m,\right.$$

$$\left.\left.\left.\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\right)\Big/$$

$$\left(f\left(-1+2\,m\right)\left(-\frac{1}{-1+2\,m}2^{5-m}\,m\left(-3+2\,m\right)\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^5\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{1+2\,m}\right.\right.$$

$$\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{-1-2\,m}$$

$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,2,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.\right.$$

$$\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big/\left(\left(-3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,2,\,\frac{3}{2}-m,\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\right.\right.$$

$$\left.1-2\,m,\,2,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/$$

$$\left(\left(-3+2\,m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,3,\right.\right.$$

$$\frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$3\,\mathrm{AppellF1}\left[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)-$$

$$\frac{1}{-1+2m}\,2^{5-m}\,m\,(-3+2m)\ \mathrm{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^5\ \mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-1+2m}$$

$$\mathrm{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\ \mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{1-2m}$$

$$\Big(-\Big(\Big(\mathrm{AppellF1}\left[\frac{1}{2}-m,\ -2m,\ 2,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big/\Big((-3+2m)\ \mathrm{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 2,\ \frac{3}{2}-m,$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+4\ \Big(m\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,$$

$$1-2m,\ 2,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 3,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$

$$\mathrm{AppellF1}\left[\frac{1}{2}-m,\ -2m,\ 3,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big/$$

$$\Big((-3+2m)\ \mathrm{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 3,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+2\ \Big(2m\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 3,$$

$$\frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$3\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big)+$$

$$\frac{1}{-1+2m}\,2^{3-m}\,(-3+2m)\ \mathrm{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^6\ \mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2m}$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2m}$$

$$\Big(-\Big(\Big(\mathrm{AppellF1}\left[\frac{1}{2}-m,\ -2m,\ 2,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big)\Big/\Big((-3+2m)\ \mathrm{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 2,\ \frac{3}{2}-m,$$

$$\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+4\ \Big(m\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,$$

$$1-2m,\ 2,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$\text{AppellF1}\left[\frac{3}{2}-m,\,-2m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)+$$
$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big/$$
$$\left(\left(-3+2m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2m,\,3,\right.\right.$$
$$\left.\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$
$$3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)-$$
$$\frac{1}{-1+2m}\,5\times 2^{3-m}\left(-3+2m\right)\text{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2m}$$
$$\text{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$
$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2m}$$
$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,2,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.\right.\right.$$
$$\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\Big/\left(\left(-3+2m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,2,\,\frac{3}{2}-m,\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\right.\right.$$
$$\left.1-2m,\,2,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$
$$\text{AppellF1}\left[\frac{3}{2}-m,\,-2m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)+$$
$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\Big/$$
$$\left(\left(-3+2m\right)\text{AppellF1}\left[\frac{1}{2}-m,\,-2m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2m,\,3,\right.\right.$$
$$\left.\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$
$$3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)+$$

$$\frac{1}{-1+2m} 2^{5-m} (-3+2m) \operatorname{Cos}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^5 \operatorname{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2m}$$
$$\operatorname{Sin}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]$$
$$\operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{-2m}$$
$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}-m, -2m, 2, \frac{3}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.\right.\right.$$
$$\left.\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right) \Big/$$
$$\left(2\left((-3+2m)\,\text{AppellF1}\left[\frac{1}{2}-m, -2m, 2, \frac{3}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + 4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m, 1-2m, 2, \frac{5}{2}-m,\right.\right.$$
$$\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + \text{AppellF1}\left[\frac{3}{2}-m,\right.$$
$$\left.\left.-2m, 3, \frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$
$$\left.\left.\left.\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right)\right) - \left(\operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right.$$
$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\left[\frac{3}{2}-m, 1-2m, 2, \frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right] -$$
$$\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) \text{AppellF1}\left[\frac{3}{2}-m, -2m, 3, \frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] \operatorname{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right) \Big/$$
$$\left(\left(-3+2m\right) \text{AppellF1}\left[\frac{1}{2}-m, -2m, 2, \frac{3}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$
$$\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] + 4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m, 1-2m, 2,\right.\right.$$
$$\left.\frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2, -\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right] +$$
$$\text{AppellF1}\left[\frac{3}{2}-m, -2m, 3, \frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$
$$\left.\left.\left.-\operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right) \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right) +$$
$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\left[\frac{3}{2}-m, 1-2m, 3, \frac{5}{2}-m, \operatorname{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}3\left(\frac{1}{2}-m\right)\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)\Bigg/$$

$$\Bigg(\left(-3+2m\right)\text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 3,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+2\Bigg(2m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 3,$$

$$\frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+$$

$$3\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg)+$$

$$\Bigg(\text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 2,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg(2\Bigg(m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 2,\ \frac{5}{2}-m,$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]+\text{AppellF1}\Big[\frac{3}{2}-m,$$

$$-2m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\Bigg)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\left(-3+2m\right)$$

$$\Bigg(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right)m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 2,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right)\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\Bigg)+$$

$$4\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Bigg(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)m\,\text{AppellF1}\Big[\frac{5}{2}-m,\ 1-2m,$$

$$3,\ \frac{7}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-\frac{1}{2\left(\frac{5}{2}-m\right)}$$

$$3\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,-2m,4,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+$$

$$m\left(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,1-2m,3,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\frac{1}{2\left(\frac{5}{2}-m\right)}(1-2m)\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,\right.$$

$$\left.2-2m,2,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]$$

$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-3+2m\right)\text{AppellF1}\left[\frac{1}{2}-m,-2m,2,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2m,2,\right.\right.$$

$$\left.\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$\text{AppellF1}\left[\frac{3}{2}-m,-2m,3,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2-$$

$$\left(\text{AppellF1}\left[\frac{1}{2}-m,-2m,3,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\left(\left(2m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2m,3,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+3\,\text{AppellF1}\left[\frac{3}{2}-m,-2m,4,\right.$$

$$\left.\left.\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\left(-3+2m\right)$$

$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right)m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2m,3,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}3\left(\frac{1}{2}-m\right)\text{AppellF1}\left[\frac{3}{2}-m,-2m,4,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\left(2m\left(-\frac{1}{2\left(\frac{5}{2}-m\right)}3\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,\right.\right.\right.$$

$$1-2m,4,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]+\frac{1}{2\left(\frac{5}{2}-m\right)}(1-2m)$$

$$\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,2-2m,3,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\Big[$$

$$\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\Big]\right)+3\left(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)m\,\text{AppellF1}\left[\frac{5}{2}-m,1-2m,4,\right.\right.$$

$$\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\Big]\,\text{Sec}\Big[\frac{1}{4}\Big(-e+$$

$$\left.\frac{\pi}{2}-fx\Big)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]-\frac{1}{\frac{5}{2}-m}2\left(\frac{3}{2}-m\right)\text{AppellF1}\Big[\frac{5}{2}-$$

$$m,-2m,5,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\Big]$$

$$\left.\left.\left.\left.\left.\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(-3+2m\right)\text{AppellF1}\left[\frac{1}{2}-m,-2m,3,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+2\left(2m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2m,3,\right.\right.$$

$$\left.\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]+$$

$$3\,\text{AppellF1}\left[\frac{3}{2}-m,-2m,4,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2,\right.$$

$$\left.\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^2\right)\right)\right)\right)$$

Problem 424: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a + a\,\text{Sin}[e + f\,x])^m\,(c - c\,\text{Sin}[e + f\,x])^{2-m}\,dx$$

Optimal (type 5, 114 leaves, 4 steps):

$$\frac{1}{f\,(1+2\,m)}$$

$$2^{\frac{5}{2}-m}\,c^3\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2}\,(-3+2\,m),\,\frac{1}{2}\,(1+2\,m),\,\frac{1}{2}\,(3+2\,m),\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x])\right]$$

$$(1-\text{Sin}[e+f\,x])^{\frac{1}{2}+m}\,(a+a\,\text{Sin}[e+f\,x])^m\,(c-c\,\text{Sin}[e+f\,x])^{-1-m}$$

Result (type 6, 11 688 leaves):

$$-\Bigg(\Bigg(\Bigg(2^{8-3\,m}\,(-3+2\,m)\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{-2\,(2-m)}\,(a+a\,\text{Sin}[e+f\,x])^m$$

$$(c-c\,\text{Sin}[e+f\,x])^{2-m}\,\left(\text{Cos}\left[\frac{\pi}{4}+\frac{1}{2}\,\left(e-\frac{\pi}{2}+f\,x\right)\right]-\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\,\left(e-\frac{\pi}{2}+f\,x\right)\right]\right)^{4-2\,m}$$

$$\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\left(\frac{\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-2\,m}\,\left(\frac{1-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$

$$\Bigg(-\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Bigg)\Bigg/\Bigg((-3+2\,m)$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$2\,\Bigg(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,4,\,\frac{5}{2}-m,\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(2\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg)\Bigg/\Bigg((-3+2\,m)$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$4\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,5,\,\frac{5}{2}-m,\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)-$$

$$\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Big/$$

$$\Bigg(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+5\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,6,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)\Bigg/$$

$$\Bigg(f\left(-1+2\,m\right)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^5\Bigg(-\frac{1}{\left(-1+2\,m\right)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^6}$$

$$5\times 2^{7-3\,m}\left(-3+2\,m\right)\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(\frac{\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-2\,m}\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$

$$\Bigg(-\Bigg(\Bigg(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Bigg)\Bigg/\Bigg(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(2\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)-\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big/\Big(\big((-3+2\,m)\ \text{AppellF1}\Big[$$

$$\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+2$$

$$\Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 5,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+5\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 6,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+$$

$$\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\big)\Big)+$$

$$\frac{1}{(-1+2\,m)\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^5}\,2^{6-3\,m}\,(-3+2\,m)\ \text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(\frac{\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-2\,m}$$

$$\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$

$$\Big(-\Big(\Big(\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\Big)\Big/\Big(\big((-3+2\,m)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+2\,\Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,$$

$$1-2\,m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$3\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\big)\Big)+$$

$$\Big(2\,\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 4,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Big)\Big/\Big(\big((-3+2\,m)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,$$

$$4,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$4\,\Big(m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+2\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 5,\ \frac{5}{2}-m,\ \text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\big)-$$

$$\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big/$$

$$\left(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,5,\right.\right.$$
$$\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$
$$5\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,6,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)-$$
$$\frac{1}{\left(-1+2\,m\right)\,\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^5}\,2^{9-3\,m}\,m\,\left(-3+2\,m\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]$$
$$\left(\frac{\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{-1-2\,m}$$
$$\left(\frac{1-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}\right)^{2\,m}$$
$$\left(-\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{2\,\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2}+\frac{\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{4\,\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)}\right)$$
$$\left(-\left(\left(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.\right.$$
$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2\right)\Big/\left(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,3,\,\frac{3}{2}-m,\right.\right.$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\right.\right.$$
$$1-2\,m,\,3,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$
$$3\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+$$
$$\left(2\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$
$$\left.\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)\Big/\left(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\right.\right.$$
$$4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$
$$4\,\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,4,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\right.\right.$$

$$\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\ -$$

$$\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big/$$

$$\Big(\big(-3+2\,m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\ \Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 5,$$

$$\frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$5\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 6,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\ +$$

$$\frac{1}{\big(-1+2\,m\big)\ \Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^5}\ 2^{9-3\,m}\,m\ \big(-3+2\,m\big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]$$

$$\left(\frac{\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]}{1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}\right)^{-2\,m}$$

$$\left(\frac{1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}{1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}\right)^{-1+2\,m}$$

$$\Bigg(-\Big(\Big(\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\ \Big(1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\Big/$$

$$\Big(2\ \Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^2\Big)\Big)-\frac{\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]}{2\ \Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)}\Bigg)$$

$$\Big(-\Big(\Big(\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^2\Big)\Big/\ \Big(\big(-3+2\,m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,$$

$$\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\ \Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,$$

$$1-2\,m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$3\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\ +$$

$$\Big(2\,\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 4,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\Big/\ \Big(\big(-3+2\,m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,$$

$$4,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$4\,\Big(m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 5,\ \frac{5}{2}-m,\ \text{Tan}\Big[$$

$$\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)-$$

$$\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big/$$

$$\Big(\big(-3+2\,m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 5,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\,\Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 5,$$

$$\frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$5\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 6,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)+$$

$$\frac{1}{\big(-1+2\,m\big)\ \Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^5}\ 2^{8-3\,m}\ \big(-3+2\,m\big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]$$

$$\left(\frac{\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]}{1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}\right)^{-2\,m}$$

$$\left(\frac{1-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}{1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}\right)^{2\,m}$$

$$\Big(-\Big(\Big(\text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\ \Big(1+\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)\Big/$$

$$\Big(\big(-3+2\,m\big)\ \text{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\,\Big(2\,m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 3,$$

$$\frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$3\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\ \text{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)\Big)-$$

$$\Bigg(\Bigg(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}3\left(\frac{1}{2}-m\right)\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]\Bigg)$$

$$\left(1+\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\right)^2\Bigg)\Big/\Bigg(\left(-3+2m\right)\text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,$$

$$3,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]+$$

$$2\Bigg(2m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 3,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]+3\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\Bigg)\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Bigg)+$$

$$\Bigg(\text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 4,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]\Bigg)\Big/$$

$$\Bigg(\left(-3+2m\right)\text{AppellF1}\Big[\frac{1}{2}-m,\ -2m,\ 4,\ \frac{3}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]+4\Bigg(m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 4,$$

$$\frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,\ -\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]+$$

$$2\,\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 5,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\Bigg)\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Bigg)+$$

$$\Bigg(2\Bigg(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\Big[\frac{3}{2}-m,\ 1-2m,\ 4,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]-$$

$$\frac{1}{\frac{3}{2}-m}2\left(\frac{1}{2}-m\right)\text{AppellF1}\Big[\frac{3}{2}-m,\ -2m,\ 5,\ \frac{5}{2}-m,\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\Big]\ \text{Sec}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]^2\ \text{Tan}\Big[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\Big]\Bigg)$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)\right) \Big/ \left(\left(-3+2 m\right) \text{AppellF1}\left[\frac{1}{2}-m,-2 m,\right.\right.$$

$$4,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$4\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2 m,4,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2}-m,-2 m,5,\frac{5}{2}-m,\text{Tan}\left[\right.\right.$$

$$\left.\left.\left.\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)-$$

$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2 m,5,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}5\left(\frac{1}{2}-m\right)\text{AppellF1}\left[\frac{3}{2}-m,-2 m,6,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]\right) \Big/$$

$$\left(\left(-3+2 m\right)\text{AppellF1}\left[\frac{1}{2}-m,-2 m,5,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+2\left(2 m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2 m,5,\right.\right.$$

$$\left.\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+$$

$$5\,\text{AppellF1}\left[\frac{3}{2}-m,-2 m,6,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)+$$

$$\left(\text{AppellF1}\left[\frac{1}{2}-m,-2 m,3,\frac{3}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right.$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right)^2\left(\left(2 m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2 m,3,\frac{5}{2}-m,\right.\right.\right.$$

$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]+3\,\text{AppellF1}\left[\frac{3}{2}-m,\right.$$

$$\left.\left.-2 m,4,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]+\left(-3+2 m\right)$$

$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right) m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2 m,3,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f x\right)\right]^2,\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}3\left(\frac{1}{2}-m\right)\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 4,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)+$$

$$2\,\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg(2\,m\Bigg(-\frac{1}{2\left(\frac{5}{2}-m\right)}3\left(\frac{3}{2}-m\right)\mathrm{AppellF1}\Big[\frac{5}{2}-m,$$

$$1-2\,m,\ 4,\ \frac{7}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\frac{1}{2\left(\frac{5}{2}-m\right)}(1-2\,m)$$

$$\left(\frac{3}{2}-m\right)\mathrm{AppellF1}\Big[\frac{5}{2}-m,\ 2-2\,m,\ 3,\ \frac{7}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\Big[$$

$$\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]\Bigg)+3\Bigg(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)m\,\mathrm{AppellF1}\Big[\frac{5}{2}-m,\ 1-2\,m,\ 4,$$

$$\frac{7}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\ \mathrm{Sec}\Big[\frac{1}{4}\Big(-e+$$

$$\frac{\pi}{2}-f\,x\Big)\Big]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{\frac{5}{2}-m}2\left(\frac{3}{2}-m\right)\mathrm{AppellF1}\Big[\frac{5}{2}-$$

$$m,\ -2\,m,\ 5,\ \frac{7}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\mathrm{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Big((-3+2\,m)\,\mathrm{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 3,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+2\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ 1-2\,m,\ 3,$$

$$\frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+$$

$$3\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\ -2\,m,\ 4,\ \frac{5}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$

$$-\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Big)\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big)^2-$$

$$\Bigg(2\,\mathrm{AppellF1}\Big[\frac{1}{2}-m,\ -2\,m,\ 4,\ \frac{3}{2}-m,\ \mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\ -\mathrm{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg(2\,\Bigg(m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2\,m,4,\frac{5}{2}-m,\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+2\,\text{AppellF1}\left[\frac{3}{2}-m,\right.$$
$$\left.-2\,m,5,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+(-3+2\,m)$$
$$\Bigg(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right)m\,\text{AppellF1}\left[\frac{3}{2}-m,1-2\,m,4,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$
$$\frac{1}{\frac{3}{2}-m}2\left(\frac{1}{2}-m\right)\text{AppellF1}\left[\frac{3}{2}-m,-2\,m,5,\frac{5}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)+$$
$$4\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg(m\,\Bigg(-\frac{1}{\frac{5}{2}-m}2\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,1-2\,m,\right.$$
$$\left.5,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$
$$\frac{1}{2\left(\frac{5}{2}-m\right)}(1-2\,m)\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,2-2\,m,4,\frac{7}{2}-m,\right.$$
$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)+2$$
$$\Bigg(-\frac{1}{\frac{5}{2}-m}\left(\frac{3}{2}-m\right)m\,\text{AppellF1}\left[\frac{5}{2}-m,1-2\,m,5,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$
$$\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{2\left(\frac{5}{2}-m\right)}5\left(\frac{3}{2}-m\right)\text{AppellF1}\left[\frac{5}{2}-m,\right.$$
$$\left.-2\,m,6,\frac{7}{2}-m,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-3+2\,m\right)\,\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,4,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+4\,\left(m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,4,\right.\right.$$

$$\left.\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+$$

$$2\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2+$$

$$\left(\text{AppellF1}\left[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\left(\left(2\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+5\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,6,\right.$$

$$\left.\left.\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\left(-3+2\,m\right)$$

$$\left(-\frac{1}{\frac{3}{2}-m}\left(\frac{1}{2}-m\right)\,m\,\text{AppellF1}\left[\frac{3}{2}-m,\,1-2\,m,\,5,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{2\left(\frac{3}{2}-m\right)}5\,\left(\frac{1}{2}-m\right)\,\text{AppellF1}\left[\frac{3}{2}-m,\,-2\,m,\,6,\,\frac{5}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(2\,m\,\left(-\frac{1}{2\left(\frac{5}{2}-m\right)}5\,\left(\frac{3}{2}-m\right)\,\text{AppellF1}\left[\frac{5}{2}-m,\right.\right.\right.$$

$$\left.1-2\,m,\,6,\,\frac{7}{2}-m,\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+$$

$$\frac{1}{2\left(\frac{5}{2}-m\right)}\left(1-2\,m\right)\,\left(\frac{3}{2}-m\right)\,\text{AppellF1}\left[\frac{5}{2}-m,\,2-2\,m,\,5,\,\frac{7}{2}-m,\right.$$

$$\left.\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{4}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\mathrm{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Bigg)+5$$

$$\Bigg(-\frac{1}{\frac{5}{2}-m}\Big(\frac{3}{2}-m\Big)\,m\,\mathrm{AppellF1}\Big[\frac{5}{2}-m,\,1-2\,m,\,6,\,\frac{7}{2}-m,\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\,\mathrm{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2$$

$$\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]-\frac{1}{\frac{5}{2}-m}3\Big(\frac{3}{2}-m\Big)\,\mathrm{AppellF1}\Big[\frac{5}{2}-m,\,-2\,m,$$

$$7,\,\frac{7}{2}-m,\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]$$

$$\mathrm{Sec}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\Big((-3+2\,m)\,\mathrm{AppellF1}\Big[\frac{1}{2}-m,\,-2\,m,\,5,\,\frac{3}{2}-m,\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+2\Big(2\,m\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\,1-2\,m,\,5,$$

$$\frac{5}{2}-m,\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]+$$

$$5\,\mathrm{AppellF1}\Big[\frac{3}{2}-m,\,-2\,m,\,6,\,\frac{5}{2}-m,\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2,$$

$$-\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big]\Big)\,\mathrm{Tan}\Big[\frac{1}{4}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\Big)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 430: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{a+a\,\mathrm{Sin}[e+f\,x]}{c+d\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 63 leaves, 4 steps):

$$\frac{a\,x}{d}-\frac{2\,a\,(c-d)\,\mathrm{ArcTan}\Big[\frac{d+c\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\sqrt{c^2-d^2}}\Big]}{d\,\sqrt{c^2-d^2}\,f}$$

Result (type 3, 182 leaves):

$$\left(a\left(-2\,(c-d)\,\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{f x}{2}\right]\,(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\,\left(d\,\text{Cos}\left[e+\frac{f x}{2}\right]+c\,\text{Sin}\left[\frac{f x}{2}\right]\right)}{\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}}\right]\right.\right.$$
$$\left.\left.(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])+\sqrt{c^2-d^2}\,f\,x\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\right)\,(1+\text{Sin}[e+f x])\right)\Big/$$
$$\left(d\,\sqrt{c^2-d^2}\,f\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f x)\right]\right)^2\right)$$

Problem 431: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a+a\,\text{Sin}[e+f x]}{(c+d\,\text{Sin}[e+f x])^2}\,dx$$

Optimal (type 3, 83 leaves, 5 steps):

$$\frac{2\,a\,\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}\,(e+f x)\right]}{\sqrt{c^2-d^2}}\right]}{(c+d)\,\sqrt{c^2-d^2}\,f}-\frac{a\,\text{Cos}[e+f x]}{(c+d)\,f\,(c+d\,\text{Sin}[e+f x])}$$

Result (type 3, 220 leaves):

$$\left(a\,(1+\text{Sin}[e+f x])\,\left(2\,\sqrt{c^2-d^2}\,\text{Csc}[e]\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\,(c\,\text{Cos}[e]+d\,\text{Sin}[f x])+\right.\right.$$
$$4\,d\,\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{f x}{2}\right]\,(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\,\left(d\,\text{Cos}\left[e+\frac{f x}{2}\right]+c\,\text{Sin}\left[\frac{f x}{2}\right]\right)}{\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}}\right]$$
$$\left.\left.(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\,(c+d\,\text{Sin}[e+f x])\right)\right)\Big/$$
$$\left(2\,d\,(c+d)\,\sqrt{c^2-d^2}\,f\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f x)\right]\right)^2\right.$$
$$\left.(c+d\,\text{Sin}[e+f x])\right)$$

Problem 432: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{a+a\,\text{Sin}[e+f x]}{(c+d\,\text{Sin}[e+f x])^3}\,dx$$

Optimal (type 3, 134 leaves, 6 steps):

$$\frac{a\,(2c-d)\,\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c^2-d^2}}\right]}{(c+d)\,(c^2-d^2)^{3/2}\,f}-\frac{a\,\text{Cos}[e+f x]}{2\,(c+d)\,f\,(c+d\,\text{Sin}[e+f x])^2}-\frac{a\,(c-2d)\,\text{Cos}[e+f x]}{2\,(c-d)\,(c+d)^2\,f\,(c+d\,\text{Sin}[e+f x])}$$

Result (type 3, 242 leaves) :

$$\left(a\,(1+\text{Sin}[e+f x])\left(\left(4\,(2c-d)\,\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{f x}{2}\right]\,(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\,\left(d\,\text{Cos}\left[e+\frac{f x}{2}\right]+c\,\text{Sin}\left[\frac{f x}{2}\right]\right)}{\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}}\right](\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\right)\Big/\left((c-d)\,\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\right)+\frac{2\,(c+d)\,\text{Csc}[e]\,(c\,\text{Cos}[e]+d\,\text{Sin}[f x])}{d\,(c+d\,\text{Sin}[e+f x])^2}+\frac{(-4c+2d)\,\text{Cot}[e]+2\,(c-2d)\,\text{Csc}[e]\,\text{Sin}[f x]}{(c-d)\,(c+d\,\text{Sin}[e+f x])}\right)\right)\Big/\left(4\,(c+d)^2\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)$$

Problem 433: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{a+a\,\text{Sin}[e+f x]}{(c+d\,\text{Sin}[e+f x])^4}\,dx$$

Optimal (type 3, 192 leaves, 7 steps) :

$$\frac{a\,(2c^2-2c d+d^2)\,\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c^2-d^2}}\right]}{(c+d)\,(c^2-d^2)^{5/2}\,f}-\frac{a\,\text{Cos}[e+f x]}{3\,(c+d)\,f\,(c+d\,\text{Sin}[e+f x])^3}-\frac{a\,(2c-3d)\,\text{Cos}[e+f x]}{6\,(c-d)\,(c+d)^2\,f\,(c+d\,\text{Sin}[e+f x])^2}-\frac{a\,(c-4d)\,(2c-d)\,\text{Cos}[e+f x]}{6\,(c-d)^2\,(c+d)^3\,f\,(c+d\,\text{Sin}[e+f x])}$$

Result (type 3, 428 leaves) :

$$\frac{1}{24\,(c-d)^2\,(c+d)^3\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2}\,a\,(1+\text{Sin}[e+f\,x])$$
$$\left(\left(24\,(2\,c^2-2\,c\,d+d^2)\,\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{f\,x}{2}\right]\,(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\,\left(d\,\text{Cos}\left[e+\frac{f\,x}{2}\right]+c\,\text{Sin}\left[\frac{f\,x}{2}\right]\right)}{\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}}\right]\right.\right.$$
$$\left.(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])\right)\Big/\left(\sqrt{c^2-d^2}\,\sqrt{(\text{Cos}[e]-\mathrm{i}\,\text{Sin}[e])^2}\right)+$$
$$\frac{1}{d\,(c+d\,\text{Sin}[e+f\,x])^3}\,(2\,c\,(4\,c^4-18\,c^3\,d+14\,c^2\,d^2-27\,c\,d^3+12\,d^4)\,\text{Cot}[e]-d\,\text{Csc}[e]$$
$$(3\,d\,(4\,c^3-16\,c^2\,d+6\,c\,d^2+d^3)\,\text{Cos}[e+2\,f\,x]-3\,d^2\,(2\,c^2-2\,c\,d+d^2)\,\text{Cos}[3\,e+2\,f\,x]-$$
$$24\,c^4\,\text{Sin}[f\,x]+78\,c^3\,d\,\text{Sin}[f\,x]-24\,c^2\,d^2\,\text{Sin}[f\,x]+12\,c\,d^3\,\text{Sin}[f\,x]-12\,d^4\,\text{Sin}[f\,x]+$$
$$30\,c^3\,d\,\text{Sin}[2\,e+f\,x]-30\,c^2\,d^2\,\text{Sin}[2\,e+f\,x]+15\,c\,d^3\,\text{Sin}[2\,e+f\,x]+$$
$$\left.2\,c^2\,d^2\,\text{Sin}[2\,e+3\,f\,x]-9\,c\,d^3\,\text{Sin}[2\,e+3\,f\,x]+4\,d^4\,\text{Sin}[2\,e+3\,f\,x]))\right)$$

Problem 456: Result more than twice size of optimal antiderivative.

$$\int\frac{c+d\,\text{Sin}[e+f\,x]}{a+a\,\text{Sin}[e+f\,x]}\,\mathrm{d}x$$

Optimal (type 3, 35 leaves, 2 steps):

$$\frac{d\,x}{a}-\frac{(c-d)\,\text{Cos}[e+f\,x]}{f\,(a+a\,\text{Sin}[e+f\,x])}$$

Result (type 3, 79 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.$$
$$\left.\left(d\,(e+f\,x)\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+(2\,c+d\,(-2+e+f\,x))\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\Big/\,(a$$
$$f\,(1+\text{Sin}[e+f\,x]))$$

Problem 457: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{a+a\,\text{Sin}[e+f\,x]}\,\mathrm{d}x$$

Optimal (type 3, 23 leaves, 1 step):

$$-\frac{\text{Cos}[e+f\,x]}{f\,(a+a\,\text{Sin}[e+f\,x])}$$

Result (type 3, 48 leaves):

$$\frac{2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{f\,(a+a\,\text{Sin}[e+f\,x])}$$

Problem 461: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^5}{(a+a\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 260 leaves, 4 steps):

$$\frac{5\,(2\,c-d)\,d^2\,\left(2\,c^2-3\,c\,d+2\,d^2\right)\,x}{2\,a^2}+\frac{2\,d\,\left(c^4+10\,c^3\,d-44\,c^2\,d^2+40\,c\,d^3-12\,d^4\right)\,\text{Cos}[e+f\,x]}{3\,a^2\,f}+$$
$$\frac{d^2\,\left(2\,c^3+20\,c^2\,d-57\,c\,d^2+30\,d^3\right)\,\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]}{6\,a^2\,f}+$$
$$\frac{d\,\left(c^2+10\,c\,d-12\,d^2\right)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^2}{3\,a^2\,f}-$$
$$\frac{(c-d)\,(c+10\,d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^3}{3\,a^2\,f\,(1+\text{Sin}[e+f\,x])}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^4}{3\,f\,(a+a\,\text{Sin}[e+f\,x])^2}$$

Result (type 3, 837 leaves):

$$\frac{1}{48\,a^2\,f\,\left(1+\text{Sin}[e+f\,x]\right)^2}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$
$$\Bigg(3\,d\,\Big(80\,c^4+80\,c^3\,d\,(-4+3\,e+3\,f\,x)-80\,c^2\,d^2\,(-5+6\,e+6\,f\,x)+$$
$$35\,c\,d^3\,(-7+12\,e+12\,f\,x)-4\,d^4\,(-13+30\,e+30\,f\,x)\Big)\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-$$
$$\Big(16\,c^5+160\,c^4\,d+80\,c^3\,d^2\,(-10+3\,e+3\,f\,x)-40\,c^2\,d^3\,(-41+12\,e+12\,f\,x)-$$
$$6\,d^5\,(-57+20\,e+20\,f\,x)+5\,c\,d^4\,(-239+84\,e+84\,f\,x)\Big)\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$120\,c^2\,d^3\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]-75\,c\,d^4\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]+30\,d^5\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]+$$
$$15\,c\,d^4\,\text{Cos}\left[\frac{7}{2}\,(e+f\,x)\right]-3\,d^5\,\text{Cos}\left[\frac{7}{2}\,(e+f\,x)\right]-d^5\,\text{Cos}\left[\frac{9}{2}\,(e+f\,x)\right]+$$
$$48\,c^5\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+240\,c^4\,d\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-1440\,c^3\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$2640\,c^2\,d^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-1905\,c\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+516\,d^5\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$720\,c^3\,d^2\,e\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-1440\,c^2\,d^3\,e\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+1260\,c\,d^4\,e\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-$$
$$360\,d^5\,e\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+720\,c^3\,d^2\,f\,x\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-1440\,c^2\,d^3\,f\,x\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$1260\,c\,d^4\,f\,x\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-360\,d^5\,f\,x\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-360\,c^2\,d^3\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$315\,c\,d^4\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-118\,d^5\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+240\,c^3\,d^2\,e\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-$$
$$480\,c^2\,d^3\,e\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+420\,c\,d^4\,e\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-120\,d^5\,e\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$240\,c^3\,d^2\,f\,x\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-480\,c^2\,d^3\,f\,x\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+420\,c\,d^4\,f\,x\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-$$
$$120\,d^5\,f\,x\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-120\,c^2\,d^3\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]+75\,c\,d^4\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-$$
$$30\,d^5\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]+15\,c\,d^4\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]-3\,d^5\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]+d^5\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]\Bigg)$$

Problem 464: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(c+d\,\text{Sin}[e+f\,x]\right)^2}{\left(a+a\,\text{Sin}[e+f\,x]\right)^2}\,dx$$

Optimal (type 3, 85 leaves, 3 steps):

$$\frac{d^2\,x}{a^2}-\frac{(c-d)\,(c+4\,d)\,\text{Cos}[e+f\,x]}{3\,a^2\,f\,\left(1+\text{Sin}[e+f\,x]\right)}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,\left(c+d\,\text{Sin}[e+f\,x]\right)}{3\,f\,\left(a+a\,\text{Sin}[e+f\,x]\right)^2}$$

Result (type 3, 172 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right.$$
$$\left(2 (c-d)^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]-(c-d)^2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)+\right.$$
$$2\left(c^2+4 c d-5 d^2\right) \text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2+$$
$$\left.\left.3 d^2 (e+f x)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\right)\right) \Big/ \left(3 a^2 f\left(1+\text{Sin}[e+f x]\right)^2\right)$$

Problem 470: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(c+d\,\text{Sin}[e+f x])^6}{(a+a\,\text{Sin}[e+f x])^3}\,dx$$

Optimal (type 3, 354 leaves, 5 steps):

$$\frac{d^3\left(40 c^3-90 c^2 d+78 c d^2-23 d^3\right) x}{2 a^3}+\frac{1}{15 a^3 f}$$
$$2 d\left(2 c^5+18 c^4 d+107 c^3 d^2-472 c^2 d^3+456 c d^4-136 d^5\right) \text{Cos}[e+f x]+\frac{1}{30 a^3 f}$$
$$d^2\left(4 c^4+36 c^3 d+216 c^2 d^2-626 c d^3+345 d^4\right) \text{Cos}[e+f x] \,\text{Sin}[e+f x]+$$
$$\frac{d\left(2 c^3+18 c^2 d+111 c d^2-136 d^3\right) \text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^2}{15 a^3 f}-$$
$$\frac{(c-d)\left(2 c^2+18 c d+115 d^2\right) \text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^3}{15 f\left(a^3+a^3 \text{Sin}[e+f x]\right)}-$$
$$\frac{(c-d)(2 c+13 d) \text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^4}{15 a f\,(a+a\,\text{Sin}[e+f x])^2}-\frac{(c-d) \text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^5}{5 f\,(a+a\,\text{Sin}[e+f x])^3}$$

Result (type 3, 560 leaves):

$$\frac{1}{120\,a^3\,f\,(1+\mathrm{Sin}[e+f\,x])^3}\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)$$
$$\left(48\,(c-d)^6\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]-24\,(c-d)^6\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)+\right.$$
$$32\,(c-d)^5\,(c+14\,d)\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2-$$
$$16\,(c-d)^5\,(c+14\,d)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3+$$
$$16\,(c-d)^4\,(2\,c^2+26\,c\,d+197\,d^2)\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^4-$$
$$60\,d^3\,(-40\,c^3+90\,c^2\,d-78\,c\,d^2+23\,d^3)\,(e+f\,x)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5+$$
$$10\,d^6\,\mathrm{Cos}[3\,(e+f\,x)]\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5-45\,d^4\,(20\,c^2-24\,c\,d+9\,d^2)$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5(\mathrm{Cos}[e+f\,x]-i\,\mathrm{Sin}[e+f\,x])-45\,d^4$$
$$(20\,c^2-24\,c\,d+9\,d^2)\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5(\mathrm{Cos}[e+f\,x]+i\,\mathrm{Sin}[e+f\,x])-$$
$$45\,i\,(2\,c-d)\,d^5\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5(\mathrm{Cos}[2\,(e+f\,x)]-i\,\mathrm{Sin}[2\,(e+f\,x)])+$$
$$\left.45\,i\,(2\,c-d)\,d^5\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^5(\mathrm{Cos}[2\,(e+f\,x)]+i\,\mathrm{Sin}[2\,(e+f\,x)])\right)$$

Problem 471: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\mathrm{Sin}[e+f\,x])^5}{(a+a\,\mathrm{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 278 leaves, 4 steps):

$$\frac{d^3\,(20\,c^2-30\,c\,d+13\,d^2)\,x}{2\,a^3}+\frac{2\,d\,(2\,c^4+15\,c^3\,d+72\,c^2\,d^2-180\,c\,d^3+76\,d^4)\,\mathrm{Cos}[e+f\,x]}{15\,a^3\,f}+$$
$$\frac{d^2\,(4\,c^3+30\,c^2\,d+146\,c\,d^2-195\,d^3)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e+f\,x]}{30\,a^3\,f}-$$
$$\frac{(c-d)\,(2\,c^2+15\,c\,d+76\,d^2)\,\mathrm{Cos}[e+f\,x]\,(c+d\,\mathrm{Sin}[e+f\,x])^2}{15\,f\,(a^3+a^3\,\mathrm{Sin}[e+f\,x])}-$$
$$\frac{(c-d)\,(2\,c+11\,d)\,\mathrm{Cos}[e+f\,x]\,(c+d\,\mathrm{Sin}[e+f\,x])^3}{15\,a\,f\,(a+a\,\mathrm{Sin}[e+f\,x])^2}-\frac{(c-d)\,\mathrm{Cos}[e+f\,x]\,(c+d\,\mathrm{Sin}[e+f\,x])^4}{5\,f\,(a+a\,\mathrm{Sin}[e+f\,x])^3}$$

Result (type 3, 992 leaves):

$$\frac{1}{480\,f\,(a+a\,\mathrm{Sin}[e+f\,x])^3}\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(1200\,c^4\,d\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+4800\,c^3\,d^2\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\right.$$
$$21600\,c^2\,d^3\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+22500\,c\,d^4\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-7560\,d^5\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+$$
$$12000\,c^2\,d^3\,(e+f\,x)\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-18000\,c\,d^4\,(e+f\,x)\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+$$
$$7800\,d^5\,(e+f\,x)\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]-160\,c^5\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-1200\,c^4\,d\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-$$
$$3200\,c^3\,d^2\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]+18400\,c^2\,d^3\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-24300\,c\,d^4\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$9230\,d^5\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-6000\,c^2\,d^3\,(e+f\,x)\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$9000\,c\,d^4\,(e+f\,x)\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]-3900\,d^5\,(e+f\,x)\,\mathrm{Cos}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$1500\,c\,d^4\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]-750\,d^5\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]-1200\,c^2\,d^3\,(e+f\,x)\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]+$$
$$1800\,c\,d^4\,(e+f\,x)\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]-780\,d^5\,(e+f\,x)\,\mathrm{Cos}\left[\frac{5}{2}(e+f\,x)\right]+$$
$$300\,c\,d^4\,\mathrm{Cos}\left[\frac{7}{2}(e+f\,x)\right]-105\,d^5\,\mathrm{Cos}\left[\frac{7}{2}(e+f\,x)\right]-15\,d^5\,\mathrm{Cos}\left[\frac{9}{2}(e+f\,x)\right]+$$
$$320\,c^5\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+1200\,c^4\,d\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+6400\,c^3\,d^2\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]-$$
$$29600\,c^2\,d^3\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+35100\,c\,d^4\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]-12760\,d^5\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+$$
$$12000\,c^2\,d^3\,(e+f\,x)\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]-18000\,c\,d^4\,(e+f\,x)\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+$$
$$7800\,d^5\,(e+f\,x)\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]+2400\,c^3\,d^2\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]-7200\,c^2\,d^3\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]+$$
$$4500\,c\,d^4\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]-930\,d^5\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]+6000\,c^2\,d^3\,(e+f\,x)\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]-$$
$$9000\,c\,d^4\,(e+f\,x)\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]+3900\,d^5\,(e+f\,x)\,\mathrm{Sin}\left[\frac{3}{2}(e+f\,x)\right]-32\,c^5\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]-$$
$$240\,c^4\,d\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]-1120\,c^3\,d^2\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]+5120\,c^2\,d^3\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]-$$
$$7260\,c\,d^4\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]+2782\,d^5\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]-1200\,c^2\,d^3\,(e+f\,x)\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]+$$
$$1800\,c\,d^4\,(e+f\,x)\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]-780\,d^5\,(e+f\,x)\,\mathrm{Sin}\left[\frac{5}{2}(e+f\,x)\right]+$$
$$\left.300\,c\,d^4\,\mathrm{Sin}\left[\frac{7}{2}(e+f\,x)\right]-105\,d^5\,\mathrm{Sin}\left[\frac{7}{2}(e+f\,x)\right]+15\,d^5\,\mathrm{Sin}\left[\frac{9}{2}(e+f\,x)\right]\right)$$

Problem 472: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d \operatorname{Sin}[e+f x])^4}{(a+a \operatorname{Sin}[e+f x])^3} \, dx$$

Optimal (type 3, 195 leaves, 6 steps):

$$\frac{(4 c-3 d) d^3 x}{a^3}+\frac{d^2 \left(2 c^2+10 c d-27 d^2\right) \operatorname{Cos}[e+f x]}{15 a^3 f}-\frac{(c-d)^2 \left(2 c^2+12 c d+45 d^2\right) \operatorname{Cos}[e+f x]}{15 f \left(a^3+a^3 \operatorname{Sin}[e+f x]\right)}-\frac{(c-d) (2 c+9 d) \operatorname{Cos}[e+f x] (c+d \operatorname{Sin}[e+f x])^2}{15 a f (a+a \operatorname{Sin}[e+f x])^2}-\frac{(c-d) \operatorname{Cos}[e+f x] (c+d \operatorname{Sin}[e+f x])^3}{5 f (a+a \operatorname{Sin}[e+f x])^3}$$

Result (type 3, 683 leaves):

$$\frac{1}{120 a^3 f (1+\operatorname{Sin}[e+f x])^3}\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)$$
$$\left(15 d \left(16 c^3+48 c^2 d-15 d^3 (-5+4 e+4 f x)+16 c d^2 (-9+5 e+5 f x)\right) \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\right.$$
$$5 \left(8 c^4+48 c^3 d+96 c^2 d^2-9 d^4 (-27+10 e+10 f x)+8 c d^3 (-46+15 e+15 f x)\right)$$
$$\operatorname{Cos}\left[\frac{3}{2}(e+f x)\right]+75 d^4 \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]-120 c d^3 e \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]+$$
$$90 d^4 e \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]-120 c d^3 f x \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]+90 d^4 f x \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]+$$
$$15 d^4 \operatorname{Cos}\left[\frac{7}{2}(e+f x)\right]+80 c^4 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+240 c^3 d \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$960 c^2 d^2 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-2960 c d^3 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+1755 d^4 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$1200 c d^3 e \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-900 d^4 e \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+1200 c d^3 f x \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-$$
$$900 d^4 f x \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+360 c^2 d^2 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-720 c d^3 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]+$$
$$225 d^4 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]+600 c d^3 e \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-450 d^4 e \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]+$$
$$600 c d^3 f x \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-450 d^4 f x \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-8 c^4 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-$$
$$48 c^3 d \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-168 c^2 d^2 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]+512 c d^3 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-$$
$$363 d^4 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-120 c d^3 e \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]+90 d^4 e \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-$$
$$\left.120 c d^3 f x \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]+90 d^4 f x \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]+15 d^4 \operatorname{Sin}\left[\frac{7}{2}(e+f x)\right]\right)$$

Problem 473: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d \operatorname{Sin}[e+f x])^3}{(a+a \operatorname{Sin}[e+f x])^3} \, dx$$

Optimal (type 3, 142 leaves, 5 steps):

$$\frac{d^3 x}{a^3}-\frac{(c-d)^2 (2 c+7 d) \operatorname{Cos}[e+f x]}{15 a f (a+a \operatorname{Sin}[e+f x])^2}-\frac{(c-d) \left(2 c^2+11 c d+29 d^2\right) \operatorname{Cos}[e+f x]}{15 f \left(a^3+a^3 \operatorname{Sin}[e+f x]\right)}-\frac{(c-d) \operatorname{Cos}[e+f x] (c+d \operatorname{Sin}[e+f x])^2}{5 f (a+a \operatorname{Sin}[e+f x])^3}$$

Result (type 3, 408 leaves):

$$\frac{1}{60 a^3 f (1+\operatorname{Sin}[e+f x])^3}\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(30 d \left(3 c^2+6 c d+d^2 (-9+5 e+5 f x)\right) \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\right.$$
$$5\left(4 c^3+18 c^2 d+24 c d^2+d^3 (-46+15 e+15 f x)\right) \operatorname{Cos}\left[\frac{3}{2}(e+f x)\right]-$$
$$15 d^3 e \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]-15 d^3 f x \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right]+40 c^3 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$90 c^2 d \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+240 c d^2 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-370 d^3 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+$$
$$150 d^3 e \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+150 d^3 f x \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+90 c d^2 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-$$
$$90 d^3 \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]+75 d^3 e \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]+75 d^3 f x \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]-$$
$$4 c^3 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-18 c^2 d \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-42 c d^2 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]+$$
$$\left.64 d^3 \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-15 d^3 e \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]-15 d^3 f x \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]\right)$$

Problem 479: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+a \operatorname{Sin}[e+f x])^3 (c+d \operatorname{Sin}[e+f x])^3}\, dx$$

Optimal (type 3, 378 leaves, 9 steps):

$$-\frac{d^3\left(20c^2+30cd+13d^2\right)\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]}{\sqrt{c^2-d^2}}\right]}{a^3(c-d)^5(c+d)^2\sqrt{c^2-d^2}\,f}-\frac{d\left(4c^3-30c^2d+146cd^2+195d^3\right)\text{Cos}[e+fx]}{30a^3(c-d)^4(c+d)f\,(c+d\,\text{Sin}[e+fx])^2}-\frac{\text{Cos}[e+fx]}{5(c-d)f\,(a+a\,\text{Sin}[e+fx])^3(c+d\,\text{Sin}[e+fx])^2}-\frac{(2c-11d)\text{Cos}[e+fx]}{15a(c-d)^2f\,(a+a\,\text{Sin}[e+fx])^2(c+d\,\text{Sin}[e+fx])^2}-\frac{\left(2c^2-15cd+76d^2\right)\text{Cos}[e+fx]}{15(c-d)^3f\left(a^3+a^3\,\text{Sin}[e+fx]\right)(c+d\,\text{Sin}[e+fx])^2}-\frac{d\left(4c^4-30c^3d+142c^2d^2+525cd^3+304d^4\right)\text{Cos}[e+fx]}{30a^3(c-d)^5(c+d)^2f\,(c+d\,\text{Sin}[e+fx])}$$

Result (type 3, 1066 leaves):

$$-\left(\left(d^3\left(20c^2+30cd+13d^2\right)\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]\left(d\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+c\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{\sqrt{c^2-d^2}}\right]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^6\right)\Big/\left((c-d)^5(c+d)^2\sqrt{c^2-d^2}\;f\left(a+a\,\text{Sin}[e+fx]\right)^3\right)\right)+$$

$$\frac{1}{480(c-d)^5(c+d)^2f\left(a+a\,\text{Sin}[e+fx]\right)^3\left(c+d\,\text{Sin}[e+fx]\right)^2}\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)$$

$$\left(-400c^5d\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+3400c^4d^2\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+19340c^3d^3\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\right.$$
$$30400c^2d^4\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+19940cd^5\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+4810d^6\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]-$$
$$160c^6\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]+848c^5d\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-2400c^4d^2\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-$$
$$19396c^3d^3\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-35280c^2d^4\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-$$
$$24742cd^5\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-5810d^6\,\text{Cos}\left[\frac{3}{2}(e+fx)\right]-1260c^3d^3\,\text{Cos}\left[\frac{5}{2}(e+fx)\right]-$$
$$2640c^2d^4\,\text{Cos}\left[\frac{5}{2}(e+fx)\right]-2250cd^5\,\text{Cos}\left[\frac{5}{2}(e+fx)\right]-870d^6\,\text{Cos}\left[\frac{5}{2}(e+fx)\right]+$$
$$32c^5d\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]-200c^4d^2\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]+836c^3d^3\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]+$$
$$4480c^2d^4\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]+5747cd^5\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]+2200d^6\,\text{Cos}\left[\frac{7}{2}(e+fx)\right]-$$
$$135cd^5\,\text{Cos}\left[\frac{9}{2}(e+fx)\right]-90d^6\,\text{Cos}\left[\frac{9}{2}(e+fx)\right]+320c^6\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]-$$

$$1520\,c^5\,d\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+4568\,c^4\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+27\,340\,c^3\,d^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$40\,904\,c^2\,d^4\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+26\,020\,c\,d^5\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+6318\,d^6\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$800\,c^4\,d^2\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+7500\,c^3\,d^3\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+13\,280\,c^2\,d^4\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$9690\,c\,d^5\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+2750\,d^6\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-32\,c^6\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]+$$
$$80\,c^5\,d\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-32\,c^4\,d^2\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-6820\,c^3\,d^3\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-$$
$$18\,080\,c^2\,d^4\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-15\,670\,c\,d^5\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-$$
$$4266\,d^6\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]-60\,c^2\,d^4\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]+135\,c\,d^5\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]+$$
$$60\,d^6\,\text{Sin}\left[\frac{7}{2}\,(e+f\,x)\right]+8\,c^4\,d^2\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]-60\,c^3\,d^3\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]+$$
$$284\,c^2\,d^4\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]+915\,c\,d^5\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]+518\,d^6\,\text{Sin}\left[\frac{9}{2}\,(e+f\,x)\right]\Big)\Big)$$

Problem 482: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])\,(c+d\,\text{Sin}[e+f\,x])^{5/2}\,dx$$

Optimal (type 4, 290 leaves, 8 steps):

$$-\frac{2\,a\,(15\,c^2+56\,c\,d+25\,d^2)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{105\,f}-$$
$$\frac{2\,a\,(5\,c+7\,d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{35\,f}-\frac{2\,a\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{5/2}}{7\,f}+$$
$$\left(2\,a\,(15\,c^3+161\,c^2\,d+145\,c\,d^2+63\,d^3)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$
$$\left(105\,d\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)-$$
$$\left(2\,a\,(c^2-d^2)\,(15\,c^2+56\,c\,d+25\,d^2)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/$$
$$\left(105\,d\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 3531 leaves):

$$a\,\Bigg(\Bigg(c^3\,\text{Sec}[e]\,(1+\text{Sin}[e+f\,x])$$

$$
\Bigg(-\Bigg(\Bigg(\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Bigg(\Big(\text{Csc}[e]\,\big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,
\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\big)\Big)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Bigg),
-\Bigg(\Big(\text{Csc}[e]\,\big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\big)\Big)\Big/
\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Bigg)\Big]\,\text{Cot}[e]\,
\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/\Bigg(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}+
d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\Big(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\Big)\Big)}
\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/
\Big(d\,\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\Big)\Big)}
\sqrt{\Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\Big)}\Bigg)\Bigg)-
\Bigg(\Big(2\,d\,\text{Sin}[e]\,\big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\big)\Big)\Big/
\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Bigg)\Big/
\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Bigg)\Bigg)\Big/
\left(7\,f\,\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+
\Big(23\;
c^2\;
d\;
\text{Sec}[
e]\,(1+\text{Sin}[e+f\,x])
$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),-\left(\left(\text{Csc}[e]\right.\right.$$

$$\left.\left.\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\right.\right.$$

$$\left.\left.\left.\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\right]\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/$$

$$\left(\sqrt{1+\text{Cot}[e]^2}\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\right.}\right.$$

$$\left.\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-\right.\right.}$$

$$\left.\left.d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)$$

$$\left.\left.\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\right)\right)-$$

$$\left(\left(2\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/$$

$$\left.\left.\left.\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\right)\right)\right)\Big/$$

$$\left(15\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Big(29$$

$$c$$

$$d^2$$

$$\text{Sec}[$$

$$e]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right.\right.\right.\right.\right.\right.$$

$$\text{Sin}[e]\Big)\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Big),\ -\Big(\Big(\text{Csc}[e]$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)\Big)\Big/\Big(d\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\Big)\Big)\Big]\ \text{Cot}[e]\ \text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Big)\Big/$$

$$\Big(\sqrt{1+\text{Cot}[e]^2}\ \sqrt{\Big(\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/}$$

$$\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\Big)\Big)\ \sqrt{\Big(\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}-}$$

$$d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\Big)$$

$$\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)}\Big)\Big)\ -$$

$$\Big(\Big(2\,d\,\text{Sin}[e]\ \left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)\Big)\Big/$$

$$\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\ \text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Big)\Big/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]}\right)\Big)\Big)\Big/$$

$$\left(21\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Big(3$$

$$d^3$$

$$\text{Sec}[$$

$$e]\ \left(1+\text{Sin}[e+f\,x]\right)$$

$$\Big(-\Big(\Big(\text{AppellF1}\Big[-\frac{1}{2},\ -\frac{1}{2},\ -\frac{1}{2},\ \frac{1}{2},\ -\Big(\Big(\text{Csc}[e]\ \Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}$$

$$\text{Sin}[e]\Big)\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Big),\ -\Big(\Big(\text{Csc}[e]$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)\Big)\Big/\Big(d\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\Bigg)\Bigg)\Bigg)\Bigg]\ \text{Cot}[e]\ \text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Bigg/$$

$$\Bigg(\sqrt{1+\text{Cot}[e]^2}\ \sqrt{\Bigg(\Bigg(\left(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\right)\Bigg/}$$

$$\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\Bigg)\Bigg)\ \sqrt{\Bigg(\Bigg(\Bigg(d\sqrt{1+\text{Cot}[e]^2}-}$$

$$d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\Bigg)\Bigg/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\Bigg)$$

$$\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)}\Bigg)\Bigg)-$$

$$\Bigg(\Bigg(2\,d\,\text{Sin}[e]\ \left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]\right)\Bigg)\Bigg/$$

$$\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\ \text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Bigg)\Bigg/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(5\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{c+d\,\text{Sin}[e+f\,x]}$$

$$\Bigg(-\frac{\left(180\,c^2+308\,c\,d+115\,d^2\right)\,\text{Cos}[e]\ \text{Cos}[f\,x]}{210\,f}+$$

$$\frac{d^2\,\text{Cos}[3\,e]\ \text{Cos}[3\,f\,x]}{14\,f}-$$

$$\frac{d\,\left(15\,c+7\,d\right)\,\text{Cos}[2\,f\,x]\ \text{Sin}[2\,e]}{35\,f}+$$

$$\frac{\left(180\,c^2+308\,c\,d+115\,d^2\right)\,\text{Sin}[e]\ \text{Sin}[f\,x]}{210\,f}-$$

$$\frac{d\,\left(15\,c+7\,d\right)\,\text{Cos}[2\,e]\ \text{Sin}[2\,f\,x]}{35\,f}-\frac{d^2\,\text{Sin}[3\,e]\ \text{Sin}[3\,f\,x]}{14\,f}+$$

$$\frac{2\,\left(15\,c^3+161\,c^2\,d+145\,c\,d^2+63\,d^3\right)\,\text{Tan}[e]}{105\,d\,f}\Bigg)\Bigg)\Bigg/$$

$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2+$$

$$\frac{1}{7\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$18\, c^2\, \text{AppellF1}\Big[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\left(\left(\text{Sec}[e]\left(c + d\,\text{Cos}[e]\,\text{Sin}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\sqrt{1 + \text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1 + \text{Tan}[e]^2}\left(1 - \frac{c\,\text{Sec}[e]}{d\sqrt{1 + \text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c + d\,\text{Cos}[e]\,\text{Sin}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\sqrt{1 + \text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1 + \text{Tan}[e]^2}\left(-1 - \frac{c\,\text{Sec}[e]}{d\sqrt{1 + \text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\left(1 + \text{Sin}[e + f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1 + \text{Tan}[e]^2} - d\,\text{Sin}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\sqrt{1 + \text{Tan}[e]^2}}{c\,\text{Sec}[e] + d\sqrt{1 + \text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1 + \text{Tan}[e]^2} + d\,\text{Sin}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\sqrt{1 + \text{Tan}[e]^2}}{-c\,\text{Sec}[e] + d\sqrt{1 + \text{Tan}[e]^2}}}$$

$$\sqrt{c + d\,\text{Cos}[e]\,\text{Sin}[f\,x + \text{ArcTan}[\text{Tan}[e]]]\sqrt{1 + \text{Tan}[e]^2}} +$$

$$\frac{1}{d\,f\left(\text{Cos}\left[\frac{e}{2} + \frac{f\,x}{2}\right] + \text{Sin}\left[\frac{e}{2} + \frac{f\,x}{2}\right]\right)^2\sqrt{1 + \text{Tan}[e]^2}}$$

$$2\, c^3\, \text{AppellF1}\Big[\frac{1}{2}, \frac{1}{2}, \frac{1}{2},$$

$$\frac{3}{2},$$

$$-\left(\left(\mathrm{Sec}[e]\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\mathrm{Tan}[e]^2}\left(1-\frac{c\,\mathrm{Sec}[e]}{d\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\mathrm{Sec}[e]\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\mathrm{Tan}[e]^2}\left(-1-\frac{c\,\mathrm{Sec}[e]}{d\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right)]$$

$$\mathrm{Sec}[e]\,\mathrm{Sec}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,(1+\mathrm{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\mathrm{Tan}[e]^2}-d\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}}{c\,\mathrm{Sec}[e]+d\sqrt{1+\mathrm{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\mathrm{Tan}[e]^2}+d\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}}{-c\,\mathrm{Sec}[e]+d\sqrt{1+\mathrm{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}}\;+$$

$$\frac{1}{15\,f\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\mathrm{Tan}[e]^2}}$$

34

c

d

AppellF1[

$$\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2},\ \frac{3}{2},$$

$$-\left(\left(\mathrm{Sec}[e]\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\mathrm{Tan}[e]^2}\left(1-\frac{c\,\mathrm{Sec}[e]}{d\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\mathrm{Sec}[e]\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\Bigg)\Bigg)\Big]$$

$$\text{Sec}[e]\ \text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\ (1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\ \text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\ +$$

$$\frac{1}{21\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$10$$

$$d^2$$

$$\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\Bigg(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\ \text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/$$

$$\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\Bigg),$$

$$-\Bigg(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\ \text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/$$

$$\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\Bigg)\Big]$$

$$\text{Sec}[e]\ \text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\ (1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}\,\right)$$

Problem 483: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int(a+a\,\text{Sin}[e+f\,x])\,(c+d\,\text{Sin}[e+f\,x])^{3/2}\,dx$$

Optimal (type 4, 231 leaves, 7 steps):

$$-\frac{2\,a\,(3\,c+5\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{15\,f}-\frac{2\,a\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{5\,f}+\left(2\,a\,(3\,c^2+20\,c\,d+9\,d^2)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(15\,d\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)-\frac{2\,a\,(3\,c+5\,d)\,(c^2-d^2)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{15\,d\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 6, 2625 leaves):

$$a\left(\left(c^2\,\text{Sec}[e]\,(1+\text{Sin}[e+f\,x])\right.\right.$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\right)\Big/$$

$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\Big]\,\text{Cot}[e]$$

$$\left.\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\,\Big/\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}+\right.\right.\right.$$

$$d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\Big(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\Big)\Big)$$

$$\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\Big(d\,\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\Big)\Big)}$$

$$\sqrt{\Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\Big)}\Bigg)\Bigg)-$$

$$\Bigg(\Big(2\,d\,\text{Sin}[e]\,\Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\Big)\Big)\Big/$$

$$\left(\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(5\,f\,\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(4$$

$$c$$

$$d$$

$$\text{Sec}[$$

$$e]\,(1+\text{Sin}[e+f\,x])$$

$$\Bigg(-\Bigg(\Bigg(\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Big(\Big(\text{Csc}[e]\,\Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}$$

$$\text{Sin}[e]\Big)\Big)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Big),-\Big(\Big(\text{Csc}[e]$$

$$\Big(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\Big)\Big)\Big/\Bigg(d\,\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\Bigg)\Big)\Big]\,\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/$$

$$\Bigg(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/}$$

$$\Big(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\Big)\Big)\,\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}-}$$

d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$) / (d $\sqrt{1+\text{Cot}[e]^2}$ + c Csc[e]))

$\sqrt{}$(c + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$ Sin[e]))) −

((2 d Sin[e] (c + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$ Sin[e])) /

(d^2 Cos[e]^2 + d^2 Sin[e]^2) − $\frac{\text{Cot}[e]\ \text{Sin}[f x - \text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}$) /

($\sqrt{c + d\ \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]]\ \sqrt{1+\text{Cot}[e]^2}\ \text{Sin}[e]}$))) /

(3 f (Cos[$\frac{e}{2}$ + $\frac{f x}{2}$] + Sin[$\frac{e}{2}$ + $\frac{f x}{2}$])^2) +

(3

d^2
Sec[
e] (1 + Sin[e + f x])

(− (((AppellF1[−$\frac{1}{2}$, −$\frac{1}{2}$, −$\frac{1}{2}$, $\frac{1}{2}$, − ((Csc[e] (c + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$

Sin[e])) / (d $\sqrt{1+\text{Cot}[e]^2}$ (1 − $\frac{c\ \text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}$))), − ((Csc[e]

(c + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$ Sin[e])) / (d $\sqrt{1+\text{Cot}[e]^2}$

(−1 − $\frac{c\ \text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}$)))] Cot[e] Sin[f x − ArcTan[Cot[e]]]) /

($\sqrt{1+\text{Cot}[e]^2}$ $\sqrt{}$(((d $\sqrt{1+\text{Cot}[e]^2}$ + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$) /

(d $\sqrt{1+\text{Cot}[e]^2}$ − c Csc[e]))) $\sqrt{}$(((d $\sqrt{1+\text{Cot}[e]^2}$ −

d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$) / (d $\sqrt{1+\text{Cot}[e]^2}$ + c Csc[e]))

$\sqrt{}$(c + d Cos[f x − ArcTan[Cot[e]]] $\sqrt{1+\text{Cot}[e]^2}$ Sin[e]))) −

$$\left(\left(2\,d\,\mathrm{Sin}[e]\,\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)\right)\Big/\right.$$

$$\left(\left(d^2\,\mathrm{Cos}[e]^2+d^2\,\mathrm{Sin}[e]^2\right)-\frac{\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]}{\sqrt{1+\mathrm{Cot}[e]^2}}\right)\Big/$$

$$\left.\left(\sqrt{c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]}\right)\right)\right)\Big/$$

$$\left(5\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\left(\left(1+\mathrm{Sin}[e+f\,x]\right)\right.$$

$$\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}$$

$$\left(-\frac{2\,(6\,c+5\,d)\,\mathrm{Cos}[e]\,\mathrm{Cos}[f\,x]}{15\,f}-\right.$$

$$\frac{d\,\mathrm{Cos}[2\,f\,x]\,\mathrm{Sin}[2\,e]}{5\,f}+\frac{2\,(6\,c+5\,d)\,\mathrm{Sin}[e]\,\mathrm{Sin}[f\,x]}{15\,f}-$$

$$\left.\left.\frac{d\,\mathrm{Cos}[2\,e]\,\mathrm{Sin}[2\,f\,x]}{5\,f}+\frac{2\,(3\,c^2+20\,c\,d+9\,d^2)\,\mathrm{Tan}[e]}{15\,d\,f}\right)\right)\Big/$$

$$\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2+$$

$$\frac{1}{5\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\mathrm{Tan}[e]^2}}$$

8

c

AppellF1[

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{3}{2},$$

$$-\left(\left(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\;+$$

$$\frac{1}{d\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2$$

$$c^2$$

$$\text{AppellF1}\Big[$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\,\sqrt{1+\text{Tan}[e]^2}\;-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]\;+d\,\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\,\sqrt{1+\text{Tan}[e]^2}\;+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]\;+d\,\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\;\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}\;+$$

$$\frac{1}{3\,f\,\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2\,d\;\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\;\left(c+d\,\text{Cos}[e]\;\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\,\sqrt{1+\text{Tan}[e]^2}\;\left(1-\frac{c\,\text{Sec}[e]}{d\,\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\;\left(c+d\,\text{Cos}[e]\;\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\,\sqrt{1+\text{Tan}[e]^2}\;\left(-1-\frac{c\,\text{Sec}[e]}{d\,\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\;\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\;(1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\,\sqrt{1+\text{Tan}[e]^2}\;-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]\;+d\,\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\,\sqrt{1+\text{Tan}[e]^2}\;+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]\;+d\,\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\;\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}\right)$$

Problem 484: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a + a\,\text{Sin}[e + f\,x])\,\sqrt{c + d\,\text{Sin}[e + f\,x]}\,dx$$

Optimal (type 4, 179 leaves, 6 steps):

$$-\frac{2\,a\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{3\,f}+\frac{2\,a\,(c+3\,d)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{3\,d\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}-\frac{2\,a\,(c^2-d^2)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{3\,d\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 6, 1736 leaves):

$$a\left(\left(c\,\text{Sec}[e]\,(1+\text{Sin}[e+f\,x])\right.\right.$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\right)\Big/$$

$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\Big]\,\text{Cot}[e]$$

$$\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Big)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}+\right.\right.}\right.$$

$$\left.\left.d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\right.}$$

$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)$$

$$\left.\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\right)\right)-$$

$$\left(\left(2\,d\,\text{Sin}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/$$

$$\left.\left.\left.\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]}\right)\right)\right)\right)\Big/$$

$$\left(3\,f\,\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(d$$

$$\text{Sec}[e]\,\left(1+\text{Sin}[e+f\,x]\right)$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]\right)\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\Big]\,\text{Cot}[e]$$

$$\left.\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}\,+\right.\right.}\right.$$

$$\left.\left.d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,-c\,\text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}\,-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\right.}$$

$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}\,+c\,\text{Csc}[e]\right)\right)$$

$$\left.\left.\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]\right)}\right)\right)-$$

$$\left(\left(2\,d\,\text{Sin}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left(d^2 \operatorname{Cos}[e]^2 + d^2 \operatorname{Sin}[e]^2\right) - \frac{\operatorname{Cot}[e] \operatorname{Sin}[f x - \operatorname{ArcTan}[\operatorname{Cot}[e]]]}{\sqrt{1 + \operatorname{Cot}[e]^2}}\Bigg) \Bigg/$$

$$\left(\sqrt{c + d \operatorname{Cos}[f x - \operatorname{ArcTan}[\operatorname{Cot}[e]]] \sqrt{1 + \operatorname{Cot}[e]^2} \operatorname{Sin}[e]}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(f \left(\operatorname{Cos}\left[\frac{e}{2} + \frac{f x}{2}\right] + \operatorname{Sin}\left[\frac{e}{2} + \frac{f x}{2}\right]\right)^2\right) +$$

$$\Bigg(\left(1 + \operatorname{Sin}[e + f x]\right) \sqrt{c + d \operatorname{Sin}[e + f x]} \left(-\frac{2 \operatorname{Cos}[e] \operatorname{Cos}[f x]}{3 f} + \frac{2 \operatorname{Sin}[e] \operatorname{Sin}[f x]}{3 f} + \frac{2 (c + 3 d) \operatorname{Tan}[e]}{3 d f}\right)\Bigg)\Bigg/$$

$$\left(\operatorname{Cos}\left[\frac{e}{2} + \frac{f x}{2}\right] + \operatorname{Sin}\left[\frac{e}{2} + \frac{f x}{2}\right]\right)^2 +$$

$$\frac{1}{3 f \left(\operatorname{Cos}\left[\frac{e}{2} + \frac{f x}{2}\right] + \operatorname{Sin}\left[\frac{e}{2} + \frac{f x}{2}\right]\right)^2 \sqrt{1 + \operatorname{Tan}[e]^2}}$$

$$2 \operatorname{AppellF1}\Bigg[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\left(\left(\operatorname{Sec}[e] \left(c + d \operatorname{Cos}[e] \operatorname{Sin}[f x + \operatorname{ArcTan}[\operatorname{Tan}[e]]] \sqrt{1 + \operatorname{Tan}[e]^2}\right)\right)\Big/\left(d \sqrt{1 + \operatorname{Tan}[e]^2} \left(1 - \frac{c \operatorname{Sec}[e]}{d \sqrt{1 + \operatorname{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\operatorname{Sec}[e] \left(c + d \operatorname{Cos}[e] \operatorname{Sin}[f x + \operatorname{ArcTan}[\operatorname{Tan}[e]]] \sqrt{1 + \operatorname{Tan}[e]^2}\right)\right)\Big/\left(d \sqrt{1 + \operatorname{Tan}[e]^2} \left(-1 - \frac{c \operatorname{Sec}[e]}{d \sqrt{1 + \operatorname{Tan}[e]^2}}\right)\right)\right)\Bigg]$$

$$\operatorname{Sec}[e] \operatorname{Sec}[f x + \operatorname{ArcTan}[\operatorname{Tan}[e]]] \left(1 + \operatorname{Sin}[e + f x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\;+$$

$$\frac{1}{d\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2\,c\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\,\right)$$

Problem 485: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{a + a\,\text{Sin}[e + f\,x]}{\sqrt{c + d\,\text{Sin}[e + f\,x]}}\,dx$$

Optimal (type 4, 138 leaves, 5 steps):

$$\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}\left(e - \frac{\pi}{2} + f\,x\right), \frac{2\,d}{c+d}\right]\sqrt{c + d\,\text{Sin}[e + f\,x]}}{d\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}} - \frac{2\,a\,(c-d)\,\text{EllipticF}\left[\frac{1}{2}\left(e - \frac{\pi}{2} + f\,x\right), \frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{d\,f\,\sqrt{c + d\,\text{Sin}[e + f\,x]}}$$

Result (type 6, 880 leaves):

$$a\left(\left(\text{Sec}[e]\,(1 + \text{Sin}[e + f\,x])\right.\right.$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}, -\left(\left(\text{Csc}[e]\,\left(c + d\,\text{Cos}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\sqrt{1 + \text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\,\sqrt{1 + \text{Cot}[e]^2}\,\left(1 - \frac{c\,\text{Csc}[e]}{d\,\sqrt{1 + \text{Cot}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Csc}[e]\,\left(c + d\,\text{Cos}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1 + \text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left.\left(d\,\sqrt{1 + \text{Cot}[e]^2}\,\left(-1 - \frac{c\,\text{Csc}[e]}{d\,\sqrt{1 + \text{Cot}[e]^2}}\right)\right)\right)\right]\,\text{Cot}[e]$$

$$\left.\text{Sin}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\right)\Big/\left(\sqrt{1 + \text{Cot}[e]^2}\,\sqrt{\left(\left(d\,\sqrt{1 + \text{Cot}[e]^2} + \right.\right.}\right.$$

$$\left.\left.d\,\text{Cos}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1 + \text{Cot}[e]^2}\right)\Big/\left(d\,\sqrt{1 + \text{Cot}[e]^2} - c\,\text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d\,\sqrt{1 + \text{Cot}[e]^2} - d\,\text{Cos}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1 + \text{Cot}[e]^2}\right)\Big/\right.}$$

$$\left.\left(d\,\sqrt{1 + \text{Cot}[e]^2} + c\,\text{Csc}[e]\right)\right)$$

$$\left.\left.\sqrt{\left(c + d\,\text{Cos}[f\,x - \text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1 + \text{Cot}[e]^2}\,\text{Sin}[e]\right)}\right)\right) -$$

$$\left(\left(2\,d\,\mathrm{Sin}[e]\,\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left(d^2\,\mathrm{Cos}[e]^2+d^2\,\mathrm{Sin}[e]^2\right)-\frac{\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]}{\sqrt{1+\mathrm{Cot}[e]^2}}\right)\Big/$$

$$\left.\left.\left(\sqrt{c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]}\right)\right)\right)\Big/$$

$$\left(f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\frac{2\,\left(1+\mathrm{Sin}[e+f\,x]\right)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\mathrm{Tan}[e]}{d\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2}+$$

$$\frac{1}{d\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\mathrm{Tan}[e]^2}}$$

$$2\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(-1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\mathrm{Sec}[e]\,\mathrm{Sec}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\left(1+\mathrm{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\,\sqrt{1+\mathrm{Tan}[e]^2}-d\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}}{c\,\mathrm{Sec}[e]+d\,\sqrt{1+\mathrm{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}\,\right)$$

Problem 486: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{a+a\,\text{Sin}[e+f\,x]}{(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 169 leaves, 6 steps):

$$-\frac{2\,a\,\text{Cos}[e+f\,x]}{(c+d)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}-\frac{2\,a\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,(c+d)\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}+$$

$$\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{d\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 6, 938 leaves):

$$a\left(\left((1+\text{Sin}[e+f\,x])\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\,\left(-\frac{2\,\text{Csc}[e]\,\text{Sec}[e]}{d\,(c+d)\,f}+\frac{2\,\text{Csc}[e]\,(c\,\text{Cos}[e]+d\,\text{Sin}[f\,x])}{d\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])}\right)\right)\Big/\right.$$

$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2-\left(\text{Sec}[e]\,(1+\text{Sin}[e+f\,x])\right.$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right),-\left(\left(\text{Csc}[e]\right.\right.$$

$$\left.\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\right.$$

$$\left.\left.\left.\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\right]\,\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right)\Big/$$

$$\left(\sqrt{1+\text{Cot}[e]^2}\ \sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)}\ \sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)}\ \sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\right)-$$

$$\left(\left(2\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(\left(c+d\right)f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\frac{1}{d\left(c+d\right)f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

2

AppellF1[

$\frac{1}{2}$,

$\frac{1}{2}$,

$\frac{1}{2}$,

$\frac{3}{2}$,

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\Bigg)\Bigg)\Bigg]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,(1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\right)$$

Problem 487: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{a+a\,\text{Sin}[e+f\,x]}{(c+d\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 237 leaves, 7 steps):

$$-\frac{2\,a\,\text{Cos}[e+f\,x]}{3\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}-\frac{2\,a\,(c-3\,d)\,\text{Cos}[e+f\,x]}{3\,(c-d)\,(c+d)^2\,f\sqrt{c+d\,\text{Sin}[e+f\,x]}}-$$

$$\frac{2\,a\,(c-3\,d)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{3\,(c-d)\,d\,(c+d)^2\,f\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}+$$

$$\frac{2\,a\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{3\,d\,(c+d)\,f\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 6, 1870 leaves):

$$a\left(\left((1+\text{Sin}[e+f\,x])\sqrt{c+d\,\text{Sin}[e+f\,x]}\right.\right.$$

$$\left(-\frac{2\,(c-3\,d)\,\text{Csc}[e]\,\text{Sec}[e]}{3\,(c-d)\,d\,(c+d)^2\,f}+\frac{2\,\text{Csc}[e]\,(c\,\text{Cos}[e]+d\,\text{Sin}[f\,x])}{3\,d\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])^2}-\right.$$

$$\left.\left.\frac{2\,\text{Csc}[e]\,(3\,c\,\text{Cos}[e]-d\,\text{Cos}[e]-c\,\text{Sin}[f\,x]+3\,d\,\text{Sin}[f\,x])}{3\,(c-d)\,(c+d)^2\,f\,(c+d\,\text{Sin}[e+f\,x])}\right)\right)\Bigg/$$

$$\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2-\Bigg(c\,\mathrm{Sec}[e]\,\left(1+\mathrm{Sin}[e+f\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Bigg(\Big(\mathrm{Csc}[e]\,\Big(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}$$

$$\mathrm{Sin}[e]\Big)\Big)\Bigg/\left(d\,\sqrt{1+\mathrm{Cot}[e]^2}\,\left(1-\frac{c\,\mathrm{Csc}[e]}{d\,\sqrt{1+\mathrm{Cot}[e]^2}}\right)\right)\Bigg),-\Bigg(\Big(\mathrm{Csc}[e]$$

$$\Big(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\Big)\Big)\Bigg/\Bigg(d\,\sqrt{1+\mathrm{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\mathrm{Csc}[e]}{d\,\sqrt{1+\mathrm{Cot}[e]^2}}\right)\Bigg)\Bigg)\Big]\,\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\Bigg)\Bigg/$$

$$\Bigg(\sqrt{1+\mathrm{Cot}[e]^2}\,\sqrt{\Bigg(\Big(d\,\sqrt{1+\mathrm{Cot}[e]^2}+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\Big)\Bigg/}$$

$$\left(d\,\sqrt{1+\mathrm{Cot}[e]^2}-c\,\mathrm{Csc}[e]\right)\Bigg)\,\sqrt{\Bigg(\Big(d\,\sqrt{1+\mathrm{Cot}[e]^2}-}$$

$$d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\Big)\Big/\left(d\,\sqrt{1+\mathrm{Cot}[e]^2}+c\,\mathrm{Csc}[e]\right)\Bigg)$$

$$\sqrt{\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)}\Bigg)\Bigg)-$$

$$\Bigg(\Big(2\,d\,\mathrm{Sin}[e]\,\Big(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\Big)\Big)\Big/$$

$$\left(d^2\,\mathrm{Cos}[e]^2+d^2\,\mathrm{Sin}[e]^2\right)-\frac{\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]}{\sqrt{1+\mathrm{Cot}[e]^2}}\Bigg)\Bigg/$$

$$\left(\sqrt{c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(3\,(c-d)\,(c+d)^2\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(d\,\mathrm{Sec}[e]\,\left(1+\mathrm{Sin}[e+f\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(\mathrm{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Bigg(\Big(\mathrm{Csc}[e]\,\Big(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}$$

$$\text{Sin}[e]\Big)\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Big),-\Big(\Big(\text{Csc}[e]$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/\Big(d\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\Big)\Big)\Big]\,\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Big)\Big/$$

$$\Big(\sqrt{1+\text{Cot}[e]^2}\sqrt{\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/}$$

$$\Big(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\Big)\Big)\sqrt{\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}-}$$

$$d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\Big(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\Big)\Big)$$

$$\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\Big)\Big)-$$

$$\Big(\Big(2\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/$$

$$\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Big)\Big/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Big)\Big)\Big)\Big/$$

$$\left(\left(c-d\right)\left(c+d\right)^2 f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)-$$

$$\frac{1}{3\left(c-d\right)\left(c+d\right)^2 f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

2

AppellF1$\Big[$

$\frac{1}{2}$,

$\frac{1}{2}$,

$\frac{1}{2}$,

$\frac{3}{2}$,

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\;+$$

$$\frac{1}{(c-d)\,d\,(c+d)^2\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2$$

$$c$$

$$\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$
$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$
$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\right)$$

Problem 488: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{a+a\,\text{Sin}[e+f\,x]}{(c+d\,\text{Sin}[e+f\,x])^{7/2}}\,dx$$

Optimal (type 4, 318 leaves, 8 steps):

$$-\frac{2\,a\,\text{Cos}[e+f\,x]}{5\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])^{5/2}}-$$
$$\frac{2\,a\,(3\,c-5\,d)\,\text{Cos}[e+f\,x]}{15\,(c-d)\,(c+d)^2\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}-\frac{2\,a\,(3\,c^2-20\,c\,d+9\,d^2)\,\text{Cos}[e+f\,x]}{15\,(c-d)^2\,(c+d)^3\,f\sqrt{c+d\,\text{Sin}[e+f\,x]}}-$$
$$\left(2\,a\,(3\,c^2-20\,c\,d+9\,d^2)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$
$$\left(15\,(c-d)^2\,d\,(c+d)^3\,f\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)+$$
$$\frac{2\,a\,(3\,c-5\,d)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{15\,(c-d)\,d\,(c+d)^2\,f\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 6, 2815 leaves):

$$a\left(\left((1+\text{Sin}[e+f\,x])\sqrt{c+d\,\text{Sin}[e+f\,x]}\right.\right.$$
$$\left(-\frac{2\,(3\,c^2-20\,c\,d+9\,d^2)\,\text{Csc}[e]\,\text{Sec}[e]}{15\,(c-d)^2\,d\,(c+d)^3\,f}+\frac{2\,\text{Csc}[e]\,(c\,\text{Cos}[e]+d\,\text{Sin}[f\,x])}{5\,d\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])^3}-\right.$$
$$(2\,\text{Csc}[e]\,(5\,c\,\text{Cos}[e]-3\,d\,\text{Cos}[e]-3\,c\,\text{Sin}[f\,x]+5\,d\,\text{Sin}[f\,x]))\Big/$$
$$\left(15\,(c-d)\,(c+d)^2\,f\,(c+d\,\text{Sin}[e+f\,x])^2\right)-$$
$$\left(2\,\text{Csc}[e]\,\left(15\,c^2\,\text{Cos}[e]-12\,c\,d\,\text{Cos}[e]+5\,d^2\,\text{Cos}[e]-3\,c^2\,\text{Sin}[f\,x]+20\,c\,d\,\text{Sin}[f\,x]-\right.\right.$$

$$9\,d^2\,\text{Sin}[f\,x]\Big)\Big)\Big/\left(15\,(c-d)^2\,(c+d)^3\,f\,(c+d\,\text{Sin}[e+f\,x])\right)\Bigg)\Bigg)\Big/$$

$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2-\Bigg(c^2\,\text{Sec}[e]\,\left(1+\text{Sin}[e+f\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\Bigg(\Big(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right.$$

$$\left.\text{Sin}[e]\right)\Big)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Bigg),-\Bigg(\Big(\text{Csc}[e]$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/\Bigg(d\,\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\Bigg)\Bigg)\Big]\,\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/$$

$$\Bigg(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/}$$

$$\overline{\left(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\Big)}\,\sqrt{\Big(\Big(d\,\sqrt{1+\text{Cot}[e]^2}-}$$

$$\overline{d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\Big)}$$

$$\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\Bigg)\Bigg)-$$

$$\Bigg(\Big(2\,d\,\text{Sin}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/$$

$$\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Bigg)\Big/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Bigg)\Bigg)\Big/$$

$$\left(5\,(c-d)^2\,(c+d)^3\,f\,\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Big(4$$

c
d
Sec[e]

$$(1+\text{Sin}[e+f x])$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\right]\text{Cot}[e]\,\text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]\right)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)}\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)}\sqrt{\left(c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\right)\right)-\left(\left(2\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/\left(\sqrt{c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\right)\right)\Big/$$

$$\left(3\,(c-d)^2\,(c+d)^3\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f x}{2}\right]\right)^2\right)-$$

$$\Bigg(3$$

$$d^2$$

$$\text{Sec}[e]$$

$$(1+\text{Sin}[e+f x])$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right.\right.\right.\right.\right.\right.$$

$$\text{Sin}[e]\Big)\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Bigg),-\Bigg(\Big(\text{Csc}[e]$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/\Bigg(d\sqrt{1+\text{Cot}[e]^2}$$

$$\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\Bigg)\Bigg)\Bigg]\,\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/$$

$$\Bigg(\sqrt{1+\text{Cot}[e]^2}\sqrt{\Bigg(\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/}$$

$$\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\Big)\Bigg)\sqrt{\Bigg(\Big(\Big(d\sqrt{1+\text{Cot}[e]^2}-}$$

$$d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\Big)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\Big)$$

$$\sqrt{\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)}\Bigg)\Bigg)-$$

$$\Bigg(\Big(2\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\Big)\Big/$$

$$\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Bigg)\Big/$$

$$\left(\sqrt{c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]}\right)\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(5\,(c-d)^2\,(c+d)^3\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)-$$

$$\frac{1}{5\,(c-d)^2\,(c+d)^3\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$8$$

$$c$$

$$\text{AppellF1}\Big[$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}+$$

$$\frac{1}{(c-d)^2\,d\,(c+d)^3\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2\;c^2\;\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\;+$$

$$\frac{1}{3\,(c-d)^2\,(c+d)^3\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$2\,d\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,(1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left.\sqrt{c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}\right)$$

Problem 516: Result more than twice size of optimal antiderivative.

$$\int \frac{(c + d\,\text{Sin}[e + f\,x])^{5/2}}{(a + a\,\text{Sin}[e + f\,x])^3}\,dx$$

Optimal (type 4, 322 leaves, 8 steps):

$$-\frac{2\,(c-d)\,(c+3\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{15\,a\,f\,(a+a\,\text{Sin}[e+f\,x])^2}-\frac{(4\,c^2+15\,c\,d+27\,d^2)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{30\,f\,(a^3+a^3\,\text{Sin}[e+f\,x])}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{5\,f\,(a+a\,\text{Sin}[e+f\,x])^3}-$$
$$\left((4\,c^2+15\,c\,d+27\,d^2)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$
$$\left(30\,a^3\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)+$$
$$\left((c+d)\,(4\,c^2+11\,c\,d+15\,d^2)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/$$
$$\left(30\,a^3\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 4, 662 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right.$$

$$\left(-\frac{(c-d)^2}{5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}-\frac{(c-d)(2 c+9 d)}{15\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}+\right.$$

$$\left(2\left(2 c^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]+7 c d \text{Sin}\left[\frac{1}{2}(e+f x)\right]-9 d^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$

$$\left(15\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\right)+$$

$$\left(2\left(c^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]-2 c d \text{Sin}\left[\frac{1}{2}(e+f x)\right]+d^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$

$$\left(5\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)+$$

$$\left(4 c^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]+15 c d \text{Sin}\left[\frac{1}{2}(e+f x)\right]+27 d^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\Big/$$

$$\left.\left.\left(15\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\sqrt{c+d \text{Sin}[e+f x]}\right)\Big/$$

$$\left(f\left(a+a \text{Sin}[e+f x]\right)^3\right)-\left(d\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^6\right.$$

$$\left(-\frac{2\left(c d-15 d^2\right) \text{EllipticF}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}}{\sqrt{c+d \text{Sin}[e+f x]}}+\right.$$

$$\frac{2\left(4 c^2+15 c d+27 d^2\right) \text{Cos}[e+f x]^2 \sqrt{c+d \text{Sin}[e+f x]}}{d\left(1-\text{Sin}[e+f x]^2\right)}-\frac{1}{d}$$

$$\left(4 c^2+15 c d+27 d^2\right)\left(\frac{2(c+d) \text{EllipticE}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}}{\sqrt{c+d \text{Sin}[e+f x]}}-\right.$$

$$\left.\left.\left.\frac{2 c \text{EllipticF}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}}{\sqrt{c+d \text{Sin}[e+f x]}}\right)\right)\right)\Big/\left(60 f\left(a+a \text{Sin}[e+f x]\right)^3\right)$$

Problem 525: Result more than twice size of optimal antiderivative.

$$\int \sqrt{a + a \operatorname{Sin}[e + f x]}\, dx$$

Optimal (type 3, 26 leaves, 1 step):

$$-\frac{2 a \operatorname{Cos}[e + f x]}{f \sqrt{a + a \operatorname{Sin}[e + f x]}}$$

Result (type 3, 65 leaves):

$$\frac{2 \left(-\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right) \sqrt{a \left(1 + \operatorname{Sin}[e + f x]\right)}}{f \left(\operatorname{Cos}\left[\frac{1}{2} (e + f x)\right] + \operatorname{Sin}\left[\frac{1}{2} (e + f x)\right]\right)}$$

Problem 526: Result is not expressed in closed-form.

$$\int \frac{\sqrt{a + a \operatorname{Sin}[e + f x]}}{c + d \operatorname{Sin}[e + f x]}\, dx$$

Optimal (type 3, 61 leaves, 2 steps):

$$-\frac{2 \sqrt{a} \operatorname{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \operatorname{Cos}[e+f x]}{\sqrt{c+d} \sqrt{a+a \operatorname{Sin}[e+f x]}}\right]}{\sqrt{d} \sqrt{c + d}\, f}$$

Result (type 7, 657 leaves):

$$\frac{1}{\sqrt{d}\,\sqrt{c+d}\,f\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)}$$

$$\left(\frac{1}{8}+\frac{i}{8}\right)\left(\text{RootSum}\left[-d+2\,i\,c\,e^{i\,e}\,\#1^2+d\,e^{2\,i\,e}\,\#1^4\,\&,\right.\right.$$

$$\frac{1}{d-i\,c\,e^{i\,e}\,\#1^2}\left((1+i)\,d\,\sqrt{e^{-i\,e}}\,f\,x-(2-2\,i)\,d\,\sqrt{e^{-i\,e}}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]-i\,\sqrt{d}\,\sqrt{c+d}\,f\,x\,\#1+\right.$$

$$2\,\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1+\frac{(1-i)\,c\,f\,x\,\#1^2}{\sqrt{e^{-i\,e}}}+\frac{(2+2\,i)\,c\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i\,e}}}-$$

$$\left.\sqrt{d}\,\sqrt{c+d}\,e^{i\,e}\,f\,x\,\#1^3-2\,i\,\sqrt{d}\,\sqrt{c+d}\,e^{i\,e}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1^3\right)\&\Big]-$$

$$i\,\text{RootSum}\left[-d+2\,i\,c\,e^{i\,e}\,\#1^2+d\,e^{2\,i\,e}\,\#1^4\,\&,\frac{1}{d-i\,c\,e^{i\,e}\,\#1^2}\right.$$

$$\left((1-i)\,d\,\sqrt{e^{-i\,e}}\,f\,x+(2+2\,i)\,d\,\sqrt{e^{-i\,e}}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]+\sqrt{d}\,\sqrt{c+d}\,f\,x\,\#1+\right.$$

$$2\,i\,\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1-\frac{(1+i)\,c\,f\,x\,\#1^2}{\sqrt{e^{-i\,e}}}+\frac{(2-2\,i)\,c\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i\,e}}}-$$

$$\left.\left.i\,\sqrt{d}\,\sqrt{c+d}\,e^{i\,e}\,f\,x\,\#1^3+2\,\sqrt{d}\,\sqrt{c+d}\,e^{i\,e}\,\text{Log}\left[e^{\frac{i\,f\,x}{2}}-\#1\right]\#1^3\right)\&\right]\Bigg)$$

$$\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)\sqrt{a\,(1+\text{Sin}[e+f\,x])}$$

Problem 527: Result is not expressed in closed-form.

$$\int\frac{\sqrt{a+a\,\text{Sin}[e+f\,x]}}{(c+d\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 105 leaves, 3 steps):

$$-\frac{\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{d}\,(c+d)^{3/2}\,f}-\frac{a\,\text{Cos}[e+f\,x]}{(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 7, 871 leaves):

$$\frac{1}{\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]}$$

$$\left(\frac{1}{4}+\frac{i}{4}\right)\sqrt{a\left(1+\text{Sin}[e+f x]\right)}\left(\left(\left(\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)\left(\left(-1+i\right)x\,\text{Cos}[e]+\right.\right.\right.\right.$$

$$\frac{1}{4 f}\text{RootSum}\left[-d+2\,i\,c\,e^{i e}\,\#1^2+d\,e^{2 i e}\,\#1^4\,\&,\;\frac{1}{d-i\,c\,e^{i e}\,\#1^2}\right.$$

$$\left(\left(1+i\right)d\sqrt{e^{-i e}}\,f x-\left(2-2 i\right)d\sqrt{e^{-i e}}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]-i\sqrt{d}\,\sqrt{c+d}\,f x\,\#1+\right.$$

$$2\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1+\frac{\left(1-i\right)c f x\,\#1^2}{\sqrt{e^{-i e}}}+\frac{\left(2+2 i\right)c\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i e}}}-$$

$$\left.\left.\sqrt{d}\,\sqrt{c+d}\,e^{i e} f x\,\#1^3-2\,i\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^3\right)\&\right]$$

$$\left.\left.\left(\text{Cos}[e]+i\left(-1+\text{Sin}[e]\right)\right)\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}+\left(1+i\right)x\,\text{Sin}[e]\right)\right)\Big/$$

$$\left(\sqrt{d}\,\left(c+d\right)^{3/2}\left(\text{Cos}[e]+i\left(-1+\text{Sin}[e]\right)\right)\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)\left(\left(1-i\right)x\,\text{Cos}[e]-\left(1+i\right)x\,\text{Sin}[e]+\frac{1}{4 f}\right.\right.$$

$$\text{RootSum}\left[-d+2\,i\,c\,e^{i e}\,\#1^2+d\,e^{2 i e}\,\#1^4\,\&,\;\frac{1}{d-i\,c\,e^{i e}\,\#1^2}\right.$$

$$\left(\left(1-i\right)d\sqrt{e^{-i e}}\,f x+\left(2+2 i\right)d\sqrt{e^{-i e}}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]+\sqrt{d}\,\sqrt{c+d}\,f x\,\#1+\right.$$

$$2\,i\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1-\frac{\left(1+i\right)c f x\,\#1^2}{\sqrt{e^{-i e}}}+\frac{\left(2-2 i\right)c\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i e}}}-$$

$$\left.\left.i\sqrt{d}\,\sqrt{c+d}\,e^{i e} f x\,\#1^3+2\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^3\right)\&\right]$$

$$\left.\left.\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\left(-1-i\,\text{Cos}[e]+\text{Sin}[e]\right)\right)\right)\Big/$$

$$\left(\sqrt{d}\,\left(c+d\right)^{3/2}\left(\text{Cos}[e]+i\left(-1+\text{Sin}[e]\right)\right)\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\right)-$$

$$\left.\frac{\left(2-2 i\right)\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{\left(c+d\right)f\left(c+d\,\text{Sin}[e+f x]\right)}\right)$$

Problem 528: Result is not expressed in closed-form.

$$\int \frac{\sqrt{a+a\,\text{Sin}[e+f\,x]}}{(c+d\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 154 leaves, 4 steps):

$$-\frac{3\sqrt{a}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{4\sqrt{d}\,(c+d)^{5/2}\,f}-\frac{a\,\text{Cos}[e+f\,x]}{2\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^2}-\frac{3\,a\,\text{Cos}[e+f\,x]}{4\,(c+d)^2\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 7, 920 leaves):

$$\frac{1}{\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]}$$

$$\left(\frac{1}{16}+\frac{i}{16}\right)\sqrt{a\,(1+\text{Sin}[e+f x])}\left(\left(3\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)\left((-1+i)\,x\,\text{Cos}[e]+\right.\right.\right.$$

$$\frac{1}{4 f}\text{RootSum}\Big[-d+2\,i\,c\,e^{i e}\,\#1^2+d\,e^{2 i e}\,\#1^4\,\&,\ \frac{1}{d-i\,c\,e^{i e}\,\#1^2}$$

$$\left((1+i)\,d\sqrt{e^{-i e}}\,f x-(2-2 i)\,d\sqrt{e^{-i e}}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]-i\sqrt{d}\,\sqrt{c+d}\,f x\,\#1+\right.$$

$$2\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1+\frac{(1-i)\,c\,f x\,\#1^2}{\sqrt{e^{-i e}}}+\frac{(2+2 i)\,c\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i e}}}-$$

$$\left.\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,f x\,\#1^3-2\,i\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^3\right)\&\Big]$$

$$\left.\left.(\text{Cos}[e]+i\,(-1+\text{Sin}[e]))\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}+(1+i)\,x\,\text{Sin}[e]\right)\right)\Big/$$

$$\left(\sqrt{d}\,(c+d)^{5/2}\,(\text{Cos}[e]+i\,(-1+\text{Sin}[e]))\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\right)+$$

$$\left(3\left(\text{Cos}\left[\frac{e}{2}\right]+i\,\text{Sin}\left[\frac{e}{2}\right]\right)\left((1-i)\,x\,\text{Cos}[e]-(1+i)\,x\,\text{Sin}[e]+\frac{1}{4 f}\right.\right.$$

$$\text{RootSum}\Big[-d+2\,i\,c\,e^{i e}\,\#1^2+d\,e^{2 i e}\,\#1^4\,\&,\ \frac{1}{d-i\,c\,e^{i e}\,\#1^2}$$

$$\left((1-i)\,d\sqrt{e^{-i e}}\,f x+(2+2 i)\,d\sqrt{e^{-i e}}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]+\sqrt{d}\,\sqrt{c+d}\,f x\,\#1+\right.$$

$$2\,i\sqrt{d}\,\sqrt{c+d}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1-\frac{(1+i)\,c\,f x\,\#1^2}{\sqrt{e^{-i e}}}+\frac{(2-2 i)\,c\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^2}{\sqrt{e^{-i e}}}-$$

$$\left.i\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,f x\,\#1^3+2\sqrt{d}\,\sqrt{c+d}\,e^{i e}\,\text{Log}\left[e^{\frac{i f x}{2}}-\#1\right]\#1^3\right)\&\Big]$$

$$\left.\left.\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\,(-1-i\,\text{Cos}[e]+\text{Sin}[e])\right)\right)\Big/$$

$$\left(\sqrt{d}\,(c+d)^{5/2}\,(\text{Cos}[e]+i\,(-1+\text{Sin}[e]))\sqrt{\text{Cos}[e]-i\,\text{Sin}[e]}\right)-$$

$$\frac{(4-4 i)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{(c+d)\,f\,(c+d\,\text{Sin}[e+f x])^2}-$$

$$\left.\frac{(6-6 i)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{(c+d)^2\,f\,(c+d\,\text{Sin}[e+f x])}\right)$$

Problem 533: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + a \sin[e + f x])^{3/2}}{c + d \sin[e + f x]} \, dx$$

Optimal (type 3, 98 leaves, 4 steps):

$$\frac{2 a^{3/2} (c - d) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \cos[e+f x]}{\sqrt{c+d} \sqrt{a+a \sin[e+f x]}}\right]}{d^{3/2} \sqrt{c + d} f} - \frac{2 a^2 \cos[e + f x]}{d f \sqrt{a + a \sin[e + f x]}}$$

Result (type 3, 233 leaves):

$$\frac{1}{d^{3/2} \sqrt{c + d} f \left(\cos\left[\frac{1}{2} (e + f x)\right] + \sin\left[\frac{1}{2} (e + f x)\right]\right)^3} \left(-2 \sqrt{d} \sqrt{c + d} \cos\left[\frac{1}{2} (e + f x)\right] + (c - d) \left(\text{Log}\left[-\sec\left[\frac{1}{4} (e + f x)\right]^2 \left(c + d + \sqrt{d} \sqrt{c + d} \cos\left[\frac{1}{2} (e + f x)\right] - \sqrt{d} \sqrt{c + d} \sin\left[\frac{1}{2} (e + f x)\right]\right)\right] - \text{Log}\left[(c + d) \sec\left[\frac{1}{4} (e + f x)\right]^2 + \sqrt{d} \sqrt{c + d} \left(-1 + 2 \tan\left[\frac{1}{4} (e + f x)\right] + \tan\left[\frac{1}{4} (e + f x)\right]^2\right)\right]\right) + 2 \sqrt{d} \sqrt{c + d} \sin\left[\frac{1}{2} (e + f x)\right]\right) (a (1 + \sin[e + f x]))^{3/2}$$

Problem 534: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + a \sin[e + f x])^{3/2}}{(c + d \sin[e + f x])^2} \, dx$$

Optimal (type 3, 119 leaves, 4 steps):

$$-\frac{a^{3/2} (c + 3 d) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \cos[e+f x]}{\sqrt{c+d} \sqrt{a+a \sin[e+f x]}}\right]}{d^{3/2} (c + d)^{3/2} f} + \frac{a^2 (c - d) \cos[e + f x]}{d (c + d) f \sqrt{a + a \sin[e + f x]} (c + d \sin[e + f x])}$$

Result (type 3, 268 leaves):

$$-\left(\left(\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{3/2}\left(-2\left(c-d\right)\sqrt{d}\,\sqrt{c+d}\,\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+2\left(c-d\right)\sqrt{d}\,\sqrt{c+d}\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]+\left(c+3 d\right)\left(\text{Log}\left[-\text{Sec}\left[\frac{1}{4}\left(e+f x\right)\right]^2\left(c+d+\sqrt{d}\,\sqrt{c+d}\,\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-\sqrt{d}\,\sqrt{c+d}\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right]-\text{Log}\left[\left(c+d\right)\text{Sec}\left[\frac{1}{4}\left(e+f x\right)\right]^2+\sqrt{d}\,\sqrt{c+d}\left(-1+2\,\text{Tan}\left[\frac{1}{4}\left(e+f x\right)\right]+\text{Tan}\left[\frac{1}{4}\left(e+f x\right)\right]^2\right)\right]\right)\left(c+d\,\text{Sin}[e+f x]\right)\right)\right)\Big/\left(2\,d^{3/2}\left(c+d\right)^{3/2} f\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^3\left(c+d\,\text{Sin}[e+f x]\right)\right)\right)$$

Problem 536: Result more than twice size of optimal antiderivative.

$$\int\left(a+a\,\text{Sin}[e+f x]\right)^{5/2}\left(c+d\,\text{Sin}[e+f x]\right)^3\,dx$$

Optimal (type 3, 328 leaves, 6 steps):

$$-\frac{4 a^3\left(c+d\right)\left(15 c^2+10 c d+7 d^2\right)\left(3 c^2-38 c d+355 d^2\right)\text{Cos}[e+f x]}{3465 d^2 f\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{1}{3465 d f}8 a^2\left(5 c-d\right)\left(c+d\right)\left(3 c^2-38 c d+355 d^2\right)\text{Cos}[e+f x]\sqrt{a+a\,\text{Sin}[e+f x]}-\frac{4 a\left(c+d\right)\left(3 c^2-38 c d+355 d^2\right)\text{Cos}[e+f x]\left(a+a\,\text{Sin}[e+f x]\right)^{3/2}}{1155 f}-\frac{2 a^3\left(3 c^2-38 c d+355 d^2\right)\text{Cos}[e+f x]\left(c+d\,\text{Sin}[e+f x]\right)^3}{693 d^2 f\sqrt{a+a\,\text{Sin}[e+f x]}}+\frac{2 a^3\left(3 c-23 d\right)\text{Cos}[e+f x]\left(c+d\,\text{Sin}[e+f x]\right)^4}{99 d^2 f\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{2 a^2\,\text{Cos}[e+f x]\sqrt{a+a\,\text{Sin}[e+f x]}\left(c+d\,\text{Sin}[e+f x]\right)^4}{11 d f}$$

Result (type 3, 845 leaves):

$$-\left(\left(\left(\left(40 c^3+90 c^2 d+78 c d^2+23 d^3\right) \operatorname{Cos}\left[\frac{1}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}\right) \Big/ \left(8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)\right)-\right.$$

$$\left(\left(20 c^3+66 c^2 d+60 c d^2+19 d^3\right) \operatorname{Cos}\left[\frac{3}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}\right) \Big/ \left(24 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)+$$

$$\left(\left(8 c^3+60 c^2 d+72 c d^2+25 d^3\right) \operatorname{Cos}\left[\frac{5}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}\right) \Big/ \left(80 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)+$$

$$\frac{d\left(12 c^2+30 c d+13 d^2\right) \operatorname{Cos}\left[\frac{7}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}}{112 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}-$$

$$\frac{d^2(6 c+5 d) \operatorname{Cos}\left[\frac{9}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}}{144 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}-$$

$$\frac{d^3 \operatorname{Cos}\left[\frac{11}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}}{176 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}+$$

$$\left(\left(40 c^3+90 c^2 d+78 c d^2+23 d^3\right) \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right](a(1+\operatorname{Sin}[e+f x]))^{5/2}\right) \Big/ \left(8 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)-$$

$$\left(\left(20 c^3+66 c^2 d+60 c d^2+19 d^3\right)(a(1+\operatorname{Sin}[e+f x]))^{5/2} \operatorname{Sin}\left[\frac{3}{2}(e+f x)\right]\right) \Big/ \left(24 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)-$$

$$\left(\left(8 c^3+60 c^2 d+72 c d^2+25 d^3\right)(a(1+\operatorname{Sin}[e+f x]))^{5/2} \operatorname{Sin}\left[\frac{5}{2}(e+f x)\right]\right) \Big/ \left(80 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)+$$

$$\frac{d\left(12 c^2+30 c d+13 d^2\right)(a(1+\operatorname{Sin}[e+f x]))^{5/2} \operatorname{Sin}\left[\frac{7}{2}(e+f x)\right]}{112 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}+$$

$$\frac{d^2(6 c+5 d)(a(1+\operatorname{Sin}[e+f x]))^{5/2} \operatorname{Sin}\left[\frac{9}{2}(e+f x)\right]}{144 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}-$$

$$\frac{d^3(a(1+\operatorname{Sin}[e+f x]))^{5/2} \operatorname{Sin}\left[\frac{11}{2}(e+f x)\right]}{176 f\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}$$

Problem 537: Result more than twice size of optimal antiderivative.

$$\int (a + a \operatorname{Sin}[e + f x])^{5/2} (c + d \operatorname{Sin}[e + f x])^2 \, dx$$

Optimal (type 3, 202 leaves, 5 steps):

$$-\frac{64 a^3 \left(21 c^2 + 30 c d + 13 d^2\right) \operatorname{Cos}[e + f x]}{315 f \sqrt{a + a \operatorname{Sin}[e + f x]}} - \frac{16 a^2 \left(21 c^2 + 30 c d + 13 d^2\right) \operatorname{Cos}[e + f x] \sqrt{a + a \operatorname{Sin}[e + f x]}}{315 f} - \frac{2 a \left(21 c^2 + 30 c d + 13 d^2\right) \operatorname{Cos}[e + f x] (a + a \operatorname{Sin}[e + f x])^{3/2}}{105 f} - \frac{4 (9 c - d) d \operatorname{Cos}[e + f x] (a + a \operatorname{Sin}[e + f x])^{5/2}}{63 f} - \frac{2 d^2 \operatorname{Cos}[e + f x] (a + a \operatorname{Sin}[e + f x])^{7/2}}{9 a f}$$

Result (type 3, 649 leaves):

$$-\frac{\left(20 c^2+30 c d+13 d^2\right) \text{Cos}\left[\frac{1}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{4 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}-\frac{\left(5 c^2+11 c d+5 d^2\right) \text{Cos}\left[\frac{3}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{6 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}+\frac{\left(c^2+5 c d+3 d^2\right) \text{Cos}\left[\frac{5}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{10 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}+\frac{d (4 c+5 d) \text{Cos}\left[\frac{7}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{56 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}-\frac{d^2 \text{Cos}\left[\frac{9}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{72 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}+\frac{\left(20 c^2+30 c d+13 d^2\right) \text{Sin}\left[\frac{1}{2} (e+f x)\right] (a (1+\text{Sin}[e+f x]))^{5/2}}{4 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}-\frac{\left(5 c^2+11 c d+5 d^2\right) (a (1+\text{Sin}[e+f x]))^{5/2} \text{Sin}\left[\frac{3}{2} (e+f x)\right]}{6 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}-\frac{\left(c^2+5 c d+3 d^2\right) (a (1+\text{Sin}[e+f x]))^{5/2} \text{Sin}\left[\frac{5}{2} (e+f x)\right]}{10 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}+\frac{d (4 c+5 d) (a (1+\text{Sin}[e+f x]))^{5/2} \text{Sin}\left[\frac{7}{2} (e+f x)\right]}{56 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}+\frac{d^2 (a (1+\text{Sin}[e+f x]))^{5/2} \text{Sin}\left[\frac{9}{2} (e+f x)\right]}{72 f \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^5}$$

Problem 540: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a \text{Sin}[e+f x])^{5/2}}{c+d \text{Sin}[e+f x]} \, dx$$

Optimal (type 3, 142 leaves, 4 steps):

$$-\frac{2 a^{5/2} (c-d)^2 \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \text{Cos}[e+f x]}{\sqrt{c+d} \sqrt{a+a \text{Sin}[e+f x]}}\right]}{d^{5/2} \sqrt{c+d} f}+\frac{2 a^3 (3 c-7 d) \text{Cos}[e+f x]}{3 d^2 f \sqrt{a+a \text{Sin}[e+f x]}}-\frac{2 a^2 \text{Cos}[e+f x] \sqrt{a+a \text{Sin}[e+f x]}}{3 d f}$$

Result (type 3, 330 leaves):

$$\frac{1}{6\,d^{5/2}\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^5}$$
$$\left(a\,(1+\text{Sin}[e+f\,x])\right)^{5/2}\left(6\,(2\,c-5\,d)\,\sqrt{d}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,d^{3/2}\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]-\right.$$
$$\frac{1}{\sqrt{c+d}}3\,(c-d)^2\left(e+f\,x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right]+2\,\text{Log}\left[-\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right.\right.$$
$$\left.\left.\left(c+d+\sqrt{d}\,\sqrt{c+d}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\sqrt{d}\,\sqrt{c+d}\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right]\right)+\frac{1}{\sqrt{c+d}}$$
$$3\,(c-d)^2\left(e+f\,x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right]+2\,\text{Log}\left[(c+d)\,\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2+\right.\right.$$
$$\left.\left.\sqrt{d}\,\sqrt{c+d}\,\left(-1+2\,\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right)\right]\right)+$$
$$\left.6\,\sqrt{d}\,(-2\,c+5\,d)\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,d^{3/2}\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)$$

Problem 541: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^{5/2}}{(c+d\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 166 leaves, 4 steps):

$$\frac{a^{5/2}\,(c-d)\,(3\,c+5\,d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{d^{5/2}\,(c+d)^{3/2}\,f}-$$
$$\frac{a^3\,(3\,c+d)\,\text{Cos}[e+f\,x]}{d^2\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}+\frac{a^2\,(c-d)\,\text{Cos}[e+f\,x]\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}{d\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 3, 350 leaves):

$$\frac{1}{4 d^{5/2} f \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5}$$
$$\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{5/2}\left(-8\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\frac{1}{(c+d)^{3/2}}\right.$$
$$\left(3 c^2+2 c d-5 d^2\right)\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+2\,\text{Log}\left[-\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right.\right.$$
$$\left.\left.\left(c+d+\sqrt{d}\sqrt{c+d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{d}\sqrt{c+d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right]\right)+$$
$$\frac{1}{(c+d)^{3/2}}\left(-3 c^2-2 c d+5 d^2\right)\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+2\,\text{Log}\left[\right.\right.$$
$$\left.\left.(c+d)\,\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2+\sqrt{d}\sqrt{c+d}\left(-1+2\,\text{Tan}\left[\frac{1}{4}(e+f x)\right]+\text{Tan}\left[\frac{1}{4}(e+f x)\right]^2\right)\right]\right)+$$
$$\left.8\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-\frac{4(c-d)^2\sqrt{d}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{(c+d)\left(c+d\,\text{Sin}[e+f x]\right)}\right)$$

Problem 543: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^3}{\sqrt{a+a\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 178 leaves, 6 steps):

$$-\frac{\sqrt{2}(c-d)^3\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}-\frac{4 d\left(21 c^2-12 c d+7 d^2\right)\text{Cos}[e+f x]}{15 f\sqrt{a+a\,\text{Sin}[e+f x]}}-$$
$$\frac{2(9 c-d)\,d^2\,\text{Cos}[e+f x]\sqrt{a+a\,\text{Sin}[e+f x]}}{15 a f}-\frac{2 d\,\text{Cos}[e+f x]\left(c+d\,\text{Sin}[e+f x]\right)^2}{5 f\sqrt{a+a\,\text{Sin}[e+f x]}}$$

Result (type 3, 155 leaves):

$$-\left(\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right.\right.$$
$$\left((-60-60\,i)(-1)^{3/4}(c-d)^3\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]-\right.$$
$$2 d\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(-90 c^2+30 c d-29 d^2+\right.$$
$$\left.\left.\left.\left.3 d^2\,\text{Cos}[2(e+f x)]-2(15 c-d)\,d\,\text{Sin}[e+f x]\right)\right)\right)\Big/\left(30 f\sqrt{a\left(1+\text{Sin}[e+f x]\right)}\right)\right)$$

Problem 544: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^2}{\sqrt{a+a\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 123 leaves, 4 steps):

$$-\frac{\sqrt{2}\,(c-d)^2\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}-\frac{4\,(3 c-d)\,d\,\text{Cos}[e+f x]}{3 f\,\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{2 d^2\,\text{Cos}[e+f x]\,\sqrt{a+a\,\text{Sin}[e+f x]}}{3 a f}$$

Result (type 3, 125 leaves):

$$-\left(\left(2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left((-3-3\,i)\,(-1)^{3/4}\,(c-d)^2\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]+d\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)(6 c-d+d\,\text{Sin}[e+f x])\right)\right)\Big/\left(3 f\sqrt{a\,(1+\text{Sin}[e+f x])}\right)\right)$$

Problem 545: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{c+d\,\text{Sin}[e+f x]}{\sqrt{a+a\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 79 leaves, 3 steps):

$$-\frac{\sqrt{2}\,(c-d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}-\frac{2 d\,\text{Cos}[e+f x]}{f\,\sqrt{a+a\,\text{Sin}[e+f x]}}$$

Result (type 3, 106 leaves):

$$\left(2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left((1+i)\,(-1)^{3/4}\,(c-d)\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]+d\left(-\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\Big/\left(f\sqrt{a\,(1+\text{Sin}[e+f x])}\right)$$

Problem 546: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\sqrt{a+a\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 47 leaves, 2 steps):

$$-\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}$$

Result (type 3, 73 leaves):

$$\left((2+2\,i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f\,x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big/\left(f\sqrt{a\,(1+\text{Sin}[e+f\,x])}\right)$$

Problem 547: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\;(c+d\,\text{Sin}[e+f\,x])}\,dx$$

Optimal (type 3, 123 leaves, 5 steps):

$$-\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)\,f}+\frac{2\sqrt{d}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)\,\sqrt{c+d}\,f}$$

Result (type 3, 215 leaves):

$$\left(\left((2+2\,i)\,(-1)^{3/4}\sqrt{c+d}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f\,x)\right]\right)\right]+\sqrt{d}\left(\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f\,x)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right]-\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f\,x)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right]\right)\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big/\left((c-d)\sqrt{c+d}\,f\sqrt{a\,(1+\text{Sin}[e+f\,x])}\right)$$

Problem 548: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\;(c+d\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 3, 175 leaves, 6 steps):

$$-\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)^2\,f}+\frac{\sqrt{d}\,(3\,c+d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)^2\,(c+d)^{3/2}\,f}+\frac{d\,\text{Cos}[e+f\,x]}{(c^2-d^2)\,f\sqrt{a+a\,\text{Sin}[e+f\,x]}\;(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 3, 324 leaves):

$$\frac{1}{4\,(c-d)^2 f\sqrt{a\,(1+\text{Sin}[e+f\,x])}}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$
$$\left((8+8\,\mathrm{i})\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]\right)\right]+\right.$$
$$\frac{1}{(c+d)^{3/2}}\sqrt{d}\,(3\,c+d)\left(e+f\,x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right]+\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right]\right)-$$
$$\frac{1}{(c+d)^{3/2}}\sqrt{d}\,(3\,c+d)\left(e+f\,x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\right]+\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}\,(e+f\,x)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right]\right)+$$
$$\left.\frac{4\,(c-d)\,d\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}{(c+d)\,(c+d\,\text{Sin}[e+f\,x])}\right)$$

Problem 549: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 247 leaves, 7 steps):

$$-\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)^3 f}+\frac{\sqrt{d}\,(15\,c^2+10\,c\,d+7\,d^2)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{4\,\sqrt{a}\,(c-d)^3\,(c+d)^{5/2} f}+$$
$$\frac{d\,\text{Cos}[e+f\,x]}{2\,(c^2-d^2)\,f\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^2}+$$
$$\frac{d\,(7\,c+d)\,\text{Cos}[e+f\,x]}{4\,(c^2-d^2)^2 f\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 3, 414 leaves):

$$
\begin{aligned}
&\frac{1}{16\, f \sqrt{a \left(1+\text{Sin}[e+f x]\right)}} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \\
&\left(\frac{1}{(c-d)^3} (32+32\, i) (-1)^{3/4} \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\text{Tan}\left[\frac{1}{4} (e+f x)\right]\right)\right]+\right. \\
&\quad \left(\sqrt{d} \left(15 c^2+10 c d+7 d^2\right) \left(e+f x-2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+\right.\right. \\
&\qquad \left.\left. 2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}+\sqrt{d} \text{ Cos}\left[\frac{1}{2} (e+f x)\right]-\sqrt{d} \text{ Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right)\right) \Big/ \\
&\quad \left(\left(c-d\right)^3 (c+d)^{5/2}\right)+\left(\sqrt{d} \left(15 c^2+10 c d+7 d^2\right) \left(e+f x-2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+\right.\right. \\
&\qquad \left.\left. 2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}-\sqrt{d} \text{ Cos}\left[\frac{1}{2} (e+f x)\right]+\sqrt{d} \text{ Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right)\right) \Big/ \\
&\quad \left(\left(-c+d\right)^3 (c+d)^{5/2}\right)+\frac{8 d \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)}{(c-d) (c+d) \left(c+d \text{ Sin}[e+f x]\right)^2}+ \\
&\quad \left.\frac{4 d (7 c+d) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)}{(c-d)^2 (c+d)^2 \left(c+d \text{ Sin}[e+f x]\right)}\right)
\end{aligned}
$$

Problem 550: Result unnecessarily involves imaginary or complex numbers.

$$
\int \frac{\left(c+d \text{ Sin}[e+f x]\right)^3}{\left(a+a \text{ Sin}[e+f x]\right)^{3/2}}\, dx
$$

Optimal (type 3, 192 leaves, 6 steps):

$$
\begin{aligned}
&-\frac{(c-d)^2 (c+11 d) \text{ArcTanh}\left[\frac{\sqrt{a} \text{ Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{ Sin}[e+f x]}}\right]}{2 \sqrt{2}\, a^{3/2} f}+\frac{d \left(3 c^2-24 c d+13 d^2\right) \text{Cos}[e+f x]}{3 a f \sqrt{a+a \text{ Sin}[e+f x]}}+ \\
&\frac{(3 c-7 d) d^2 \text{Cos}[e+f x] \sqrt{a+a \text{ Sin}[e+f x]}}{6 a^2 f}-\frac{(c-d) \text{Cos}[e+f x] \left(c+d \text{ Sin}[e+f x]\right)^2}{2 f \left(a+a \text{ Sin}[e+f x]\right)^{3/2}}
\end{aligned}
$$

Result (type 3, 328 leaves):

$$\frac{1}{6\,f\,\left(a\,\left(1+\text{Sin}[e+f\,x]\right)\right)^{3/2}}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$
$$\left(6\,(c-d)^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-3\,(c-d)^3\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)+\right.$$
$$(3+3\,i)\,(-1)^{3/4}\,(c-d)^2\,(c+11\,d)\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)\,(-1)^{3/4}\,\left(-1+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2-$$
$$18\,(2\,c-d)\,d^2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2-$$
$$2\,d^3\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2+$$
$$18\,(2\,c-d)\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2-$$
$$\left.2\,d^3\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)$$

Problem 551: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^2}{(a+a\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 138 leaves, 4 steps):

$$-\frac{(c-d)\,(c+7\,d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,f}+$$
$$\frac{(c-5\,d)\,d\,\text{Cos}[e+f\,x]}{2\,a\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])}{2\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}}$$

Result (type 3, 239 leaves):

$$\frac{1}{2\,f\,\left(a\,\left(1+\text{Sin}[e+f\,x]\right)\right)^{3/2}}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$
$$\left(2\,(c-d)^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-(c-d)^2\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)+\right.$$
$$(1+i)\,(-1)^{3/4}\,(c^2+6\,c\,d-7\,d^2)\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)\,(-1)^{3/4}\,\left(-1+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2-$$
$$4\,d^2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2+$$
$$\left.4\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)$$

Problem 552: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{c + d\,\text{Sin}[e + f\,x]}{(a + a\,\text{Sin}[e + f\,x])^{3/2}}\,dx$$

Optimal (type 3, 87 leaves, 3 steps):

$$-\frac{(c + 3\,d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,f} - \frac{(c - d)\,\text{Cos}[e + f\,x]}{2\,f\,(a + a\,\text{Sin}[e + f\,x])^{3/2}}$$

Result (type 3, 150 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right]\right)\right.$$
$$\left(2\,(c - d)\,\text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right] + (-c + d)\,\left(\text{Cos}\left[\frac{1}{2}\,(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right]\right) + \right.$$
$$(1 + i)\,(-1)^{3/4}\,(c + 3\,d)\,\text{ArcTanh}\left[\left(\frac{1}{2} + \frac{i}{2}\right)\,(-1)^{3/4}\,\left(-1 + \text{Tan}\left[\frac{1}{4}\,(e + f\,x)\right]\right)\right]$$
$$\left.\left.\left(\text{Cos}\left[\frac{1}{2}\,(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right]\right)^2\right)\right) \Big/ \left(2\,f\,(a\,(1 + \text{Sin}[e + f\,x]))^{3/2}\right)$$

Problem 553: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a + a\,\text{Sin}[e + f\,x])^{3/2}}\,dx$$

Optimal (type 3, 77 leaves, 3 steps):

$$-\frac{\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,f} - \frac{\text{Cos}[e + f\,x]}{2\,f\,(a + a\,\text{Sin}[e + f\,x])^{3/2}}$$

Result (type 3, 108 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right]\right)\,\left(-\text{Cos}\left[\frac{1}{2}\,(e + f\,x)\right] + \text{Sin}\left[\frac{1}{2}\,(e + f\,x)\right] + \right.\right.$$
$$\left.\left.(1 + i)\,(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2} + \frac{i}{2}\right)\,(-1)^{3/4}\,\left(-1 + \text{Tan}\left[\frac{1}{4}\,(e + f\,x)\right]\right)\right]\,(1 + \text{Sin}[e + f\,x])\right)\right) \Big/$$
$$\left(2\,f\,(a\,(1 + \text{Sin}[e + f\,x]))^{3/2}\right)$$

Problem 554: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a + a\,\text{Sin}[e + f\,x])^{3/2}\,(c + d\,\text{Sin}[e + f\,x])}\,dx$$

Optimal (type 3, 164 leaves, 6 steps):

$$-\frac{(c-5d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{2\sqrt{2}\,a^{3/2}\,(c-d)^2\,f}-\frac{2\,d^{3/2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{a^{3/2}\,(c-d)^2\,\sqrt{c+d}\,f}-\frac{\text{Cos}[e+f x]}{2\,(c-d)\,f\,(a+a\,\text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 385 leaves):

$$\frac{1}{2\,(c-d)^2\,f\,(a\,(1+\text{Sin}[e+f x]))^{3/2}}\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)$$
$$\left(2\,(c-d)\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-(c-d)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)+\right.$$
$$(1+i)\,(-1)^{3/4}\,(c-5d)\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2-\frac{1}{\sqrt{c+d}}d^{3/2}\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right]\right)$$
$$\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2+\frac{1}{\sqrt{c+d}}d^{3/2}\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right]\right)$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)$$

Problem 555: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+a\,\text{Sin}[e+f x])^{3/2}\,(c+d\,\text{Sin}[e+f x])^2}\,dx$$

Optimal (type 3, 243 leaves, 7 steps):

$$-\frac{(c-9d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{2\sqrt{2}\,a^{3/2}\,(c-d)^3\,f}-\frac{d^{3/2}\,(5c+3d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f x]}}\right]}{a^{3/2}\,(c-d)^3\,(c+d)^{3/2}\,f}-$$
$$\frac{\text{Cos}[e+f x]}{2\,(c-d)\,f\,(a+a\,\text{Sin}[e+f x])^{3/2}\,(c+d\,\text{Sin}[e+f x])}-\frac{d\,(c+3d)\,\text{Cos}[e+f x]}{2\,a\,(c-d)^2\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}\,(c+d\,\text{Sin}[e+f x])}$$

Result (type 3, 491 leaves):

$$\frac{1}{4 f \left(a \left(1+\text{Sin}[e+f x]\right)\right)^{3/2}} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)$$

$$\left(\frac{4 \,\text{Sin}\left[\frac{1}{2} (e+f x)\right]}{(c-d)^2}-\frac{2 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)}{(c-d)^2}+\frac{1}{(c-d)^3}\right.$$

$$(2+2 i) (-1)^{3/4} (c-9 d)\, \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\text{Tan}\left[\frac{1}{4} (e+f x)\right]\right)\right]$$

$$\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2+\left(d^{3/2} (5 c+3 d) \left(e+f x-2 \,\text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+\right.\right.$$

$$\left.\left.2 \,\text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}+\sqrt{d}\, \text{Cos}\left[\frac{1}{2} (e+f x)\right]-\sqrt{d}\, \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right)\right)$$

$$\left.\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right) \Big/ \left((-c+d)^3 (c+d)^{3/2}\right)+$$

$$\left(d^{3/2} (5 c+3 d) \left(e+f x-2 \,\text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+\right.\right.$$

$$\left.\left.2 \,\text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}-\sqrt{d}\, \text{Cos}\left[\frac{1}{2} (e+f x)\right]+\sqrt{d}\, \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right)\right)$$

$$\left.\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right) \Big/ \left((c-d)^3 (c+d)^{3/2}\right)-$$

$$\left(4 d^2 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right) \Big/$$

$$\left.\left((c-d)^2 (c+d) \left(c+d \,\text{Sin}[e+f x]\right)\right)\right)$$

Problem 556: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\left(a+a \,\text{Sin}[e+f x]\right)^{3/2} \left(c+d \,\text{Sin}[e+f x]\right)^3} \, dx$$

Optimal (type 3, 318 leaves, 8 steps):

$$-\frac{(c-13 d)\, \text{ArcTanh}\left[\frac{\sqrt{a}\, \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \,\text{Sin}[e+f x]}}\right]}{2 \sqrt{2}\, a^{3/2} (c-d)^4 f}-\frac{d^{3/2} \left(35 c^2+42 c d+19 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d}\, \text{Cos}[e+f x]}{\sqrt{c+d} \sqrt{a+a \,\text{Sin}[e+f x]}}\right]}{4 a^{3/2} (c-d)^4 (c+d)^{5/2} f}-$$

$$\frac{\text{Cos}[e+f x]}{2 (c-d) f \left(a+a \,\text{Sin}[e+f x]\right)^{3/2} \left(c+d \,\text{Sin}[e+f x]\right)^2}-$$

$$\frac{d (c+2 d)\, \text{Cos}[e+f x]}{2 a (c-d)^2 (c+d) f \sqrt{a+a \,\text{Sin}[e+f x]} \left(c+d \,\text{Sin}[e+f x]\right)^2}-$$

$$\frac{d (2 c+d) (c+7 d)\, \text{Cos}[e+f x]}{4 a (c-d)^3 (c+d)^2 f \sqrt{a+a \,\text{Sin}[e+f x]} \left(c+d \,\text{Sin}[e+f x]\right)}$$

Result (type 3, 801 leaves):

$$\frac{\text{Sin}\left[\frac{1}{2}(e+fx)\right]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{(c-d)^3 f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}}-$$

$$\frac{\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^2}{2\,(c-d)^3 f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}}+\Bigg((1+i)\,(c-13\,d)$$

$$\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\,\text{Sec}\left[\frac{1}{4}(e+fx)\right]\left(\text{Cos}\left[\frac{1}{4}(e+fx)\right]-\text{Sin}\left[\frac{1}{4}(e+fx)\right]\right)\right]$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\Bigg)\Big/$$

$$\Big(\left(2\,(-1)^{1/4}c^4-8\,(-1)^{1/4}c^3 d+12\,(-1)^{1/4}c^2 d^2-8\,(-1)^{1/4}c\,d^3+2\,(-1)^{1/4}d^4\right)$$

$$f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}\Big)-$$

$$\Bigg(d^{3/2}\,(35\,c^2+42\,c\,d+19\,d^2)\left(e+fx-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\right]+\right.$$

$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right]\right)$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\Bigg)\Big/\left(16\,(c-d)^4\,(c+d)^{5/2} f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}\right)+$$

$$\Bigg(d^{3/2}\,(35\,c^2+42\,c\,d+19\,d^2)\left(e+fx-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\right]+\right.$$

$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right]\right)$$

$$\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\Bigg)\Big/\left(16\,(c-d)^4\,(c+d)^{5/2} f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\left(-d^2\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+d^2\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/$$

$$\left(2\,(c-d)^2\,(c+d)\,f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}\,(c+d\,\text{Sin}[e+fx])^2\right)+$$

$$\Bigg(\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\Bigg(-11\,c\,d^2\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]-$$

$$5\,d^3\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+11\,c\,d^2\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]+5\,d^3\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\Bigg)\Bigg)\Big/$$

$$\left(4\,(c-d)^3\,(c+d)^2 f\,(a\,(1+\text{Sin}[e+fx]))^{3/2}\,(c+d\,\text{Sin}[e+fx])\right)$$

Problem 557: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+fx])^3}{(a+a\,\text{Sin}[e+fx])^{5/2}}\,dx$$

Optimal (type 3, 194 leaves, 6 steps):

$$-\frac{3\,(c-d)\,\left(c^2+6\,c\,d+25\,d^2\right)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,f}-\frac{(c-d)^2\,(3\,c+13\,d)\,\text{Cos}[e+f\,x]}{16\,a\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}}+$$
$$\frac{(c-9\,d)\,d^2\,\text{Cos}[e+f\,x]}{4\,a^2\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^2}{4\,f\,(a+a\,\text{Sin}[e+f\,x])^{5/2}}$$

Result (type 3, 400 leaves):

$$\frac{1}{32\,f\,(a\,(1+\text{Sin}[e+f\,x]))^{5/2}}$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,\left(-11\,c^3\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+9\,c^2\,d\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\right.$$
$$15\,c\,d^2\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-45\,d^3\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-3\,c^3\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]-$$
$$15\,c^2\,d\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]+39\,c\,d^2\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]-69\,d^3\,\text{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$16\,d^3\,\text{Cos}\left[\frac{5}{2}\,(e+f\,x)\right]+11\,c^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-9\,c^2\,d\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-$$
$$15\,c\,d^2\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+45\,d^3\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+$$
$$(6+6\,i)\,(-1)^{3/4}\,\left(c^3+5\,c^2\,d+19\,c\,d^2-25\,d^3\right)\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)\,(-1)^{3/4}\,\left(-1+\text{Tan}\left[\frac{1}{4}\,(e+f\,x)\right]\right)\right]$$
$$\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^4-3\,c^3\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-15\,c^2\,d\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]+$$
$$\left.39\,c\,d^2\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-69\,d^3\,\text{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]-16\,d^3\,\text{Sin}\left[\frac{5}{2}\,(e+f\,x)\right]\right)$$

Problem 558: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^2}{(a+a\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 147 leaves, 4 steps):

$$-\frac{\left(3\,c^2+10\,c\,d+19\,d^2\right)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,f}-$$
$$\frac{3\,(c-d)\,(c+3\,d)\,\text{Cos}[e+f\,x]}{16\,a\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])}{4\,f\,(a+a\,\text{Sin}[e+f\,x])^{5/2}}$$

Result (type 3, 252 leaves):

$$\frac{1}{16 f \left(a \left(1+\text{Sin}[e+f x]\right)\right)^{5/2}} \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \left(8 (c-d)^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]-4 (c-d)^2 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)+2 \left(3 c^2+10 c d-13 d^2\right) \text{Sin}\left[\frac{1}{2}(e+f x)\right] \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2-(c-d) (3 c+13 d) \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+(1+i) (-1)^{3/4} \left(3 c^2+10 c d+19 d^2\right) \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right] \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)$$

Problem 559: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{c+d \text{Sin}[e+f x]}{\left(a+a \text{Sin}[e+f x]\right)^{5/2}} \, dx$$

Optimal (type 3, 126 leaves, 4 steps):

$$-\frac{(3 c+5 d) \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{Sin}[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} f}-\frac{(c-d) \text{Cos}[e+f x]}{4 f \left(a+a \text{Sin}[e+f x]\right)^{5/2}}-\frac{(3 c+5 d) \text{Cos}[e+f x]}{16 a f \left(a+a \text{Sin}[e+f x]\right)^{3/2}}$$

Result (type 3, 227 leaves):

$$\frac{1}{16 f \left(a \left(1+\text{Sin}[e+f x]\right)\right)^{5/2}} \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \left(8 (c-d) \text{Sin}\left[\frac{1}{2}(e+f x)\right]+4 (-c+d) \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)+2 (3 c+5 d) \text{Sin}\left[\frac{1}{2}(e+f x)\right] \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2-(3 c+5 d) \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3+(1+i) (-1)^{3/4} (3 c+5 d) \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\text{Tan}\left[\frac{1}{4}(e+f x)\right]\right)\right] \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)$$

Problem 560: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\left(a+a \text{Sin}[e+f x]\right)^{5/2}} \, dx$$

Optimal (type 3, 107 leaves, 4 steps):

$$-\frac{3 \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{Sin}[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} f}-\frac{\text{Cos}[e+f x]}{4 f \left(a+a \text{Sin}[e+f x]\right)^{5/2}}-\frac{3 \text{Cos}[e+f x]}{16 a f \left(a+a \text{Sin}[e+f x]\right)^{3/2}}$$

Result (type 3, 196 leaves):

$$\frac{1}{16 f \left(a \left(1+\sin[e+f x]\right)\right)^{5/2}} \left(\cos\left[\frac{1}{2}(e+f x)\right]+\sin\left[\frac{1}{2}(e+f x)\right]\right) \left(8 \sin\left[\frac{1}{2}(e+f x)\right]-4 \left(\cos\left[\frac{1}{2}(e+f x)\right]+\sin\left[\frac{1}{2}(e+f x)\right]\right)+6 \sin\left[\frac{1}{2}(e+f x)\right] \left(\cos\left[\frac{1}{2}(e+f x)\right]+\sin\left[\frac{1}{2}(e+f x)\right]\right)^2-3 \left(\cos\left[\frac{1}{2}(e+f x)\right]+\sin\left[\frac{1}{2}(e+f x)\right]\right)^3+(3+3 i) (-1)^{3/4} \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\tan\left[\frac{1}{4}(e+f x)\right]\right)\right] \left(\cos\left[\frac{1}{2}(e+f x)\right]+\sin\left[\frac{1}{2}(e+f x)\right]\right)^4\right)$$

Problem 561: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+a \sin[e+f x])^{5/2} (c+d \sin[e+f x])} \, dx$$

Optimal (type 3, 218 leaves, 7 steps):

$$-\frac{\left(3 c^2-14 c d+43 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{a} \cos[e+f x]}{\sqrt{2} \sqrt{a+a \sin[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} (c-d)^3 f}+\frac{2 d^{5/2} \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \cos[e+f x]}{\sqrt{c+d} \sqrt{a+a \sin[e+f x]}}\right]}{a^{5/2} (c-d)^3 \sqrt{c+d} f}-\frac{\cos[e+f x]}{4 (c-d) f (a+a \sin[e+f x])^{5/2}}-\frac{(3 c-11 d) \cos[e+f x]}{16 a (c-d)^2 f (a+a \sin[e+f x])^{3/2}}$$

Result (type 3, 501 leaves):

$$\frac{1}{16 f \left(a \left(1+\text{Sin}[e+f x]\right)\right)^{5/2}} \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) \left(\frac{8 \text{Sin}\left[\frac{1}{2} (e+f x)\right]}{c-d}-\frac{4 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)}{c-d}+\frac{1}{(c-d)^2} 2 (3 c-11 d) \text{Sin}\left[\frac{1}{2} (e+f x)\right] \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2+\frac{(-3 c+11 d) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^3}{(c-d)^2}+\frac{1}{(c-d)^3} (1+i) (-1)^{3/4} \left(3 c^2-14 c d+43 d^2\right) \text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right) (-1)^{3/4} \left(-1+\text{Tan}\left[\frac{1}{4} (e+f x)\right]\right)\right] \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4+\frac{1}{(c-d)^3 \sqrt{c+d}} 8 d^{5/2} \left(e+f x-2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}+\sqrt{d} \text{Cos}\left[\frac{1}{2} (e+f x)\right]-\sqrt{d} \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4+\left(8 d^{5/2} \left(e+f x-2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2\right]+2 \text{Log}\left[\text{Sec}\left[\frac{1}{4} (e+f x)\right]^2 \left(\sqrt{c+d}-\sqrt{d} \text{Cos}\left[\frac{1}{2} (e+f x)\right]+\sqrt{d} \text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)\right]\right) \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^4\right)\Big/ \left((-c+d)^3 \sqrt{c+d}\right)\right)$$

Problem 562: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+a \text{Sin}[e+f x])^{5/2} (c+d \text{Sin}[e+f x])^2} \, dx$$

Optimal (type 3, 313 leaves, 8 steps):

$$-\frac{\left(3 c^2-22 c d+115 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{a} \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{Sin}[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} (c-d)^4 f}+\frac{d^{5/2} (7 c+5 d) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{d} \text{Cos}[e+f x]}{\sqrt{c+d} \sqrt{a+a \text{Sin}[e+f x]}}\right]}{a^{5/2} (c-d)^4 (c+d)^{3/2} f}-\frac{\text{Cos}[e+f x]}{4 (c-d) f (a+a \text{Sin}[e+f x])^{5/2} (c+d \text{Sin}[e+f x])}-\frac{3 (c-5 d) \text{Cos}[e+f x]}{16 a (c-d)^2 f (a+a \text{Sin}[e+f x])^{3/2} (c+d \text{Sin}[e+f x])}-\frac{(c-7 d) d (3 c+5 d) \text{Cos}[e+f x]}{16 a^2 (c-d)^3 (c+d) f \sqrt{a+a \text{Sin}[e+f x]} (c+d \text{Sin}[e+f x])}$$

Result (type 3, 800 leaves):

$$\frac{\text{Sin}\left[\frac{1}{2}(e+fx)\right]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{2(c-d)^2 f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}}-\frac{\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^2}{4(c-d)^2 f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}}+\frac{(-3c+19d)\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4}{16(c-d)^3 f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}}+$$

$$\left((1+i)\left(3c^2-22cd+115d^2\right)\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\text{Sec}\left[\frac{1}{4}(e+fx)\right]\left(\text{Cos}\left[\frac{1}{4}(e+fx)\right]-\text{Sin}\left[\frac{1}{4}(e+fx)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\right)\Big/$$

$$\left(\left(16(-1)^{1/4}c^4-64(-1)^{1/4}c^3d+96(-1)^{1/4}c^2d^2-64(-1)^{1/4}cd^3+16(-1)^{1/4}d^4\right)f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}\right)+\left(d^{5/2}(7c+5d)\left(e+fx-2\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\right]+2\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right]\right)\right.$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\right)\Big/\left(4(c-d)^4(c+d)^{3/2}f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}\right)-$$

$$\left(d^{5/2}(7c+5d)\left(e+fx-2\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\right]+2\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+fx)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right]\right)\right.$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\right)\Big/\left(4(c-d)^4(c+d)^{3/2}f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3\left(3c\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]-19d\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/\left(8(c-d)^3 f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+fx)\right]+\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\left(d^3\text{Cos}\left[\frac{1}{2}(e+fx)\right]-d^3\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)\right)\Big/\left((c-d)^3(c+d)f\left(a\left(1+\text{Sin}[e+fx]\right)\right)^{5/2}\left(c+d\,\text{Sin}[e+fx]\right)\right)$$

Problem 563: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+a\,\text{Sin}[e+fx]\right)^{5/2}\left(c+d\,\text{Sin}[e+fx]\right)^3}\,dx$$

Optimal (type 3, 400 leaves, 9 steps):

$$-\frac{3\left(c^2-10\,c\,d+73\,d^2\right)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,(c-d)^5\,f}+\frac{3\,d^{5/2}\left(21\,c^2+30\,c\,d+13\,d^2\right)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{c+d}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}\right]}{4\,a^{5/2}\,(c-d)^5\,(c+d)^{5/2}\,f}-\frac{\text{Cos}[e+f\,x]}{4\,(c-d)\,f\,(a+a\,\text{Sin}[e+f\,x])^{5/2}\,(c+d\,\text{Sin}[e+f\,x])^2}-\frac{(3\,c-19\,d)\,\text{Cos}[e+f\,x]}{16\,a\,(c-d)^2\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}\,(c+d\,\text{Sin}[e+f\,x])^2}-\frac{d\left(3\,c^2-20\,c\,d-31\,d^2\right)\,\text{Cos}[e+f\,x]}{16\,a^2\,(c-d)^3\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^2}-\frac{3\,d\,(c+3\,d)\left(c^2-10\,c\,d-7\,d^2\right)\,\text{Cos}[e+f\,x]}{16\,a^2\,(c-d)^4\,(c+d)^2\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 3, 958 leaves) :

$$\frac{\text{Sin}\left[\frac{1}{2}(e+f x)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{2(c-d)^3 f\,(a(1+\text{Sin}[e+f x]))^{5/2}}-$$

$$\frac{\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}{4(c-d)^3 f\,(a(1+\text{Sin}[e+f x]))^{5/2}}-\frac{3(c-9d)\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}{16(c-d)^4 f\,(a(1+\text{Sin}[e+f x]))^{5/2}}+$$

$$\left((3+3\,i)\left(c^2-10\,c\,d+73\,d^2\right)\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\,\text{Sec}\left[\frac{1}{4}(e+f x)\right]\right.\right.$$
$$\left.\left.\left(\text{Cos}\left[\frac{1}{4}(e+f x)\right]-\text{Sin}\left[\frac{1}{4}(e+f x)\right]\right)\right]\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)\Big/$$
$$\left(\left(16(-1)^{1/4}c^5-80(-1)^{1/4}c^4 d+160(-1)^{1/4}c^3 d^2-160(-1)^{1/4}c^2 d^3+\right.\right.$$
$$\left.\left.80(-1)^{1/4}c\,d^4-16(-1)^{1/4}d^5\right)f\,(a(1+\text{Sin}[e+f x]))^{5/2}\right)+$$

$$\left(3\,d^{5/2}\left(21\,c^2+30\,c\,d+13\,d^2\right)\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\left(\sqrt{c+d}+\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right]\right)$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)\Big/\left(16(c-d)^5(c+d)^{5/2} f\,(a(1+\text{Sin}[e+f x]))^{5/2}\right)+$$

$$\left(3\,d^{5/2}\left(21\,c^2+30\,c\,d+13\,d^2\right)\left(e+f x-2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\right]+\right.\right.$$
$$\left.2\,\text{Log}\left[\text{Sec}\left[\frac{1}{4}(e+f x)\right]^2\left(\sqrt{c+d}-\sqrt{d}\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\sqrt{d}\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right]\right)$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right)\Big/\left(16(-c+d)^5(c+d)^{5/2} f\,(a(1+\text{Sin}[e+f x]))^{5/2}\right)+$$

$$\left(3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3\left(c\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-9\,d\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$
$$\left(8(c-d)^4 f\,(a(1+\text{Sin}[e+f x]))^{5/2}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(d^3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-d^3\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$
$$\left(2(c-d)^3(c+d) f\,(a(1+\text{Sin}[e+f x]))^{5/2}(c+d\,\text{Sin}[e+f x])^2\right)+$$

$$\left(3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\left(5\,c\,d^3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\right.\right.$$
$$\left.\left.3\,d^4\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-5\,c\,d^3\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-3\,d^4\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$
$$\left(4(c-d)^4(c+d)^2 f\,(a(1+\text{Sin}[e+f x]))^{5/2}(c+d\,\text{Sin}[e+f x])\right)$$

Problem 564: Result unnecessarily involves imaginary or complex numbers.

$$\int\sqrt{a+a\,\text{Sin}[e+f x]}\,(c+d\,\text{Sin}[e+f x])^{5/2}\,dx$$

Optimal (type 3, 203 leaves, 5 steps):

$$-\frac{5\sqrt{a}\,(c+d)^3\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f x]}{\sqrt{a+a\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{8\sqrt{d}\,f}-\frac{5\,a\,(c+d)^2\,\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{8\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{5\,a\,(c+d)\,\text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^{3/2}}{12\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{a\,\text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^{5/2}}{3\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}}$$

Result (type 3, 391 leaves):

$$-\frac{1}{48\,f\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f x]}}\sqrt{a\,(1+\text{Sin}[e+f x])}\,\left(\frac{1}{\sqrt{d}}15\,(c+d)^3\left(\text{Log}\left[\frac{1}{\sqrt{d}}e^{-i e}\left(2\,(-1)^{1/4}c-2\,(-1)^{3/4}d\,e^{i(e+f x)}+2\sqrt{d}\sqrt{2\,c\,e^{i(e+f x)}-i\,d\left(-1+e^{2 i (e+f x)}\right)}\right)\right]-\text{Log}\left[\frac{1}{\sqrt{d}}2\,e^{\frac{1}{2}i(e-2 f x)}\left((-1)^{3/4}d+(-1)^{1/4}c\,e^{i(e+f x)}+i\sqrt{d}\sqrt{2\,c\,e^{i(e+f x)}-i\,d\left(-1+e^{2 i (e+f x)}\right)}\right)f\right]\right)\left(i\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{(\text{Cos}[e+f x]+i\,\text{Sin}[e+f x])\,(c+d\,\text{Sin}[e+f x])}+2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)(c+d\,\text{Sin}[e+f x])\left(33\,c^2+40\,c\,d+19\,d^2-4\,d^2\,\text{Cos}[2\,(e+f x)]+2\,d\,(13\,c+5\,d)\,\text{Sin}[e+f x]\right)\right)$$

Problem 565: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\sqrt{a+a\,\text{Sin}[e+f x]}\,(c+d\,\text{Sin}[e+f x])^{3/2}\,dx$$

Optimal (type 3, 156 leaves, 4 steps):

$$-\frac{3\sqrt{a}\,(c+d)^2\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f x]}{\sqrt{a+a\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{4\sqrt{d}\,f}-\frac{3\,a\,(c+d)\,\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{4\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{a\,\text{Cos}[e+f x]\,(c+d\,\text{Sin}[e+f x])^{3/2}}{2\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}}$$

Result (type 3, 365 leaves):

$$\frac{1}{8 f \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \sqrt{c+d \text{Sin}[e+f x]}} \sqrt{a (1+\text{Sin}[e+f x])} \left(-\frac{1}{\sqrt{d}} 3 i (c+d)^2 \left(\text{Log}\left[\frac{1}{\sqrt{d}} e^{-i e} \left(2 (-1)^{1/4} c-2 (-1)^{3/4} d e^{i (e+f x)}+2 \sqrt{d} \sqrt{2 c e^{i (e+f x)}-i d \left(-1+e^{2 i (e+f x)}\right)}\right)\right]-\text{Log}\left[\frac{1}{\sqrt{d}} 2 e^{\frac{1}{2} i (e-2 f x)} \left(\left((-1)^{3/4} d+(-1)^{1/4} c e^{i (e+f x)}+i \sqrt{d} \sqrt{2 c e^{i (e+f x)}-i d \left(-1+e^{2 i (e+f x)}\right)}\right) f\right]\right) \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-i \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \sqrt{(\text{Cos}[e+f x]+i \text{Sin}[e+f x]) (c+d \text{Sin}[e+f x])}-2 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) (c+d \text{Sin}[e+f x]) (5 c+3 d+2 d \text{Sin}[e+f x])\right)$$

Problem 566: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \sqrt{a+a \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]} \, dx$$

Optimal (type 3, 105 leaves, 3 steps):

$$-\frac{\sqrt{a} (c+d) \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{d} \text{Cos}[e+f x]}{\sqrt{a+a \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}\right]}{\sqrt{d} f}-\frac{a \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{f \sqrt{a+a \text{Sin}[e+f x]}}$$

Result (type 3, 350 leaves):

$$\left(\sqrt{a (1+\text{Sin}[e+f x])} \left(-\frac{2 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) (c+d \text{Sin}[e+f x])}{f}-\frac{1}{\sqrt{d} f} i (c+d) \left(\text{Log}\left[\frac{1}{\sqrt{d}} e^{-i e} \left(2 (-1)^{1/4} c-2 (-1)^{3/4} d e^{i (e+f x)}+2 \sqrt{d} \sqrt{2 c e^{i (e+f x)}-i d \left(-1+e^{2 i (e+f x)}\right)}\right)\right]-\text{Log}\left[\frac{1}{\sqrt{d}} 2 e^{\frac{1}{2} i (e-2 f x)} \left(\left((-1)^{3/4} d+(-1)^{1/4} c e^{i (e+f x)}+i \sqrt{d} \sqrt{2 c e^{i (e+f x)}-i d \left(-1+e^{2 i (e+f x)}\right)}\right) f\right]\right) \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-i \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \sqrt{(\text{Cos}[e+f x]+i \text{Sin}[e+f x]) (c+d \text{Sin}[e+f x])}\right)\right) \Big/ \left(2 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right) \sqrt{c+d \text{Sin}[e+f x]}\right)$$

Problem 567: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+a\,\text{Sin}[e+f\,x]}}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 61 leaves, 2 steps):

$$-\frac{2\sqrt{a}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{\sqrt{d}\,f}$$

Result (type 3, 305 leaves):

$$-\Bigg(\Bigg(\dot{\imath}\,\Bigg(\text{Log}\Big[\frac{1}{\sqrt{d}}\,e^{-\dot{\imath}\,e}\,\Big(2\,(-1)^{1/4}\,c-2\,(-1)^{3/4}\,d\,e^{\dot{\imath}\,(e+f\,x)}+2\,\sqrt{d}\,\sqrt{2\,c\,e^{\dot{\imath}\,(e+f\,x)}-\dot{\imath}\,d\,\left(-1+e^{2\,\dot{\imath}\,(e+f\,x)}\right)}\Big)\Big]-\text{Log}\Big[-\frac{1}{\sqrt{d}}\,(1+\dot{\imath})\,e^{\frac{1}{2}\,\dot{\imath}\,(e-2\,f\,x)}\,\Big(-(-1)^{1/4}\,d+(-1)^{3/4}\,c\,e^{\dot{\imath}\,(e+f\,x)}-\sqrt{d}\,\sqrt{2\,c\,e^{\dot{\imath}\,(e+f\,x)}-\dot{\imath}\,d\,\left(-1+e^{2\,\dot{\imath}\,(e+f\,x)}\right)}\Big)\,f\Big]\Bigg)\left(\text{Cos}\Big[\frac{1}{2}\,(e+f\,x)\Big]-\dot{\imath}\,\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]\right)\sqrt{a\,\left(1+\text{Sin}[e+f\,x]\right)}\,\sqrt{\left(\text{Cos}[e+f\,x]+\dot{\imath}\,\text{Sin}[e+f\,x]\right)\,\left(c+d\,\text{Sin}[e+f\,x]\right)}\Bigg)\Bigg/\left(\sqrt{d}\,f\,\left(\text{Cos}\Big[\frac{1}{2}\,(e+f\,x)\Big]+\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)$$

Problem 574: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a+a\,\text{Sin}[e+f\,x]\right)^{3/2}}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 111 leaves, 4 steps):

$$\frac{a^{3/2}\,(c-3\,d)\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{d^{3/2}\,f}-\frac{a^2\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 301 leaves):

$$\frac{1}{2\,d^{3/2}\,f\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3}\left(a\,(1+\text{Sin}[e+f\,x])\right)^{3/2}\left(-2\,(c-3\,d)\,\text{ArcTan}\left[\frac{\sqrt{2}\,\sqrt{d}\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]-\right.$$

$$(c-3\,d)\,\text{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{d}\,\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]+$$

$$c\,\text{Log}\left[\sqrt{2}\,\sqrt{d}\,\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]+\sqrt{c+d\,\text{Sin}[e+f\,x]}\right]-$$

$$3\,d\,\text{Log}\left[\sqrt{2}\,\sqrt{d}\,\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]+\sqrt{c+d\,\text{Sin}[e+f\,x]}\right]-$$

$$\left.2\,\sqrt{d}\,\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}+2\,\sqrt{d}\,\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Problem 575: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^{3/2}}{(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 117 leaves, 4 steps):

$$-\frac{2\,a^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{d^{3/2}\,f}+\frac{2\,a^2\,(c-d)\,\text{Cos}[e+f\,x]}{d\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 3, 377 leaves):

$$\left((a\,(1+\mathrm{Sin}[e+f\,x]))^{3/2}\left(2\,c\,\sqrt{d}\,\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,d^{3/2}\,\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-2\,c\,\sqrt{d}\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+2\,d^{3/2}\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]+2\,(c+d)\,\mathrm{ArcTan}\left[\frac{\sqrt{2}\,\sqrt{d}\,\mathrm{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+(c+d)\,\mathrm{ArcTanh}\left[\frac{\sqrt{2}\,\sqrt{d}\,\mathrm{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}-c\,\mathrm{Log}\left[\sqrt{2}\,\sqrt{d}\,\mathrm{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]+\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}-d\,\mathrm{Log}\left[\sqrt{2}\,\sqrt{d}\,\mathrm{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]+\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\Big/\left(d^{3/2}\,(c+d)\,f\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^3\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)$$

Problem 588: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 249 leaves, 7 steps):

$$-\frac{\sqrt{d}\,(15\,c^2-10\,c\,d+7\,d^2)\,\mathrm{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\mathrm{Cos}[e+f\,x]}{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]}{4\,\sqrt{a}\,f}-\frac{\sqrt{2}\,(c-d)^{5/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\mathrm{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,f}-\frac{(7\,c-d)\,d\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{4\,f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}-\frac{d\,\mathrm{Cos}[e+f\,x]\,(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}{2\,f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 3, 1893 leaves):

$$\left(\left(\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\left(\frac{1}{4}\,d\,(-9\,c+2\,d)\,\mathrm{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{4}\,d^2\,\mathrm{Cos}\left[\frac{3}{2}\,(e+f\,x)\right]-\frac{1}{4}\,d\,(-9\,c+2\,d)\,\mathrm{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{4}\,d^2\,\mathrm{Sin}\left[\frac{3}{2}\,(e+f\,x)\right]\right)\right)\Big/\left(f\,\sqrt{a\,(1+\mathrm{Sin}[e+f\,x])}\right)+$$

$$\Bigg(\Bigg(\sqrt{2}\,(c-d)^{5/2}\,\text{Log}\Big[1+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big]-\sqrt{2}\,(c-d)^{5/2}\,\text{Log}\Big[c-d+2\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big]-\frac{1}{8}\,i\,\sqrt{d}\,(15 c^2-10 c d+7 d^2)\,\text{Log}\Big[\Big(2\Big(c-i\Big(d+(1+i)\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}\Big)+(-i c+d)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big)\Big)\Big/\Big(d^{3/2}\,(15 c^2-10 c d+7 d^2)\,\Big(i+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big)\Big)\Big]+\frac{1}{8}\,i\,\sqrt{d}\,(15 c^2-10 c d+7 d^2)\,\text{Log}\Big[\Big(2\Big(c+i d+(1+i)\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}+(i c+d)\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big)\Big)\Big/\Big(d^{3/2}\,(15 c^2-10 c d+7 d^2)\,\Big(-i+\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]\Big)\Big)\Big]\Bigg)\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\Bigg(\frac{c^3}{\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}-\frac{9 c^2 d}{8\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{7 c d^2}{4\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}-\frac{d^3}{8\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{15 c^2 d\,\text{Sin}[e+f x]}{8\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}-\frac{5 c d^2\,\text{Sin}[e+f x]}{4\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{7 d^3\,\text{Sin}[e+f x]}{8\Big(\text{Cos}\Big[\frac{1}{2}(e+f x)\Big]+\text{Sin}\Big[\frac{1}{2}(e+f x)\Big]\Big)\sqrt{c+d\,\text{Sin}[e+f x]}}\Bigg)\Bigg)\Big/$$

$$\left(f\sqrt{a\left(1+\text{Sin}[e+f x]\right)}\left(\frac{(c-d)^{5/2}\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\right.\right.$$

$$\left(\sqrt{2}\,(c-d)^{5/2}\left(\frac{1}{2}(-c+d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\,d\,\text{Cos}[e+f x]\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{c+d\,\text{Sin}[e+f x]}}+\right.\right.$$

$$\left.\left.\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\Big/$$

$$\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)-$$

$$\left(i\,d^2\left(15c^2-10c\,d+7d^2\right)^2\left(i+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right.$$

$$\left(\left(2\left(\frac{1}{2}(-i\,c+d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2-i\left(\frac{(1+i)\,d^{3/2}\,\text{Cos}[e+f x]\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{2}\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{1}{\sqrt{2}}\right.\right.\right.\right.$$

$$\left.\left.\left.\left.(1+i)\sqrt{d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\right)\right)\Big/$$

$$\left(d^{3/2}\left(15c^2-10c\,d+7d^2\right)\left(i+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big)-\left(\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\right.$$

$$\left(c-i\left(d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}\right)+(-i\,c+d)\right.$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\Bigg/\left(d^{3/2}\left(15 c^2-10 c d+7 d^2\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2\right)\right)\Bigg/$$

$$\left(16\left(c-\mathrm{i}\left(d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)+\right.\right.$$

$$\left.\left.\left(-\mathrm{i}\,c+d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)+\left(\mathrm{i}\,d^2\left(15 c^2-10 c d+7 d^2\right)^2\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right.$$

$$\left(\left(2\left(\frac{1}{2}\left(\mathrm{i}\,c+d\right)\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2+\frac{\left(1+\mathrm{i}\right)d^{3/2}\,\mathrm{Cos}[e+f x]\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}}{\sqrt{2}\sqrt{c+d\,\mathrm{Sin}[e+f x]}}+\right.\right.\right.$$

$$\left.\left.\frac{1}{\sqrt{2}}\left(1+\mathrm{i}\right)\sqrt{d}\left(\frac{1}{1+\mathrm{Cos}[e+f x]}\right)^{3/2}\mathrm{Sin}[e+f x]\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)\Bigg/$$

$$\left(d^{3/2}\left(15 c^2-10 c d+7 d^2\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)-\left(\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right.$$

$$\left(c+\mathrm{i}\,d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\left(\mathrm{i}\,c+d\right)\right.$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\Bigg/\left(d^{3/2}\left(15 c^2-10 c d+7 d^2\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2\right)\right)\Bigg/$$

$$\left(16\left(c+\mathrm{i}\,d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\right.\right.$$

$$\left.\left.\left.\left.\left(\mathrm{i}\,c+d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\right)\right)$$

Problem 589: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 3, 188 leaves, 6 steps):

$$-\frac{(3\,c-d)\,\sqrt{d}\,\mathrm{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\mathrm{Cos}[e+f\,x]}{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,f}-\frac{\sqrt{2}\,(c-d)^{3/2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\mathrm{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,f}-\frac{d\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 3, 1639 leaves):

$$\left(\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(-d\,\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+d\,\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/\left(f\,\sqrt{a\,(1+\mathrm{Sin}[e+f\,x])}\right)+$$

$$\left(\left(\sqrt{2}\,(c-d)^{3/2}\,\mathrm{Log}\left[1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]-\sqrt{2}\,(c-d)^{3/2}\right.\right.$$

$$\mathrm{Log}\left[c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+(-c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]+\frac{1}{2}$$

$$i\,\sqrt{d}\,(-3\,c+d)\,\left(\mathrm{Log}\left[\left(2\,i\,\left(i\,c+d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+\right.\right.\right.\right.$$

$$\left.\left.(c+i\,d)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big/\left(d^{3/2}\,(-3\,c+d)\,\left(i+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big]-$$

$$\mathrm{Log}\left[-\left(\left(2\,\left(c+i\,d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+(i\,c+d)\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\Big/\left(d^{3/2}\,(-3\,c+d)\,\left(-i+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right)\right]\Bigg)\Bigg)\left(\mathrm{Cos}\left[\frac{1}{2}\right.\right.$$

$$\left.\left.(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\frac{c^2}{\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}-\right.$$

$$\frac{c\,d}{2\left(\mathrm{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}+$$

$$\frac{d^2}{2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f x]}}+$$

$$\frac{3\,c\,d\,\text{Sin}[e+f x]}{2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f x]}}-$$

$$\left.\left.\frac{d^2\,\text{Sin}[e+f x]}{2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f x]}}\right)\right)\Big/$$

$$\left(f\sqrt{a\,(1+\text{Sin}[e+f x])}\,\left(\frac{(c-d)^{3/2}\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{\sqrt{2}\,\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\right.\right.$$

$$\left(\sqrt{2}\,(c-d)^{3/2}\left(\frac{1}{2}(-c+d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\,d\,\text{Cos}[e+f x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{c+d\,\text{Sin}[e+f x]}}+\right.\right.$$

$$\left.\left.\sqrt{c-d}\,\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\Big/$$

$$\left(c-d+2\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+$$

$$\frac{1}{2}\,\mathbb{i}\,\sqrt{d}\,(-3\,c+d)\left(-\left(\left(\mathbb{i}\,d^{3/2}\,(-3\,c+d)\,\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right.\right.\right.$$

$$\left(\left(2\,\mathbb{i}\left(\frac{1}{2}(c+\mathbb{i}\,d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{(1+\mathbb{i})\,d^{3/2}\,\text{Cos}[e+f x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{2}\,\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{1}{\sqrt{2}}\right.\right.\right.$$

$$\left.\left.(1+\mathbb{i})\,\sqrt{d}\,\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\Big/$$

$$\left(d^{3/2}\left(-3c+d\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)-\left(\mathrm{i}\,\mathrm{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right.$$

$$\left(\mathrm{i}\,c+d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}\sqrt{c+d\,\mathrm{Sin}[e+fx]}+\left(c+\mathrm{i}\,d\right)\right.$$

$$\left.\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)\Big/\left(d^{3/2}\left(-3c+d\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\left(\mathrm{i}\,c+d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}\sqrt{c+d\,\mathrm{Sin}[e+fx]}+\right.\right.$$

$$\left.\left.\left.\left(c+\mathrm{i}\,d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)\right)+\left(d^{3/2}\left(-3c+d\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)$$

$$\left(-\left(\left(2\left(\frac{1}{2}\left(\mathrm{i}\,c+d\right)\mathrm{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2+\frac{\left(1+\mathrm{i}\right)d^{3/2}\,\mathrm{Cos}[e+fx]\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}}{\sqrt{2}\sqrt{c+d\,\mathrm{Sin}[e+fx]}}+\right.\right.\right.\right.$$

$$\left.\left.\frac{1}{\sqrt{2}}\left(1+\mathrm{i}\right)\sqrt{d}\left(\frac{1}{1+\mathrm{Cos}[e+fx]}\right)^{3/2}\mathrm{Sin}[e+fx]\sqrt{c+d\,\mathrm{Sin}[e+fx]}\right)\right)\Big/$$

$$\left.\left(d^{3/2}\left(-3c+d\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)\right)+\left(\mathrm{Sec}\left[\frac{1}{2}\left(e+fx\right)\right]^2\right.$$

$$\left(c+\mathrm{i}\,d+\left(1+\mathrm{i}\right)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}\sqrt{c+d\,\mathrm{Sin}[e+fx]}+\right.$$

$$\left.\left.\left.\left.\left(\mathrm{i}\,c+d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)\right)\Big/\left(d^{3/2}\left(-3c+d\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(e+fx\right)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\left(c+i d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+\right.\right.$$
$$\left.\left.\left.\left.\left.(i c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\right)$$

Problem 590: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{a+a\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 141 leaves, 5 steps):

$$-\frac{2\sqrt{d}\,\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{d}\,\text{Cos}[e+f x]}{\sqrt{a+a\,\text{Sin}[e+f x]}\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}-\frac{\sqrt{2}\sqrt{c-d}\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\text{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\,\text{Sin}[e+f x]}\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,f}$$

Result (type 3, 1251 leaves):

$$\left(\left(\sqrt{2}\sqrt{c-d}\,\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\sqrt{2}\sqrt{c-d}\right.\right.$$
$$\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-$$
$$i\sqrt{d}\left(\text{Log}\left[\left(2\left(c-i d+(1-i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+\right.\right.\right.\right.$$
$$\left.\left.\left.(-i c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(d^{3/2}\left(i+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right]-$$
$$\text{Log}\left[\left(2\left(c+i d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+\right.\right.\right.$$
$$\left.\left.\left.\left.\left.(i c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(d^{3/2}\left(-i+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right]\right)\right)$$

$$\left.\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg/\left(f\,\sqrt{a\,(1+\text{Sin}[e+f\,x])}\,\left(\frac{\sqrt{c-d}\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{\sqrt{2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-\right.\right.$$

$$\left(\sqrt{2}\,\sqrt{c-d}\,\left(\frac{1}{2}\,(-c+d)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+\frac{\sqrt{c-d}\,d\,\text{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\right.\right.$$

$$\left.\left.\sqrt{c-d}\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\text{Sin}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\Bigg/$$

$$\left(c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)-$$

$$i\,\sqrt{d}\,\left(\left(d^{3/2}\,\left(i+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right.\right.\left(\left(2\,\left(\frac{1}{2}\,(-i\,c+d)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+\right.\right.\right.$$

$$\frac{(1-i)\,d^{3/2}\,\text{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}}{\sqrt{2}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\frac{1}{\sqrt{2}}\,(1-i)\,\sqrt{d}\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}$$

$$\left.\left.\text{Sin}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\Bigg/\left(d^{3/2}\,\left(i+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)-$$

$$\left(\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\left(c-i\,d+(1-i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+\right.\right.$$

$$\left.\left.\left.(-i\,c+d)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\Bigg/\left(d^{3/2}\,\left(i+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)\right)\Bigg/$$

$$\left(2\,\left(c-i\,d+(1-i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+\right.\right.$$

$$\left.\left.(-i c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)-$$

$$\left(d^{3/2}\left(-i+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\left(\left(2\left(\frac{1}{2}(i c+d)\,\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\right.\right.\right.\right.$$

$$\frac{(1+i)\,d^{3/2}\,\mathrm{Cos}[e+f x]\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}}{\sqrt{2}\sqrt{c+d\,\mathrm{Sin}[e+f x]}}+\frac{1}{\sqrt{2}}(1+i)\sqrt{d}\left(\frac{1}{1+\mathrm{Cos}[e+f x]}\right)^{3/2}$$

$$\left.\left.\mathrm{Sin}[e+f x]\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)\Big/\left(d^{3/2}\left(-i+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)-$$

$$\left(\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(c+i d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\right.\right.$$

$$\left.\left.\left.\left.(i c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(d^{3/2}\left(-i+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)\right)\right)\Big/$$

$$\left(2\left(c+i d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\right.\right.$$

$$\left.\left.\left.\left.\left.(i c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\right)$$

Problem 591: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+a\,\mathrm{Sin}[e+f x]}\sqrt{c+d\,\mathrm{Sin}[e+f x]}}\,dx$$

Optimal (type 3, 79 leaves, 2 steps):

$$-\frac{\sqrt{2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\mathrm{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\,\mathrm{Sin}[e+f x]}\sqrt{c+d\,\mathrm{Sin}[e+f x]}}\right]}{\sqrt{a}\sqrt{c-d}\,f}$$

Result (type 3, 283 leaves):

$$\left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)\Big/\left(f\sqrt{a\,(1+\text{Sin}[e+f x])}\sqrt{c+d\,\text{Sin}[e+f x]}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}-\left(-\frac{1}{2}(c-d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}(d+d\,\text{Cos}[e+f x]+c\,\text{Sin}[e+f x])}{\sqrt{c+d\,\text{Sin}[e+f x]}}\right)\Big/\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)$$

Problem 592: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+a\,\text{Sin}[e+f x]}\,(c+d\,\text{Sin}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 131 leaves, 4 steps):

$$-\frac{\sqrt{2}\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\text{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\,\text{Sin}[e+f x]}\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{\sqrt{a}\,(c-d)^{3/2}\,f}+\frac{2\,d\,\text{Cos}[e+f x]}{(c^2-d^2)\,f\sqrt{a+a\,\text{Sin}[e+f x]}\sqrt{c+d\,\text{Sin}[e+f x]}}$$

Result (type 3, 306 leaves):

$$\left(\frac{2\,d\,\mathrm{Cos}[e+f\,x]}{c+d}+\right.$$

$$\left(\mathrm{Log}\left[1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right]-\mathrm{Log}\left[c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,+\right.\right.$$

$$\left.\left.(-c+d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right]\right)\Bigg/\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{2+2\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}-\right.$$

$$\left(-\frac{1}{2}\,(c-d)\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+\frac{\sqrt{c-d}\,\left(\frac{1}{1+\mathrm{Cos}[e+f\,x]}\right)^{3/2}\,(d+d\,\mathrm{Cos}[e+f\,x]+c\,\mathrm{Sin}[e+f\,x])}{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right)\Bigg/$$

$$\left.\left.\left(c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,+(-c+d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\right)\Bigg/$$

$$\left((c-d)\,f\,\sqrt{a\,(1+\mathrm{Sin}[e+f\,x])}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)$$

Problem 593: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 3, 191 leaves, 5 steps):

$$-\frac{\sqrt{2}\,\mathrm{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\mathrm{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right]}{\sqrt{a}\,(c-d)^{5/2}\,f}+\frac{2\,d\,\mathrm{Cos}[e+f\,x]}{3\,(c^2-d^2)\,f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}+\frac{2\,d\,(5\,c+d)\,\mathrm{Cos}[e+f\,x]}{3\,(c^2-d^2)^2\,f\,\sqrt{a+a\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 3, 387 leaves):

$$\left(\left(2\,d\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\right.\right.$$

$$\left.\left(6\,c^2+c\,d-d^2+d\,(5\,c+d)\,\text{Sin}[e+f\,x]\right)\right)\Big/\left((c+d)^2\,(c+d\,\text{Sin}[e+f\,x])\right)+$$

$$\left(3\left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]-\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\sqrt{c+d\,\text{Sin}[e+f\,x]}+\right.\right.\right.$$

$$\left.\left.\left.(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]\right)\Big/\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2}{2+2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}(c-d)\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}(d+d\,\text{Cos}[e+f\,x]+c\,\text{Sin}[e+f\,x])}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\sqrt{c+d\,\text{Sin}[e+f\,x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right)\Big/$$

$$\left(3\,(c-d)^2\,f\sqrt{a\,(1+\text{Sin}[e+f\,x])}\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Problem 594: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{5/2}}{(a+a\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 251 leaves, 7 steps):

$$-\frac{(5\,c-3\,d)\,d^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{a^{3/2}\,f}-$$

$$\frac{(c-d)^{3/2}\,(c+9\,d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\text{Cos}[e+f\,x]}{\sqrt{2}\sqrt{a+a\,\text{Sin}[e+f\,x]}\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{2\sqrt{2}\,a^{3/2}\,f}+$$

$$\frac{(c-3\,d)\,d\,\text{Cos}[e+f\,x]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,a\,f\sqrt{a+a\,\text{Sin}[e+f\,x]}}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{2\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}}$$

Result (type 3, 1844 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3\right.$$

$$\left(-d^2\,\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+d^2\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]-\frac{(c-d)^2}{2\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)}+\right.$$

$$\left(c^2 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-2 c d \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]+d^2 \operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\Big/$$

$$\left(\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)\sqrt{c+d \operatorname{Sin}[e+f x]}\right)\Big/$$

$$\left(f\left(a\left(1+\operatorname{Sin}[e+f x]\right)\right)^{3/2}\right)+\left(\left(\left(\frac{(c-d)^{3/2}(c+9 d) \operatorname{Log}\left[1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]}{\sqrt{2}}+\right.\right.\right.$$

$$i(5 c-3 d) d^{3/2} \operatorname{Log}\left[-\left(\left(i\left(-i c+d+(1-i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d \operatorname{Sin}[e+f x]}+\right.\right.\right.\right.$$

$$\left.\left.\left.\left.(c-i d) \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(d^{5/2}(-5 c+3 d)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right]+$$

$$i d^{3/2}(-5 c+3 d) \operatorname{Log}\left[\left(i\left(i c+d+(1+i)\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d \operatorname{Sin}[e+f x]}+\right.\right.\right.$$

$$\left.\left.\left.(c+i d) \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(d^{5/2}(-5 c+3 d)\left(i+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right]-\frac{1}{\sqrt{2}}$$

$$(c-d)^{3/2}(c+9 d) \operatorname{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d \operatorname{Sin}[e+f x]}+\right.$$

$$\left.\left.(-c+d) \operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3$$

$$\left(\frac{c^3}{4\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}+\right.$$

$$\frac{7 c^2 d}{4\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}-$$

$$\frac{7 c d^2}{4\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}+$$

$$\frac{3 d^3}{4\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}+$$

$$\frac{5 c d^2 \operatorname{Sin}[e+f x]}{2\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}-$$

$$\left.\left.\frac{3 d^3 \operatorname{Sin}[e+f x]}{2\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\sqrt{c+d \operatorname{Sin}[e+f x]}}\right)\right)\Big/$$

$$\left(f\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{3/2}\left(\frac{(c-d)^{3/2}(c+9 d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)}-\right.\right.$$

$$\left((c-d)^{3/2}(c+9 d)\left(\frac{1}{2}(-c+d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\;d\,\text{Cos}[e+f x]\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{c+d\,\text{Sin}[e+f x]}}+\right.\right.$$

$$\left.\left.\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\Big/$$

$$\left(\sqrt{2}\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)-$$

$$\left((5 c-3 d)\,d^4(-5 c+3 d)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right.$$

$$\left(-\left(\left(\mathrm{i}\left(\frac{1}{2}(c-\mathrm{i} d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{(1-\mathrm{i})\,d^{3/2}\,\text{Cos}[e+f x]\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}}{\sqrt{2}\sqrt{c+d\,\text{Sin}[e+f x]}}+\frac{1}{\sqrt{2}}\right.\right.\right.\right.$$

$$\left.\left.(1-\mathrm{i})\sqrt{d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\text{Sin}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)\Big/\left(d^{5/2}\right.$$

$$\left.\left.\left.(-5 c+3 d)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)+\left(\mathrm{i}\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(-\mathrm{i}\,c+d+(1-\mathrm{i})\right.\right.$$

$$\left.\left.\sqrt{2}\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(c-\mathrm{i} d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$

$$\left(2\,d^{5/2}\,(-5\,c+3\,d)\,\left(-i+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/\Bigg(-i\,c+d+$$

$$(1-i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+(c-i\,d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)+$$

$$\Bigg(d^4\,(-5\,c+3\,d)^2\,\left(i+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Bigg(\Bigg(i\,\Bigg(\frac{1}{2}\,(c+i\,d)\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+$$

$$\frac{(1+i)\,d^{3/2}\,\mathrm{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}}{\sqrt{2}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}+\frac{1}{\sqrt{2}}(1+i)\,\sqrt{d}\,\left(\frac{1}{1+\mathrm{Cos}[e+f\,x]}\right)^{3/2}$$

$$\mathrm{Sin}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Bigg)\Bigg)\Bigg/\left(d^{5/2}\,(-5\,c+3\,d)\,\left(i+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)-$$

$$\Bigg(i\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg(i\,c+d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+$$

$$(c+i\,d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)\Bigg)\Bigg/\left(2\,d^{5/2}\,(-5\,c+3\,d)\,\left(i+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(i\,c+d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}+$$

$$(c+i\,d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)\Bigg)\Bigg)$$

Problem 595: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^{3/2}}{(a+a\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 3, 194 leaves, 6 steps):

$$-\frac{2\,d^{3/2}\,\text{ArcTan}\left[\frac{\sqrt{a}\,\sqrt{d}\,\text{Cos}[e+f\,x]}{\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{a^{3/2}\,f}-\frac{\sqrt{c-d}\,(c+5\,d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\text{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right]}{2\,\sqrt{2}\,a^{3/2}\,f}-\frac{(c-d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,f\,(a+a\,\text{Sin}[e+f\,x])^{3/2}}$$

Result (type 3, 1625 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3\left(\frac{-c+d}{2\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)}+\frac{c\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]-d\,\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]}{\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(f\,(a\,(1+\text{Sin}[e+f\,x]))^{3/2}\right)+$$

$$\Bigg(\Bigg(\sqrt{2}\,(c^2+4\,c\,d-5\,d^2)\,\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]-\sqrt{2}\,(c^2+4\,c\,d-5\,d^2)$$

$$\text{Log}\left[c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right]-$$

$$4\,i\,\sqrt{c-d}\,d^{3/2}\left(\text{Log}\left[\left(c-i\left(d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)+\right.\right.\right.$$

$$\left.\left.(-i\,c+d)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/\left(2\,d^{5/2}\left(i+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right]-$$

$$\text{Log}\left[\left(c+i\,d+(1+i)\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+\right.\right.$$

$$\left.\left.\left.(i\,c+d)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Big/\left(2\,d^{5/2}\left(-i+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\right)\right]\right)\Bigg)\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\right.$$

$$\left.\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^3\left(\frac{c^2}{4\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\right.$$

$$\frac{c\,d}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}-$$

$$\frac{d^2}{4\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\frac{d^2\,\text{Sin}[e+f\,x]}{\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(f\,\big(a\,(1+\text{Sin}[e+f\,x])\big)^{3/2}\,\Bigg(\frac{(c^2+4\,c\,d-5\,d^2)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{\sqrt{2}\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)}-$$

$$\Bigg(\sqrt{2}\,(c^2+4\,c\,d-5\,d^2)\,\Bigg(\frac{1}{2}\,(-c+d)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+\frac{\sqrt{c-d}\,d\,\text{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\sqrt{c-d}\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\text{Sin}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Bigg)\Bigg)\Bigg/$$

$$\left(c-d+2\,\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)-$$

$$4\,\mathrm{i}\,\sqrt{c-d}\,d^{3/2}\,\Bigg(\Bigg(2\,d^{5/2}\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)$$

$$\Bigg(\Bigg(\frac{1}{2}\,(-\mathrm{i}\,c+d)\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2-\mathrm{i}\,\Bigg(\frac{(1+\mathrm{i})\,d^{3/2}\,\text{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}}{\sqrt{2}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\frac{1}{\sqrt{2}}$$

$$(1+\mathrm{i})\,\sqrt{d}\,\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\text{Sin}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Bigg)\Bigg)\Bigg/$$

$$\left(2\, d^{5/2} \left(\mathrm{i} + \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\right)\right) - \Bigg(\mathrm{Sec}\left[\frac{1}{2} (e + f x)\right]^2$$

$$\Bigg(c - \mathrm{i} \left(d + (1 + \mathrm{i}) \sqrt{2} \sqrt{d} \sqrt{\frac{1}{1 + \mathrm{Cos}[e + f x]}} \sqrt{c + d\, \mathrm{Sin}[e + f x]}\right) +$$

$$(-\mathrm{i}\, c + d)\, \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\Bigg)\Bigg) \Bigg/ \left(4\, d^{5/2} \left(\mathrm{i} + \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\right)^2\right)\Bigg)\Bigg) \Bigg/$$

$$\Bigg(c - \mathrm{i} \left(d + (1 + \mathrm{i}) \sqrt{2} \sqrt{d} \sqrt{\frac{1}{1 + \mathrm{Cos}[e + f x]}} \sqrt{c + d\, \mathrm{Sin}[e + f x]}\right) +$$

$$(-\mathrm{i}\, c + d)\, \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\Bigg) - \Bigg(2\, d^{5/2} \left(-\mathrm{i} + \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\right)$$

$$\Bigg(\Bigg(\frac{1}{2} (\mathrm{i}\, c + d)\, \mathrm{Sec}\left[\frac{1}{2} (e + f x)\right]^2 + \frac{(1 + \mathrm{i})\, d^{3/2}\, \mathrm{Cos}[e + f x] \sqrt{\frac{1}{1 + \mathrm{Cos}[e + f x]}}}{\sqrt{2} \sqrt{c + d\, \mathrm{Sin}[e + f x]}} + \frac{1}{\sqrt{2}}$$

$$(1 + \mathrm{i}) \sqrt{d} \left(\frac{1}{1 + \mathrm{Cos}[e + f x]}\right)^{3/2} \mathrm{Sin}[e + f x] \sqrt{c + d\, \mathrm{Sin}[e + f x]}\Bigg) \Bigg/$$

$$\left(2\, d^{5/2} \left(-\mathrm{i} + \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\right)\right) - \Bigg(\mathrm{Sec}\left[\frac{1}{2} (e + f x)\right]^2 \Bigg(c + \mathrm{i}\, d + (1 + \mathrm{i}) \sqrt{2}$$

$$\sqrt{d} \sqrt{\frac{1}{1 + \mathrm{Cos}[e + f x]}} \sqrt{c + d\, \mathrm{Sin}[e + f x]} + (\mathrm{i}\, c + d)\, \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\Bigg)\Bigg) \Bigg/$$

$$\left(4\, d^{5/2} \left(-\mathrm{i} + \mathrm{Tan}\left[\frac{1}{2} (e + f x)\right]\right)^2\right)\Bigg)\Bigg) \Bigg/ \Bigg(c + \mathrm{i}\, d + (1 + \mathrm{i}) \sqrt{2} \sqrt{d}$$

$$\sqrt{\frac{1}{1+\text{Cos}[e+f x]}} \sqrt{c+d \text{Sin}[e+f x]}+(\mathrm{i} c+d) \text{Tan}\left[\frac{1}{2} (e+f x)\right]\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 596: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c+d \text{Sin}[e+f x]}}{(a+a \text{Sin}[e+f x])^{3/2}} \, dx$$

Optimal (type 3, 126 leaves, 4 steps):

$$-\frac{(c+d) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{c-d} \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}\right]}{2 \sqrt{2} a^{3/2} \sqrt{c-d} f}-\frac{\text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{2 f (a+a \text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 372 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right)^2\right.$$
$$\left(-\frac{2 \left(\text{Cos}\left[\frac{1}{2} (e+f x)\right]-\text{Sin}\left[\frac{1}{2} (e+f x)\right]\right) (c+d \text{Sin}[e+f x])}{\text{Cos}\left[\frac{1}{2} (e+f x)\right]+\text{Sin}\left[\frac{1}{2} (e+f x)\right]}+\right.$$
$$\left((c+d) \left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2} (e+f x)\right]\right]-\text{Log}\left[\right.\right.\right.$$
$$\left.\left.c-d+2 \sqrt{c-d} \sqrt{\frac{1}{1+\text{Cos}[e+f x]}} \sqrt{c+d \text{Sin}[e+f x]}+(-c+d) \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right]\right)\Bigg/$$
$$\left(\frac{\text{Sec}\left[\frac{1}{2} (e+f x)\right]^2}{2+2 \text{Tan}\left[\frac{1}{2} (e+f x)\right]}-\left(-\frac{1}{2} (c-d) \text{Sec}\left[\frac{1}{2} (e+f x)\right]^2+\left(\sqrt{c-d} \left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\right.\right.\right.$$
$$\left.\left.(d+d \text{Cos}[e+f x]+c \text{Sin}[e+f x])\right)\Big/\left(\sqrt{c+d \text{Sin}[e+f x]}\right)\right)\Big/$$
$$\left.\left.\left.\left(c-d+2 \sqrt{c-d} \sqrt{\frac{1}{1+\text{Cos}[e+f x]}} \sqrt{c+d \text{Sin}[e+f x]}+(-c+d) \text{Tan}\left[\frac{1}{2} (e+f x)\right]\right)\right)\right)\right)\Bigg/$$
$$\left(4 f (a (1+\text{Sin}[e+f x]))^{3/2} \sqrt{c+d \text{Sin}[e+f x]}\right)$$

Problem 597: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+a \text{Sin}[e+f x])^{3/2} \sqrt{c+d \text{Sin}[e+f x]}} \, dx$$

Optimal (type 3, 135 leaves, 4 steps):

$$-\frac{(c-3d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{2\sqrt{2}\,a^{3/2}\,(c-d)^{3/2}\,f}-\frac{\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{2\,(c-d)\,f\,(a+a\,\text{Sin}[e+f x])^{3/2}}$$

Result (type 3, 381 leaves):

$$\Bigg(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\Bigg(-\frac{2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]-\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)(c+d\,\text{Sin}[e+f x])}{\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]}+$$
$$\Bigg((c-3d)\Bigg(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\text{Log}\Bigg[$$
$$c-d+2\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}-\Bigg(-\frac{1}{2}(c-d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\Bigg(\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}$$
$$(d+d\,\text{Cos}[e+f x]+c\,\text{Sin}[e+f x])\Bigg)\Bigg/\left(\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Bigg)\Bigg/$$
$$\left(c-d+2\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\,\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\left(4\,(c-d)\,f\,(a\,(1+\text{Sin}[e+f x]))^{3/2}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)$$

Problem 598: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+a\,\text{Sin}[e+f x])^{3/2}\,(c+d\,\text{Sin}[e+f x])^{3/2}}\,dx$$

Optimal (type 3, 197 leaves, 5 steps):

$$-\frac{(c-7d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\text{Cos}[e+f x]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{2\sqrt{2}\,a^{3/2}\,(c-d)^{5/2}\,f}-$$
$$\frac{\text{Cos}[e+f x]}{2\,(c-d)\,f\,(a+a\,\text{Sin}[e+f x])^{3/2}\,\sqrt{c+d\,\text{Sin}[e+f x]}}-$$
$$\frac{d\,(c+5d)\,\text{Cos}[e+f x]}{2\,a\,(c-d)^2\,(c+d)\,f\,\sqrt{a+a\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}$$

Result (type 3, 401 leaves):

$$\left(\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\left(-\left(\left(2\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\left(c^2+c d+4 d^2+d(c+5 d)\operatorname{Sin}[e+f x]\right)\right)\Big/\left((c+d)\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)+\left((c-7 d)\left(\operatorname{Log}\left[1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\operatorname{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d\operatorname{Sin}[e+f x]}+(-c+d)\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)\right)\Big/\left(\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}-\left(-\frac{1}{2}(c-d)\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\left(\sqrt{c-d}\left(\frac{1}{1+\operatorname{Cos}[e+f x]}\right)^{3/2}\left(d+d\operatorname{Cos}[e+f x]+c\operatorname{Sin}[e+f x]\right)\right)\Big/\left(\sqrt{c+d\operatorname{Sin}[e+f x]}\right)\right)\Big/\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d\operatorname{Sin}[e+f x]}+(-c+d)\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Big/\left(4(c-d)^2 f\left(a\left(1+\operatorname{Sin}[e+f x]\right)\right)^{3/2}\sqrt{c+d\operatorname{Sin}[e+f x]}\right)$$

Problem 599: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+a\operatorname{Sin}[e+f x]\right)^{3/2}\left(c+d\operatorname{Sin}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 271 leaves, 6 steps):

$$-\frac{(c-11 d)\operatorname{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\operatorname{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\operatorname{Sin}[e+f x]}\sqrt{c+d\operatorname{Sin}[e+f x]}}\right]}{2\sqrt{2}\,a^{3/2}(c-d)^{7/2} f}-\frac{\operatorname{Cos}[e+f x]}{2(c-d) f\left(a+a\operatorname{Sin}[e+f x]\right)^{3/2}\left(c+d\operatorname{Sin}[e+f x]\right)^{3/2}}-\frac{d(3 c+7 d)\operatorname{Cos}[e+f x]}{6 a(c-d)^2(c+d) f\sqrt{a+a\operatorname{Sin}[e+f x]}\left(c+d\operatorname{Sin}[e+f x]\right)^{3/2}}-\frac{d\left(3 c^2+38 c d+19 d^2\right)\operatorname{Cos}[e+f x]}{6 a(c-d)^3(c+d)^2 f\sqrt{a+a\operatorname{Sin}[e+f x]}\sqrt{c+d\operatorname{Sin}[e+f x]}}$$

Result (type 3, 601 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3 \sqrt{c+d\,\text{Sin}[e+f x]}\left(\frac{\text{Sin}\left[\frac{1}{2}(e+f x)\right]}{(c-d)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}-\right.\right.$$

$$\frac{1}{2(c-d)^3\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}-$$

$$\frac{2\left(d^2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-d^2\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{3(c-d)^2(c+d)(c+d\,\text{Sin}[e+f x])^2}-$$

$$\left(8\left(2 c d^2\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]+d^3\,\text{Cos}\left[\frac{1}{2}(e+f x)\right]-2 c d^2\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-\right.\right.$$

$$\left.\left.\left.\left.d^3\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/\left(3(c-d)^3(c+d)^2(c+d\,\text{Sin}[e+f x])\right)\right)\right)\Big/$$

$$\left(f\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{3/2}\right)+\left((c-11 d)\left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\right.\right.$$

$$\left.\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)\Big/$$

$$\left(4(c-d)^3 f\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{3/2}\sqrt{c+d\,\text{Sin}[e+f x]}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}(c-d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\left(d+d\,\text{Cos}[e+f x]+c\,\text{Sin}[e+f x]\right)}{\sqrt{c+d\,\text{Sin}[e+f x]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)$$

Problem 600: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f x])^{5/2}}{(a+a\,\text{Sin}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 260 leaves, 7 steps):

$$-\frac{2 d^{5/2} \text{ArcTan}\left[\frac{\sqrt{a} \sqrt{d} \text{Cos}[e+f x]}{\sqrt{a+a \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}\right]}{a^{5/2} f}-\frac{\sqrt{c-d} \left(3 c^2+14 c d+43 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{c-d} \text{Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} f}-\frac{(c-d) (3 c+11 d) \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{16 a f (a+a \text{Sin}[e+f x])^{3/2}}-\frac{(c-d) \text{Cos}[e+f x] (c+d \text{Sin}[e+f x])^{3/2}}{4 f (a+a \text{Sin}[e+f x])^{5/2}}$$

Result (type 3, 1845 leaves):

$$\Bigg(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5 \Bigg(-\frac{(c-d)^2}{4 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3}-\frac{3 (c-d) (c+5 d)}{16 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}+$$

$$\left(3 \left(c^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]+4 c d \text{Sin}\left[\frac{1}{2}(e+f x)\right]-5 d^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Big/$$

$$\left(8 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2\right)+$$

$$\left(c^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]-2 c d \text{Sin}\left[\frac{1}{2}(e+f x)\right]+d^2 \text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\Big/$$

$$\left(2 \left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)\Bigg)$$

$$\sqrt{c+d \text{Sin}[e+f x]}\Bigg)\Big/\left(f (a (1+\text{Sin}[e+f x]))^{5/2}\right)+$$

$$\Bigg(\Bigg(\sqrt{2} \left(3 c^3+11 c^2 d+29 c d^2-43 d^3\right) \text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\sqrt{2} \left(3 c^3+11 c^2 d+29 c d^2-43 d^3\right)$$

$$\text{Log}\left[c-d+2 \sqrt{c-d} \sqrt{\frac{1}{1+\text{Cos}[e+f x]}} \sqrt{c+d \text{Sin}[e+f x]}+(-c+d) \text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-$$

$$32 \text{i} \sqrt{c-d} d^{5/2} \Bigg(\text{Log}\Bigg[\Bigg(c-\text{i} \Bigg(d+(1+\text{i}) \sqrt{2} \sqrt{d} \sqrt{\frac{1}{1+\text{Cos}[e+f x]}} \sqrt{c+d \text{Sin}[e+f x]}\Bigg)+$$

$$(-\text{i} c+d) \text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Big/\left(16 d^{7/2} \left(\text{i}+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Bigg]-\text{Log}\Bigg[\Bigg(c+\text{i} d+(1+$$

$$\left.\left.\mathbb{i}\right)\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+\left(\mathbb{i}\,c+d\right)\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\Big/$$

$$\left.\left.\left.\left(16\,d^{7/2}\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\right)\right]\right)\right)\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)^5$$

$$\left(\frac{3\,c^3}{32\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\right.$$

$$\frac{11\,c^2\,d}{32\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\frac{29\,c\,d^2}{32\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}-$$

$$\frac{11\,d^3}{32\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\left.\left.\frac{d^3\,\text{Sin}[e+f\,x]}{\left(\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right)\right)\Big/$$

$$\left(f\left(a\left(1+\text{Sin}[e+f\,x]\right)\right)^{5/2}\left(\frac{\left(3\,c^3+11\,c^2\,d+29\,c\,d^2-43\,d^3\right)\text{Sec}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2}{\sqrt{2}\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)}-\right.\right.$$

$$\left(\sqrt{2}\left(3\,c^3+11\,c^2\,d+29\,c\,d^2-43\,d^3\right)\right.$$

$$\left(\frac{1}{2}\left(-c+d\right)\text{Sec}\left[\frac{1}{2}\left(e+f\,x\right)\right]^2+\frac{\sqrt{c-d}\,d\,\text{Cos}[e+f\,x]\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}}{\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\right.$$

$$\left.\left.\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f\,x]}\right)^{3/2}\text{Sin}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\Big/$$

$$\left(c-d+2\sqrt{c-d}\,\sqrt{\frac{1}{1+\text{Cos}[e+f\,x]}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}+\left(-c+d\right)\text{Tan}\left[\frac{1}{2}\left(e+f\,x\right)\right]\right)-$$

$$32\,\mathrm{i}\,\sqrt{c-d}\,d^{5/2}\left(\left(\left(16\,d^{7/2}\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\right.\right.$$

$$\left(\left(\frac{1}{2}\,(-\mathrm{i}\,c+d)\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2-\mathrm{i}\left(\frac{(1+\mathrm{i})\,d^{3/2}\,\mathrm{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}}{\sqrt{2}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}+\frac{1}{\sqrt{2}}\right.\right.\right.$$

$$\left.\left.\left.(1+\mathrm{i})\,\sqrt{d}\,\left(\frac{1}{1+\mathrm{Cos}[e+f\,x]}\right)^{3/2}\mathrm{Sin}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\Big/$$

$$\left(16\,d^{7/2}\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)-\left(\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right.$$

$$\left(c-\mathrm{i}\left(d+(1+\mathrm{i})\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)+\right.$$

$$\left.\left.\left.(-\mathrm{i}\,c+d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)\Big/\left(32\,d^{7/2}\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(c-\mathrm{i}\left(d+(1+\mathrm{i})\,\sqrt{2}\,\sqrt{d}\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)+\right.$$

$$\left.(-\mathrm{i}\,c+d)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)-\left(16\,d^{7/2}\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\right)$$

$$\left(\left(\frac{1}{2}\,(\mathrm{i}\,c+d)\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2+\frac{(1+\mathrm{i})\,d^{3/2}\,\mathrm{Cos}[e+f\,x]\,\sqrt{\frac{1}{1+\mathrm{Cos}[e+f\,x]}}}{\sqrt{2}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}+\frac{1}{\sqrt{2}}\right.\right.$$

$$\left.\left.\left.\left.(1+i)\sqrt{d}\left(\frac{1}{1+\text{Cos}[e+fx]}\right)^{3/2}\text{Sin}[e+fx]\sqrt{c+d\,\text{Sin}[e+fx]}\right)\right/\right.$$

$$\left(16\,d^{7/2}\left(-i+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)-\left(\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\left(c+i\,d+(1+i)\sqrt{2}\right.\right.$$

$$\left.\left.\sqrt{d}\sqrt{\frac{1}{1+\text{Cos}[e+fx]}}\sqrt{c+d\,\text{Sin}[e+fx]}+(i\,c+d)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\bigg/$$

$$\left.\left.\left(32\,d^{7/2}\left(-i+\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)^2\right)\right)\right)\bigg/\left(c+i\,d+(1+i)\sqrt{2}\sqrt{d}\right.$$

$$\left.\left.\left.\left.\sqrt{\frac{1}{1+\text{Cos}[e+fx]}}\sqrt{c+d\,\text{Sin}[e+fx]}+(i\,c+d)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\right)\right)$$

Problem 601: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+fx])^{3/2}}{(a+a\,\text{Sin}[e+fx])^{5/2}}\,dx$$

Optimal (type 3, 184 leaves, 5 steps):

$$-\frac{3\,(c+d)^2\,\text{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\text{Cos}[e+fx]}{\sqrt{2}\,\sqrt{a+a\,\text{Sin}[e+fx]}\,\sqrt{c+d\,\text{Sin}[e+fx]}}\right]}{16\sqrt{2}\,a^{5/2}\sqrt{c-d}\,f}-$$

$$\frac{(c-d)\,\text{Cos}[e+fx]\,\sqrt{c+d\,\text{Sin}[e+fx]}}{4f\,(a+a\,\text{Sin}[e+fx])^{5/2}}-\frac{(3c+7d)\,\text{Cos}[e+fx]\,\sqrt{c+d\,\text{Sin}[e+fx]}}{16\,a\,f\,(a+a\,\text{Sin}[e+fx])^{3/2}}$$

Result (type 3, 544 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right.$$

$$\left(\frac{-c+d}{4\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3}+\frac{-3 c-7 d}{16\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}+\right.$$

$$\left.\frac{c\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]-d\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]}{2\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}+\frac{3 c\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]+7 d\,\text{Sin}\left[\frac{1}{2}(e+f x)\right]}{8\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}\right)$$

$$\left.\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Big/\left(f\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{5/2}\right)+\left(3(c+d)^2\left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\right.\right.$$

$$\left.\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}(e+f x)\right]+\text{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)\Big/$$

$$\left(32 f\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{5/2}\sqrt{c+d\,\text{Sin}[e+f x]}\left(\frac{\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}(c-d)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\text{Cos}[e+f x]}\right)^{3/2}\left(d+d\,\text{Cos}[e+f x]+c\,\text{Sin}[e+f x]\right)}{\sqrt{c+d\,\text{Sin}[e+f x]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}[e+f x]}}\sqrt{c+d\,\text{Sin}[e+f x]}+(-c+d)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)$$

Problem 602: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\text{Sin}[e+f x]}}{\left(a+a\,\text{Sin}[e+f x]\right)^{5/2}}\,dx$$

Optimal (type 3, 191 leaves, 5 steps):

$$-\frac{(3 c-5 d)(c+d)\,\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\text{Cos}[e+f x]}{\sqrt{2}\sqrt{a+a\,\text{Sin}[e+f x]}\sqrt{c+d\,\text{Sin}[e+f x]}}\right]}{16\sqrt{2}\,a^{5/2}(c-d)^{3/2}f}-$$

$$\frac{\text{Cos}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}}{4 f\left(a+a\,\text{Sin}[e+f x]\right)^{5/2}}-\frac{(3 c-d)\,\text{Cos}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}}{16 a(c-d) f\left(a+a\,\text{Sin}[e+f x]\right)^{3/2}}$$

Result (type 3, 552 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{5}\left(\frac{\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]}{2\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{4}}-\right.\right.$$

$$\frac{1}{4\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{3}}+\frac{-3 c+d}{16\left(c-d\right)\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}+$$

$$\left.\left.\frac{3 c\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]-d\,\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]}{8\left(c-d\right)\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{2}}\right)\sqrt{c+d\,\text{Sin}\left[e+f x\right]}\right)\Big/$$

$$\left(f\left(a\left(1+\text{Sin}\left[e+f x\right]\right)\right)^{5/2}\right)+\left(\left(3 c^{2}-2 c d-5 d^{2}\right)\left(\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-\right.\right.$$

$$\left.\text{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}\left[e+f x\right]}}\sqrt{c+d\,\text{Sin}\left[e+f x\right]}+\left(-c+d\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right]\right)$$

$$\left.\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{4}\right)\Big/$$

$$\left(32\left(c-d\right) f\left(a\left(1+\text{Sin}\left[e+f x\right]\right)\right)^{5/2}\sqrt{c+d\,\text{Sin}\left[e+f x\right]}\left(\frac{\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^{2}}{2+2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}\left(c-d\right)\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^{2}+\frac{\sqrt{c-d}\left(\frac{1}{1+\text{Cos}\left[e+f x\right]}\right)^{3/2}\left(d+d\,\text{Cos}\left[e+f x\right]+c\,\text{Sin}\left[e+f x\right]\right)}{\sqrt{c+d\,\text{Sin}\left[e+f x\right]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\text{Cos}\left[e+f x\right]}}\sqrt{c+d\,\text{Sin}\left[e+f x\right]}+\left(-c+d\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\right)$$

Problem 603: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+a\,\text{Sin}\left[e+f x\right]\right)^{5/2}\sqrt{c+d\,\text{Sin}\left[e+f x\right]}}\,dx$$

Optimal (type 3, 201 leaves, 5 steps):

$$-\frac{\left(3 c^{2}-10 c d+19 d^{2}\right)\text{ArcTanh}\left[\frac{\sqrt{a}\sqrt{c-d}\,\text{Cos}\left[e+f x\right]}{\sqrt{2}\sqrt{a+a\,\text{Sin}\left[e+f x\right]}\sqrt{c+d\,\text{Sin}\left[e+f x\right]}}\right]}{16\sqrt{2}\,a^{5/2}\left(c-d\right)^{5/2} f}-$$

$$\frac{\text{Cos}\left[e+f x\right]\sqrt{c+d\,\text{Sin}\left[e+f x\right]}}{4\left(c-d\right) f\left(a+a\,\text{Sin}\left[e+f x\right]\right)^{5/2}}-\frac{3\left(c-3 d\right)\text{Cos}\left[e+f x\right]\sqrt{c+d\,\text{Sin}\left[e+f x\right]}}{16 a\left(c-d\right)^{2} f\left(a+a\,\text{Sin}\left[e+f x\right]\right)^{3/2}}$$

Result (type 3, 565 leaves):

$$\left(\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^5\left(\frac{\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]}{2(c-d)\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4}-\frac{1}{4(c-d)\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^3}-\frac{3(c-3d)}{16(c-d)^2\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}+\frac{3\left(c\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]-3d\,\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{8(c-d)^2\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^2}\right)\sqrt{c+d\,\mathrm{Sin}[e+fx]}\right)\Big/$$

$$\left(f\left(a\left(1+\mathrm{Sin}[e+fx]\right)\right)^{5/2}\right)+\left(\left(3c^2-10cd+19d^2\right)\left(\mathrm{Log}\left[1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right]-\mathrm{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}\sqrt{c+d\,\mathrm{Sin}[e+fx]}+(-c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right]\right)\left(\mathrm{Cos}\left[\frac{1}{2}(e+fx)\right]+\mathrm{Sin}\left[\frac{1}{2}(e+fx)\right]\right)^4\right)\Big/$$

$$\left(32(c-d)^2 f\left(a\left(1+\mathrm{Sin}[e+fx]\right)\right)^{5/2}\sqrt{c+d\,\mathrm{Sin}[e+fx]}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2}{2+2\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}-\left(-\frac{1}{2}(c-d)\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\mathrm{Cos}[e+fx]}\right)^{3/2}\left(d+d\,\mathrm{Cos}[e+fx]+c\,\mathrm{Sin}[e+fx]\right)}{\sqrt{c+d\,\mathrm{Sin}[e+fx]}}\right)\Big/\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+fx]}}\sqrt{c+d\,\mathrm{Sin}[e+fx]}+(-c+d)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\right)\right)\right)$$

Problem 604: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+a\,\mathrm{Sin}[e+fx]\right)^{5/2}\left(c+d\,\mathrm{Sin}[e+fx]\right)^{3/2}}\,dx$$

Optimal (type 3, 270 leaves, 6 steps):

$$-\frac{3\left(c^2-6\,c\,d+25\,d^2\right)\operatorname{ArcTanh}\left[\frac{\sqrt{a}\,\sqrt{c-d}\,\operatorname{Cos}[e+f\,x]}{\sqrt{2}\,\sqrt{a+a\operatorname{Sin}[e+f\,x]}\,\sqrt{c+d\operatorname{Sin}[e+f\,x]}}\right]}{16\,\sqrt{2}\,a^{5/2}\,(c-d)^{7/2}\,f}-\frac{\operatorname{Cos}[e+f\,x]}{4\,(c-d)\,f\,(a+a\operatorname{Sin}[e+f\,x])^{5/2}\,\sqrt{c+d\operatorname{Sin}[e+f\,x]}}-\frac{(3\,c-13\,d)\operatorname{Cos}[e+f\,x]}{16\,a\,(c-d)^2\,f\,(a+a\operatorname{Sin}[e+f\,x])^{3/2}\,\sqrt{c+d\operatorname{Sin}[e+f\,x]}}-\frac{(c-7\,d)\,d\,(3\,c+7\,d)\operatorname{Cos}[e+f\,x]}{16\,a^2\,(c-d)^3\,(c+d)\,f\,\sqrt{a+a\operatorname{Sin}[e+f\,x]}\,\sqrt{c+d\operatorname{Sin}[e+f\,x]}}$$

Result (type 3, 622 leaves) :

$$\left(\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^5\right.$$

$$\sqrt{c+d\operatorname{Sin}[e+f x]}\left(\frac{\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]}{2(c-d)^2\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4}-\right.$$

$$\frac{1}{4(c-d)^2\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^3}+$$

$$\frac{-3c+17d}{16(c-d)^3\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}+$$

$$\frac{3c\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]-17d\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]}{8(c-d)^3\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2}+$$

$$\left.\left.\frac{2\left(d^3\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]-d^3\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)}{(c-d)^3(c+d)(c+d\operatorname{Sin}[e+f x])}\right)\right)\Big/$$

$$\left(f\left(a(1+\operatorname{Sin}[e+f x])\right)^{5/2}\right)+\left(3\left(c^2-6cd+25d^2\right)\left(\operatorname{Log}\left[1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]-\right.\right.$$

$$\left.\operatorname{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d\operatorname{Sin}[e+f x]}+(-c+d)\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right]\right)$$

$$\left.\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^4\right)\Big/$$

$$\left(32(c-d)^3 f\left(a(1+\operatorname{Sin}[e+f x])\right)^{5/2}\sqrt{c+d\operatorname{Sin}[e+f x]}\left(\frac{\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2}{2+2\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}(c-d)\operatorname{Sec}\left[\frac{1}{2}(e+f x)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\operatorname{Cos}[e+f x]}\right)^{3/2}(d+d\operatorname{Cos}[e+f x]+c\operatorname{Sin}[e+f x])}{\sqrt{c+d\operatorname{Sin}[e+f x]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\operatorname{Cos}[e+f x]}}\sqrt{c+d\operatorname{Sin}[e+f x]}+(-c+d)\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)$$

Problem 605: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+a\operatorname{Sin}[e+f x])^{5/2}(c+d\operatorname{Sin}[e+f x])^{5/2}}\,dx$$

Optimal (type 3, 355 leaves, 7 steps):

$$-\frac{\left(3 c^2-26 c d+163 d^2\right) \text{ArcTanh}\left[\frac{\sqrt{a} \sqrt{c-d} \text{ Cos}[e+f x]}{\sqrt{2} \sqrt{a+a \text{ Sin}[e+f x]} \sqrt{c+d \text{ Sin}[e+f x]}}\right]}{16 \sqrt{2} a^{5/2} (c-d)^{9/2} f}-$$
$$\frac{\text{Cos}[e+f x]}{4 (c-d) f (a+a \text{ Sin}[e+f x])^{5/2} (c+d \text{ Sin}[e+f x])^{3/2}}-$$
$$\frac{(3 c-17 d) \text{ Cos}[e+f x]}{16 a (c-d)^2 f (a+a \text{ Sin}[e+f x])^{3/2} (c+d \text{ Sin}[e+f x])^{3/2}}-$$
$$\frac{d \left(9 c^2-54 c d-95 d^2\right) \text{Cos}[e+f x]}{48 a^2 (c-d)^3 (c+d) f \sqrt{a+a \text{ Sin}[e+f x]} (c+d \text{ Sin}[e+f x])^{3/2}}-$$
$$\frac{d \left(9 c^3-57 c^2 d-493 c d^2-299 d^3\right) \text{Cos}[e+f x]}{48 a^2 (c-d)^4 (c+d)^2 f \sqrt{a+a \text{ Sin}[e+f x]} \sqrt{c+d \text{ Sin}[e+f x]}}$$

Result (type 3, 717 leaves):

$$\frac{1}{f\left(a\left(1+\mathrm{Sin}[e+f x]\right)\right)^{5/2}}\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^5$$

$$\sqrt{c+d\,\mathrm{Sin}[e+f x]}\left(\frac{\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]}{2\left(c-d\right)^3\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^4}-\right.$$

$$\frac{1}{4\left(c-d\right)^3\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^3}+$$

$$\frac{-3 c+25 d}{16\left(c-d\right)^4\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}+$$

$$\frac{3 c\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]-25 d\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]}{8\left(c-d\right)^4\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^2}+$$

$$\frac{2\left(d^3\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-d^3\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)}{3\left(c-d\right)^3\left(c+d\right)\left(c+d\,\mathrm{Sin}[e+f x]\right)^2}+$$

$$\left(2\left(11 c d^3\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+7 d^4\,\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]-11 c d^3\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]-\right.\right.$$

$$\left.\left.\left.7 d^4\,\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\Big/\left(3\left(c-d\right)^4\left(c+d\right)^2\left(c+d\,\mathrm{Sin}[e+f x]\right)\right)\right)+$$

$$\left(\left(3 c^2-26 c d+163 d^2\right)\left(\mathrm{Log}\left[1+\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right]-\right.\right.$$

$$\left.\mathrm{Log}\left[c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\left(-c+d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right]\right)$$

$$\left.\left(\mathrm{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\mathrm{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^4\right)\Big/$$

$$\left(32\left(c-d\right)^4 f\left(a\left(1+\mathrm{Sin}[e+f x]\right)\right)^{5/2}\sqrt{c+d\,\mathrm{Sin}[e+f x]}\left(\frac{\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{2+2\,\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]}-\right.\right.$$

$$\left(-\frac{1}{2}\left(c-d\right)\mathrm{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2+\frac{\sqrt{c-d}\left(\frac{1}{1+\mathrm{Cos}[e+f x]}\right)^{3/2}\left(d+d\,\mathrm{Cos}[e+f x]+c\,\mathrm{Sin}[e+f x]\right)}{\sqrt{c+d\,\mathrm{Sin}[e+f x]}}\right)\Big/$$

$$\left.\left.\left(c-d+2\sqrt{c-d}\sqrt{\frac{1}{1+\mathrm{Cos}[e+f x]}}\sqrt{c+d\,\mathrm{Sin}[e+f x]}+\left(-c+d\right)\mathrm{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\right)$$

Problem 606: Result more than twice size of optimal antiderivative.

$$\int (a + a \operatorname{Sin}[e + f x])^m (c + d \operatorname{Sin}[e + f x])^n \, dx$$

Optimal (type 6, 129 leaves, 4 steps):

$$\left(\sqrt{2}\, \operatorname{AppellF1}\left[\frac{1}{2} + m, \frac{1}{2}, -n, \frac{3}{2} + m, \frac{1}{2} (1 + \operatorname{Sin}[e + f x]), -\frac{d (1 + \operatorname{Sin}[e + f x])}{c - d}\right] \operatorname{Cos}[e + f x] (a + a \operatorname{Sin}[e + f x])^m (c + d \operatorname{Sin}[e + f x])^n \left(\frac{c + d \operatorname{Sin}[e + f x]}{c - d}\right)^{-n}\right) \Big/ \left(f (1 + 2 m) \sqrt{1 - \operatorname{Sin}[e + f x]}\right)$$

Result (type 6, 373 leaves):

$$\left(6 (c + d) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2} - m, -n, \frac{3}{2}, \operatorname{Cos}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^2, \frac{2 d \operatorname{Sin}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2}{c + d}\right] \left(\operatorname{Cos}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2\right)^{-\frac{1}{2} + m} \operatorname{Cot}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right] (a (1 + \operatorname{Sin}[e + f x]))^m (c + d \operatorname{Sin}[e + f x])^n \left(\operatorname{Sin}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^2\right)^{\frac{1}{2} - m}\right) \Big/ \left(f \left(-3 (c + d) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2} - m, -n, \frac{3}{2}, \operatorname{Cos}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^2, \frac{2 d \operatorname{Sin}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2}{c + d}\right] + \left(4 d n \operatorname{AppellF1}\left[\frac{3}{2}, \frac{1}{2} - m, 1 - n, \frac{5}{2}, \operatorname{Cos}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^2, \frac{2 d \operatorname{Sin}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2}{c + d}\right] + (c + d) (-1 + 2 m) \operatorname{AppellF1}\left[\frac{3}{2}, \frac{3}{2} - m, -n, \frac{5}{2}, \operatorname{Cos}\left[\frac{1}{4} (2 e + \pi + 2 f x)\right]^2, \frac{2 d \operatorname{Sin}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2}{c + d}\right]\right) \operatorname{Sin}\left[\frac{1}{4} (2 e - \pi + 2 f x)\right]^2\right)\right)$$

Problem 607: Attempted integration timed out after 120 seconds.

$$\int (a + a \operatorname{Sin}[e + f x])^m (c + d \operatorname{Sin}[e + f x])^3 \, dx$$

Optimal (type 5, 320 leaves, 6 steps):

$$-\left(\left(d\left(d^2(4+m)-c\,d\left(5-3m-2m^2\right)+2c^2\left(8+6m+m^2\right)\right)\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^m\right)\Big/\left(f(1+m)(2+m)(3+m)\right)\right)-\left(2^{\frac{1}{2}+m}\left(d^3 m\left(5+3m+m^2\right)+3c^2 d\,m\left(6+5m+m^2\right)+3c\,d^2\left(3+4m+4m^2+m^3\right)+c^3\left(6+11m+6m^2+m^3\right)\right)\right.$$
$$\text{Cos}[e+fx]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{1}{2}(1-\text{Sin}[e+fx])\right]$$
$$\left.(1+\text{Sin}[e+fx])^{-\frac{1}{2}-m}\left(a+a\,\text{Sin}[e+fx]\right)^m\right)\Big/\left(f(1+m)(2+m)(3+m)\right)-$$
$$\frac{d^2\left(d\,m+c(5+m)\right)\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^{1+m}}{a\,f(2+m)(3+m)}-$$
$$\frac{d\,\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^m\left(c+d\,\text{Sin}[e+fx]\right)^2}{f(3+m)}$$

Result (type 1, 1 leaves):

???

Problem 608: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+fx])^m\,(c+d\,\text{Sin}[e+fx])^2\,dx$$

Optimal (type 5, 193 leaves, 4 steps):

$$\frac{d\left(d-2c(2+m)\right)\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^m}{f(1+m)(2+m)}-$$
$$\frac{1}{f(1+m)(2+m)}2^{\frac{1}{2}+m}\left(2c\,d\,m(2+m)+d^2\left(1+m+m^2\right)+c^2\left(2+3m+m^2\right)\right)$$
$$\text{Cos}[e+fx]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{1}{2}(1-\text{Sin}[e+fx])\right]$$
$$(1+\text{Sin}[e+fx])^{-\frac{1}{2}-m}\left(a+a\,\text{Sin}[e+fx]\right)^m-\frac{d^2\,\text{Cos}[e+fx]\left(a+a\,\text{Sin}[e+fx]\right)^{1+m}}{a\,f(2+m)}$$

Result (type 5, 1774 leaves):

$$-\left(\left(\left(2\left(\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)\right)^{\frac{1}{2}-m}\right.\right.$$
$$\left(1-\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^{-\frac{1}{2}+m}\left(c+d-2d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^2$$
$$\left(4\,\text{Gamma}\left[\frac{3}{2}-m\right]\text{HypergeometricPFQ}\left[\left\{\frac{3}{2},2,\frac{3}{2}-m\right\},\left\{1,\frac{9}{2}\right\},\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]\right.$$
$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\left(c+d-2d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)^2+$$
$$16\,\text{Gamma}\left[\frac{3}{2}-m\right]\text{Hypergeometric2F1}\left[\frac{3}{2},\frac{3}{2}-m,\frac{9}{2},\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right]$$
$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\left(c^2+c\,d\left(2-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2\right)+\right.$$

$$d^2\left(1-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)+$$

$$7\,\text{Gamma}\left[\frac{1}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}-m,\,\frac{7}{2},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\Bigg(15\,c^2+10\,c\,d\left(3-2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$d^2\left(15-20\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+12\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)\Bigg)$$

$$\left(a+a\,\text{Sin}[e+f\,x]\right)^m\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Big/$$

$$\Bigg(f\,\Bigg(4\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{HypergeometricPFQ}\left[\left\{\frac{3}{2},\,2,\,\frac{3}{2}-m\right\},\,\left\{1,\,\frac{9}{2}\right\},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d-2\,d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2+$$

$$16\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{3}{2},\,\frac{3}{2}-m,\,\frac{9}{2},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg(c^2+c\,d\left(2-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$d^2\left(1-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)+$$

$$7\,\text{Gamma}\left[\frac{1}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}-m,\,\frac{7}{2},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\Bigg(15\,c^2+10\,c\,d\left(3-2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$d^2\left(15-20\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+12\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)+$$

$$\frac{2}{3}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg(-48\,d\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{HypergeometricPFQ}\left[\left\{\frac{3}{2},\,2,\,\frac{3}{2}-m\right\},\,\left\{1,\,\frac{9}{2}\right\},\right.$$

$$\left.\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d-2\,d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+$$

$$12\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{HypergeometricPFQ}\left[\left\{\frac{3}{2},\,2,\,\frac{3}{2}-m\right\},\,\left\{1,\,\frac{9}{2}\right\},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(c+d-2\,d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2-4\,(-3+2\,m)\,\text{Gamma}\left[\frac{3}{2}-m\right]$$

$$\text{HypergeometricPFQ}\left[\left\{\frac{5}{2},\,3,\,\frac{5}{2}-m\right\},\,\left\{2,\,\frac{11}{2}\right\},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d-2\,d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^2+48\,d\,\text{Gamma}\left[\frac{3}{2}-m\right]$$

$$\text{Hypergeometric2F1}\left[\frac{3}{2},\,\frac{3}{2}-m,\,\frac{9}{2},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg(-3\,c$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+d\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\left(-3+4\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\Bigg)+$$

$$84\,d\,\text{Gamma}\left[\frac{1}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}-m,\,\frac{7}{2},\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(-5\,c+d\left(-5+6\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)\right)+48\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{Hypergeometric2F1}\Big[$$

$$\frac{3}{2},\ \frac{3}{2}-m,\ \frac{9}{2},\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\left(c^2+c\,d\left(2-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\right.$$

$$d^2\left(1-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)-$$

$$8\,(-3+2\,m)\,\text{Gamma}\left[\frac{3}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{5}{2},\ \frac{5}{2}-m,\ \frac{11}{2},\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c^2+c\,d\left(2-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\right.$$

$$d^2\left(1-3\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)+$$

$$3\left(\frac{1}{2}-m\right)\text{Gamma}\left[\frac{1}{2}-m\right]\,\text{Hypergeometric2F1}\left[\frac{3}{2},\ \frac{3}{2}-m,\ \frac{9}{2},\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(15\,c^2+10\,c\,d\left(3-2\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)+\right.$$

$$d^2\left(15-20\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2+12\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\right)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 609: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^m\,(c+d\,\text{Sin}[e+f\,x])\,dx$$

Optimal (type 5, 117 leaves, 3 steps):

$$-\frac{d\,\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m}{f\,(1+m)}-\frac{1}{f\,(1+m)}2^{\frac{1}{2}+m}\,(c+c\,m+d\,m)\,\text{Cos}[e+f\,x]$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\ \frac{1}{2}-m,\ \frac{3}{2},\ \frac{1}{2}\,(1-\text{Sin}[e+f\,x])\right]\,(1+\text{Sin}[e+f\,x])^{-\frac{1}{2}-m}\,(a+a\,\text{Sin}[e+f\,x])^m$$

Result (type 5, 295 leaves):

$$-\frac{1}{f}(a\,(1+\text{Sin}[e+f\,x]))^m$$

$$\left(\frac{1}{-1+m^2}2^{-1-2\,m}\,d\,e^{-i\,(e+f\,x)}\,\left(1+i\,e^{-i\,(e+f\,x)}\right)^{-2\,m}\left(e^{-\frac{1}{4}\,i\,(2\,e+\pi+2\,f\,x)}\left(i+e^{i\,(e+f\,x)}\right)\right)^{2\,m}\right.$$

$$\left(e^{2\,i\,(e+f\,x)}\,(-1+m)\,\text{Hypergeometric2F1}\left[-1-m,\ -2\,m,\ -m,\ -i\,e^{-i\,(e+f\,x)}\right]-\right.$$

$$\left.(1+m)\,\text{Hypergeometric2F1}\left[1-m,\ -2\,m,\ 2-m,\ -i\,e^{-i\,(e+f\,x)}\right]\right)+$$

$$\left(2\,\sqrt{2}\,c\,\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^{1+2\,m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\ \frac{1}{2}+m,\ \frac{3}{2}+m,\right.\right.$$

$$\left.\left.\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2\right]\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]\right)\Big/$$

$$\left.\left((1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\right)\right)\,\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^{-2\,m}$$

Problem 611: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a\,\text{Sin}[e+f\,x])^m}{c+d\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 6, 100 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},1,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+f\,x]),-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}\right]\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Big/\left((c-d)\,f\,(1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 363 leaves):

$$-\left(\left(6\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,1,\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\left(\text{Cos}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]\,(a\,(1+\text{Sin}[e+f\,x]))^m\left(\text{Sin}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2\right)^{\frac{1}{2}-m}\right)\Big/\left(f\,(c+d\,\text{Sin}[e+f\,x])\left(3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,1,\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]+\left(4\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,2,\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]-(c+d)\,(-1+2\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,1,\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right)\text{Sin}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2\right)\right)\right)$$

Problem 612: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+a\,\text{Sin}[e+f\,x])^m}{(c+d\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 6, 100 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},2,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+f\,x]),-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}\right]\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m\right)\Big/\left((c-d)^2\,f\,(1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 363 leaves):

$$-\Bigg(\Bigg(6\,(c+d)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-m,2,\frac{3}{2},\text{Cos}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]^2,\frac{2\,d\,\text{Sin}\big[\frac{1}{4}(2e-\pi+2fx)\big]^2}{c+d}\Big]$$

$$\left(\text{Cos}\Big[\frac{1}{4}(2e-\pi+2fx)\Big]^2\right)^{-\frac{1}{2}+m}\text{Cot}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]\,(a\,(1+\text{Sin}[e+fx]))^m$$

$$\left(\text{Sin}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]^2\right)^{\frac{1}{2}-m}\Bigg)\Big/\Bigg(f\,(c+d\,\text{Sin}[e+fx])^2$$

$$\Bigg(3\,(c+d)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-m,2,\frac{3}{2},\text{Cos}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]^2,\frac{2\,d\,\text{Sin}\big[\frac{1}{4}(2e-\pi+2fx)\big]^2}{c+d}\Big]+$$

$$\Bigg(8\,d\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-m,3,\frac{5}{2},\text{Cos}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]^2,\frac{2\,d\,\text{Sin}\big[\frac{1}{4}(2e-\pi+2fx)\big]^2}{c+d}\Big]-$$

$$(c+d)\,(-1+2m)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-m,2,\frac{5}{2},\text{Cos}\Big[\frac{1}{4}(2e+\pi+2fx)\Big]^2,$$

$$\frac{2\,d\,\text{Sin}\big[\frac{1}{4}(2e-\pi+2fx)\big]^2}{c+d}\Big]\Bigg)\,\text{Sin}\Big[\frac{1}{4}(2e-\pi+2fx)\Big]^2\Bigg)\Bigg)\Bigg)$$

Problem 613: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+fx])^m}{(c+d\,\text{Sin}[e+fx])^3}\,dx$$

Optimal (type 6, 100 leaves, 3 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\Big[\frac{1}{2}+m,\frac{1}{2},3,\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+fx]),-\frac{d\,(1+\text{Sin}[e+fx])}{c-d}\Big]\right.$$

$$\left.\text{Cos}[e+fx]\,(a+a\,\text{Sin}[e+fx])^m\right)\Big/\left((c-d)^3\,f\,(1+2m)\,\sqrt{1-\text{Sin}[e+fx]}\right)$$

Result (type 6, 363 leaves):

$$-\left(\left(6\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,3,\frac{3}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right.\right.$$

$$\left(\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2\right)^{-\frac{1}{2}+m}\,\text{Cot}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]\,(a\,(1+\text{Sin}[e+f\,x]))^m$$

$$\left.\left(\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2\right)^{\frac{1}{2}-m}\right)\Big/\left(f\,(c+d\,\text{Sin}[e+f\,x])^3\right.$$

$$\left(3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,3,\frac{3}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]+\right.$$

$$\left(12\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,4,\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]-\right.$$

$$(c+d)\,(-1+2\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,3,\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right)\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2\right)\right)\right)$$

Problem 614: Result more than twice size of optimal antiderivative.

$$\int(a+a\,\text{Sin}[e+f\,x])^m\,(c+d\,\text{Sin}[e+f\,x])^{5/2}\,dx$$

Optimal (type 6, 138 leaves, 4 steps):

$$\left(\sqrt{2}\,(c-d)^2\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},-\frac{5}{2},\frac{3}{2}+m,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}\right]\right.$$

$$\left.\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$

$$\left(f\,(1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c-d}}\right)$$

Result (type 6, 365 leaves):

$$-\left(\left(3\sqrt{2}\,(c+d)\right.\right.$$

$$\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{5}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]$$

$$\left.\sqrt{1+\text{Sin}[e+f\,x]}\,\left(a\,(1+\text{Sin}[e+f\,x])\right)^m\,(c+d\,\text{Sin}[e+f\,x])^{5/2}\,\text{Tan}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]\right)\Big/$$

$$\left(f\,\sqrt{\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}\,\left(-3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{5}{2},\frac{3}{2},\right.\right.\right.$$

$$\left.\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]+$$

$$\left(10\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,-\frac{3}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]+\right.$$

$$(c+d)\,(-1+2\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,-\frac{5}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right)\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2\right)\right)\right)$$

Problem 615: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+f\,x])^m\,(c+d\,\text{Sin}[e+f\,x])^{3/2}\,dx$$

Optimal (type 6, 136 leaves, 4 steps):

$$\left(\sqrt{2}\,(c-d)\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},-\frac{3}{2},\frac{3}{2}+m,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}\right]\right.$$

$$\left.\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$

$$\left(f\,(1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c-d}}\right)$$

Result (type 6, 365 leaves):

$$-\left(\left(3\sqrt{2}\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{3}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\sqrt{1+\text{Sin}[e+fx]}\,(a(1+\text{Sin}[e+fx]))^m\,(c+d\,\text{Sin}[e+fx])^{3/2}\,\text{Tan}\left[\frac{1}{4}(2e-\pi+2fx)\right]\right)\Big/\left(f\sqrt{\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}\left(-3(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{3}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]+\left(6d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,-\frac{1}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]+(c+d)(-1+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,-\frac{3}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\right)\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)\right)\right)$$

Problem 616: Result more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Sin}[e+fx])^m\sqrt{c+d\,\text{Sin}[e+fx]}\,dx$$

Optimal (type 6, 131 leaves, 4 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},-\frac{1}{2},\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+fx]),-\frac{d(1+\text{Sin}[e+fx])}{c-d}\right]\text{Cos}[e+fx]\,(a+a\,\text{Sin}[e+fx])^m\sqrt{c+d\,\text{Sin}[e+fx]}\right)\Big/\left(f(1+2m)\sqrt{1-\text{Sin}[e+fx]}\sqrt{\frac{c+d\,\text{Sin}[e+fx]}{c-d}}\right)$$

Result (type 6, 365 leaves):

$$-\left(\left(3\sqrt{2}\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{1}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\sqrt{1+\text{Sin}[e+fx]}\,(a\,(1+\text{Sin}[e+fx]))^m\sqrt{c+d\,\text{Sin}[e+fx]}\,\text{Tan}\left[\frac{1}{4}(2e-\pi+2fx)\right]\right)\middle/\left(f\sqrt{\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}\left(-3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,-\frac{1}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]+\left(2\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,\frac{1}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]+(c+d)\,(-1+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,-\frac{1}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\right)\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)\right)\right)$$

Problem 617: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+fx])^m}{\sqrt{c+d\,\text{Sin}[e+fx]}}\,dx$$

Optimal (type 6, 131 leaves, 4 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},\frac{1}{2},\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+fx]),-\frac{d\,(1+\text{Sin}[e+fx])}{c-d}\right]\text{Cos}[e+fx]\,(a+a\,\text{Sin}[e+fx])^m\sqrt{\frac{c+d\,\text{Sin}[e+fx]}{c-d}}\right)\middle/\left(f\,(1+2m)\sqrt{1-\text{Sin}[e+fx]}\sqrt{c+d\,\text{Sin}[e+fx]}\right)$$

Result (type 6, 373 leaves):

$$-\left(\left(6\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{1}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right.\right.$$
$$\left(\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2\right)^{-\frac{1}{2}+m}\,\text{Cot}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]\,(a\,(1+\text{Sin}[e+f\,x]))^m$$
$$\left.\left(\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2\right)^{\frac{1}{2}-m}\right)\Bigg/\left(f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right.$$
$$\left(3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{1}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]+\right.$$
$$\left(2\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,\frac{3}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]-\right.$$
$$(c+d)\,(-1+2\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,\frac{1}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\frac{2\,d\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2}{c+d}\right]\right)\,\text{Sin}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^2\right)\right)\right)$$

Problem 618: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+f\,x])^m}{(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 6, 138 leaves, 4 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},\frac{3}{2},\frac{3}{2}+m,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}\right]\right.$$
$$\left.\text{Cos}[e+f\,x]\,(a+a\,\text{Sin}[e+f\,x])^m\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c-d}}\right)\Bigg/$$
$$\left((c-d)\,f\,(1+2\,m)\,\sqrt{1-\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 6, 373 leaves):

$$-\left(\left(6\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\right.\right.$$

$$\left(\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}(2e+\pi+2fx)\right]\,(a\,(1+\text{Sin}[e+fx]))^m$$

$$\left.\left(\text{Sin}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2\right)^{\frac{1}{2}-m}\right)\Big/\left(f\,(c+d\,\text{Sin}[e+fx])^{3/2}\right.$$

$$\left(3\,(c+d)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{3}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]+\right.$$

$$\left(6\,d\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-m,\frac{5}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]-\right.$$

$$(c+d)\,(-1+2m)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-m,\frac{3}{2},\frac{5}{2},\text{Cos}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2,\right.$$

$$\left.\left.\left.\left.\frac{2\,d\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{c+d}\right]\right)\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)\right)\right)$$

Problem 619: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+a\,\text{Sin}[e+fx])^m}{(c+d\,\text{Sin}[e+fx])^{5/2}}\,dx$$

Optimal (type 6, 138 leaves, 4 steps):

$$\left(\sqrt{2}\,\text{AppellF1}\left[\frac{1}{2}+m,\frac{1}{2},\frac{5}{2},\frac{3}{2}+m,\frac{1}{2}(1+\text{Sin}[e+fx]),-\frac{d\,(1+\text{Sin}[e+fx])}{c-d}\right]\right.$$

$$\left.\text{Cos}[e+fx]\,(a+a\,\text{Sin}[e+fx])^m\sqrt{\frac{c+d\,\text{Sin}[e+fx]}{c-d}}\right)\Big/$$

$$\left((c-d)^2\,f\,(1+2m)\,\sqrt{1-\text{Sin}[e+fx]}\,\sqrt{c+d\,\text{Sin}[e+fx]}\right)$$

Result (type 6, 373 leaves):

$$-\Bigg(\Bigg(6\,(c+d)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-m,\frac{5}{2},\frac{3}{2},\text{Cos}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^2,\frac{2d\,\text{Sin}\big[\frac{1}{4}\,(2e-\pi+2fx)\big]^2}{c+d}\Big]$$

$$\left(\text{Cos}\Big[\frac{1}{4}\,(2e-\pi+2fx)\Big]^2\right)^{-\frac{1}{2}+m}\text{Cot}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]\,(a\,(1+\text{Sin}[e+fx]))^m$$

$$\left(\text{Sin}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^2\right)^{\frac{1}{2}-m}\Bigg)\Bigg/\Bigg(f\,(c+d\,\text{Sin}[e+fx])^{5/2}$$

$$\Bigg(3\,(c+d)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-m,\frac{5}{2},\frac{3}{2},\text{Cos}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^2,\frac{2d\,\text{Sin}\big[\frac{1}{4}\,(2e-\pi+2fx)\big]^2}{c+d}\Big]+$$

$$\Bigg(10\,d\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-m,\frac{7}{2},\frac{5}{2},\text{Cos}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^2,\frac{2d\,\text{Sin}\big[\frac{1}{4}\,(2e-\pi+2fx)\big]^2}{c+d}\Big]-$$

$$(c+d)\,(-1+2m)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-m,\frac{5}{2},\frac{5}{2},\text{Cos}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^2,$$

$$\frac{2d\,\text{Sin}\big[\frac{1}{4}\,(2e-\pi+2fx)\big]^2}{c+d}\Big]\Bigg)\,\text{Sin}\Big[\frac{1}{4}\,(2e-\pi+2fx)\Big]^2\Bigg)\Bigg)\Bigg)$$

Problem 628: Result more than twice size of optimal antiderivative.

$$\int (3-3\,\text{Sin}[e+fx])^{-1-m}\,(1+\text{Sin}[e+fx])^m\,dx$$

Optimal (type 3, 43 leaves, 1 step):

$$\frac{\text{Cos}[e+fx]\,(3-3\,\text{Sin}[e+fx])^{-1-m}\,(1+\text{Sin}[e+fx])^m}{f\,(1+2m)}$$

Result (type 3, 97 leaves):

$$\frac{1}{3\,(f+2fm)}\text{Cos}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]^{-1-2m}\left(\text{Cos}\Big[\frac{1}{2}\,(e+fx)\Big]-\text{Sin}\Big[\frac{1}{2}\,(e+fx)\Big]\right)^{2m}$$

$$(6-6\,\text{Sin}[e+fx])^{-m}\,(1+\text{Sin}[e+fx])^m\,\text{Sin}\Big[\frac{1}{4}\,(2e+\pi+2fx)\Big]$$

Problem 629: Result more than twice size of optimal antiderivative.

$$\int (3-4\,\text{Sin}[e+fx])^{-1-m}\,(1+\text{Sin}[e+fx])^m\,dx$$

Optimal (type 5, 83 leaves, 2 steps):

$$\Bigg(2^{1+m}\,\text{Cos}[e+fx]\,\text{Hypergeometric2F1}\Big[\frac{1}{2},1+m,\frac{3}{2},\frac{7\,(1-\text{Sin}[e+fx])}{1+\text{Sin}[e+fx]}\Big]$$

$$(3-4\,\text{Sin}[e+fx])^{-m}\,(-3+4\,\text{Sin}[e+fx])^m\Bigg)\Bigg/\,(f\,(1+\text{Sin}[e+fx]))$$

Result (type 5, 176 leaves):

$$\frac{1}{f}2\left(\text{Cos}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]$$
$$\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{7\,\text{Sin}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2}{3-4\,\text{Sin}[e+fx]}\right]\left(3-4\,\text{Sin}[e+fx]\right)^{-m}$$
$$\left(1+\text{Sin}[e+fx]\right)^m\left(\frac{\text{Cos}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2}{-3+4\,\text{Sin}[e+fx]}\right)^{\frac{1}{2}-m}\left(\text{Sin}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]^2\right)^{\frac{1}{2}-m}$$

Problem 630: Result more than twice size of optimal antiderivative.

$$\int\left(3-5\,\text{Sin}[e+fx]\right)^{-1-m}\left(1+\text{Sin}[e+fx]\right)^m\,dx$$

Optimal (type 5, 78 leaves, 2 steps):

$$\left(\text{Cos}[e+fx]\,\text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},\frac{4\left(1-\text{Sin}[e+fx]\right)}{1+\text{Sin}[e+fx]}\right]\right.$$
$$\left.\left(3-5\,\text{Sin}[e+fx]\right)^{-m}\left(-3+5\,\text{Sin}[e+fx]\right)^m\right)\Big/\left(f\left(1+\text{Sin}[e+fx]\right)\right)$$

Result (type 5, 184 leaves):

$$\frac{1}{f}2^{\frac{1}{2}-m}\left(\text{Cos}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]$$
$$\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{8\,\text{Sin}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2}{3-5\,\text{Sin}[e+fx]}\right]\left(3-5\,\text{Sin}[e+fx]\right)^{-m}$$
$$\left(1+\text{Sin}[e+fx]\right)^m\left(\frac{\text{Cos}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]^2}{-3+5\,\text{Sin}[e+fx]}\right)^{\frac{1}{2}-m}\left(\text{Sin}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]^2\right)^{\frac{1}{2}-m}$$

Problem 633: Result more than twice size of optimal antiderivative.

$$\int\left(3+3\,\text{Sin}[e+fx]\right)^{-1-m}\left(a+a\,\text{Sin}[e+fx]\right)^m\,dx$$

Optimal (type 3, 39 leaves, 2 steps):

$$-\frac{\text{Cos}[e+fx]\left(3+3\,\text{Sin}[e+fx]\right)^{-1-m}\left(a+a\,\text{Sin}[e+fx]\right)^m}{f}$$

Result (type 3, 104 leaves):

$$-\frac{1}{f}2^{-m}\times 3^{-1-m}\,\text{Cos}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]\left(\text{Cos}\left[\frac{1}{2}\left(e+fx\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+fx\right)\right]\right)^{2\,(1+m)}$$
$$\left(1+\text{Sin}[e+fx]\right)^{-1-m}\left(a\left(1+\text{Sin}[e+fx]\right)\right)^m\,\text{Sin}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]^{-1-2m}$$

Problem 634: Result more than twice size of optimal antiderivative.

$$\int (3+2\,\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^m\,dx$$

Optimal (type 5, 83 leaves, 2 steps):

$$-\frac{1}{f}\left(\frac{5}{2}\right)^{-1-m}\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{a-a\,\text{Sin}[e+f\,x]}{5\,(a+a\,\text{Sin}[e+f\,x])}\right](1+\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^m$$

Result (type 5, 179 leaves):

$$-\frac{1}{f}2\times 5^{-1-m}\left(\text{Cos}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]\text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{1}{5}\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2\text{Sec}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2\right](a\,(1+\text{Sin}[e+f\,x]))^m\,(3+2\,\text{Sin}[e+f\,x])^{-m}\left(\text{Sec}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2(3+2\,\text{Sin}[e+f\,x])\right)^m\left(\text{Sin}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2\right)^{\frac{1}{2}-m}$$

Problem 635: Result more than twice size of optimal antiderivative.

$$\int (3+\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^m\,dx$$

Optimal (type 5, 81 leaves, 2 steps):

$$-\frac{1}{f}2^{-1-m}\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{a-a\,\text{Sin}[e+f\,x]}{2\,(a+a\,\text{Sin}[e+f\,x])}\right](1+\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^m$$

Result (type 5, 166 leaves):

$$-\frac{1}{f}2^{-1-2\,m}\,\text{Cot}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]\text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{1}{2}\text{Cos}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2\text{Sec}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2\right](a\,(1+\text{Sin}[e+f\,x]))^m\left(\frac{\text{Cos}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2}{3+\text{Sin}[e+f\,x]}\right)^m\left(\text{Sec}\left[\frac{1}{4}(2\,e-\pi+2\,f\,x)\right]^2(3+\text{Sin}[e+f\,x])\right)^m\left(\text{Sin}\left[\frac{1}{4}(2\,e+\pi+2\,f\,x)\right]^2\right)^{-m}$$

Problem 637: Result more than twice size of optimal antiderivative.

$$\int (3-\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^m\,dx$$

Optimal (type 5, 72 leaves, 2 steps):

$$-\frac{1}{f}\text{Cos}[e+fx]\ \text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{2\,(a-a\,\text{Sin}[e+fx])}{a+a\,\text{Sin}[e+fx]}\right](1+\text{Sin}[e+fx])^{-1-m}\,(a+a\,\text{Sin}[e+fx])^m$$

Result (type 5, 184 leaves):

$$-\frac{1}{f}2^{\frac{1}{2}-m}\left(\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}(2e+\pi+2fx)\right]\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},-\frac{4\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{-3+\text{Sin}[e+fx]}\right](3-\text{Sin}[e+fx])^{-m}\left(-\frac{\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{-3+\text{Sin}[e+fx]}\right)^{\frac{1}{2}-m}(a\,(1+\text{Sin}[e+fx]))^m\left(\text{Sin}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2\right)^{\frac{1}{2}-m}$$

Problem 638: Result more than twice size of optimal antiderivative.

$$\int(3-2\,\text{Sin}[e+fx])^{-1-m}\,(a+a\,\text{Sin}[e+fx])^m\,dx$$

Optimal (type 5, 77 leaves, 2 steps):

$$-\frac{1}{f}2^{1+m}\,\text{Cos}[e+fx]\ \text{Hypergeometric2F1}\left[\frac{1}{2},1+m,\frac{3}{2},-\frac{5\,(a-a\,\text{Sin}[e+fx])}{a+a\,\text{Sin}[e+fx]}\right](1+\text{Sin}[e+fx])^{-1-m}\,(a+a\,\text{Sin}[e+fx])^m$$

Result (type 5, 179 leaves):

$$-\frac{1}{f}2\left(\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}(2e+\pi+2fx)\right]\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{5\,\text{Sin}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{3-2\,\text{Sin}[e+fx]}\right](3-2\,\text{Sin}[e+fx])^{-m}(a\,(1+\text{Sin}[e+fx]))^m\left(-\frac{\text{Cos}\left[\frac{1}{4}(2e-\pi+2fx)\right]^2}{-3+2\,\text{Sin}[e+fx]}\right)^{\frac{1}{2}-m}\left(\text{Sin}\left[\frac{1}{4}(2e+\pi+2fx)\right]^2\right)^{\frac{1}{2}-m}$$

Problem 639: Result more than twice size of optimal antiderivative.

$$\int(3-3\,\text{Sin}[e+fx])^{-1-m}\,(a+a\,\text{Sin}[e+fx])^m\,dx$$

Optimal (type 3, 45 leaves, 1 step):

$$\frac{\text{Cos}[e+fx]\,(3-3\,\text{Sin}[e+fx])^{-1-m}\,(a+a\,\text{Sin}[e+fx])^m}{f\,(1+2m)}$$

Result (type 3, 99 leaves):

$$\frac{1}{3\,(f+2\,f\,m)}\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^{-1-2\,m}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{2\,m}$$
$$(6-6\,\text{Sin}[e+f\,x])^{-m}\,(a\,(1+\text{Sin}[e+f\,x]))^{m}\,\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]$$

Problem 642: Result more than twice size of optimal antiderivative.

$$\int(-3+5\,\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^{m}\,dx$$

Optimal (type 5, 72 leaves, 2 steps):

$$-\frac{1}{f}\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1+m,\,\frac{3}{2},\,\frac{4\,(a-a\,\text{Sin}[e+f\,x])}{a+a\,\text{Sin}[e+f\,x]}\right]$$
$$(1+\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^{m}$$

Result (type 5, 154 leaves):

$$-\frac{1}{f}\left(\text{Cos}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^{2}\right)^{-\frac{1}{2}+m}\text{Cot}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]$$
$$\text{Hypergeometric2F1}\left[\frac{1}{2},\,1+m,\,\frac{3}{2},\,4\,\text{Tan}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^{2}\right]$$
$$(a\,(1+\text{Sin}[e+f\,x]))^{m}\left(\text{Sec}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]^{2}\,(-3+5\,\text{Sin}[e+f\,x])\right)^{m}$$
$$(-6+10\,\text{Sin}[e+f\,x])^{-m}\left(\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^{2}\right)^{\frac{1}{2}-m}$$

Problem 644: Result more than twice size of optimal antiderivative.

$$\int(-3+3\,\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^{m}\,dx$$

Optimal (type 3, 45 leaves, 1 step):

$$\frac{\text{Cos}[e+f\,x]\,(-3+3\,\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^{m}}{f\,(1+2\,m)}$$

Result (type 3, 110 leaves):

$$\frac{1}{f+2\,f\,m}2^{-m}\times3^{-1-m}\,\text{Cos}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]^{-1-2\,m}\left(\text{Cos}\left[\frac{1}{2}\,(e+f\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(e+f\,x)\right]\right)^{2\,(1+m)}$$
$$(-1+\text{Sin}[e+f\,x])^{-1-m}\,(a\,(1+\text{Sin}[e+f\,x]))^{m}\,\text{Sin}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]$$

Problem 650: Result more than twice size of optimal antiderivative.

$$\int(-3-3\,\text{Sin}[e+f\,x])^{-1-m}\,(a+a\,\text{Sin}[e+f\,x])^{m}\,dx$$

Optimal (type 3, 39 leaves, 2 steps):

$$-\frac{\text{Cos}[e+f x] \left(-3-3 \text{Sin}[e+f x]\right)^{-1-m} \left(a+a \text{Sin}[e+f x]\right)^m}{f}$$

Result (type 3, 106 leaves):

$$-\frac{1}{f}2^{-m}\times 3^{-1-m}\,\text{Cos}\left[\frac{1}{4}\left(2 e+\pi+2 f x\right)\right]\left(\text{Cos}\left[\frac{1}{2}\left(e+f x\right)\right]+\text{Sin}\left[\frac{1}{2}\left(e+f x\right)\right]\right)^{2(1+m)} \left(-1-\text{Sin}[e+f x]\right)^{-1-m}\left(a\left(1+\text{Sin}[e+f x]\right)\right)^m \text{Sin}\left[\frac{1}{4}\left(2 e+\pi+2 f x\right)\right]^{-1-2 m}$$

Problem 655: Unable to integrate problem.

$$\int\left(a+a \text{Sin}[e+f x]\right)^3 \left(c+d \text{Sin}[e+f x]\right)^n dx$$

Optimal (type 6, 107 leaves, 3 steps):

$$-\left(\left(8 \sqrt{2}\, a^3 \text{AppellF1}\left[\frac{1}{2},-\frac{5}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right] \text{Cos}[e+f x]\left(c+d \text{Sin}[e+f x]\right)^n \left(\frac{c+d \text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 27 leaves):

$$\int\left(a+a \text{Sin}[e+f x]\right)^3 \left(c+d \text{Sin}[e+f x]\right)^n dx$$

Problem 656: Unable to integrate problem.

$$\int\left(a+a \text{Sin}[e+f x]\right)^2 \left(c+d \text{Sin}[e+f x]\right)^n dx$$

Optimal (type 6, 107 leaves, 3 steps):

$$-\left(\left(4 \sqrt{2}\, a^2 \text{AppellF1}\left[\frac{1}{2},-\frac{3}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right] \text{Cos}[e+f x]\left(c+d \text{Sin}[e+f x]\right)^n \left(\frac{c+d \text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 27 leaves):

$$\int\left(a+a \text{Sin}[e+f x]\right)^2 \left(c+d \text{Sin}[e+f x]\right)^n dx$$

Problem 657: Unable to integrate problem.

$$\int\left(a+a \text{Sin}[e+f x]\right) \left(c+d \text{Sin}[e+f x]\right)^n dx$$

Optimal (type 6, 105 leaves, 3 steps):

$$-\left(\left(2\sqrt{2}\ a\ \text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right]\ \text{Cos}[e+f x]\ \left(c+d\,\text{Sin}[e+f x]\right)^n\left(\frac{c+d\,\text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 25 leaves):

$$\int\left(a+a\,\text{Sin}[e+f x]\right)\left(c+d\,\text{Sin}[e+f x]\right)^n\,dx$$

Problem 659: Unable to integrate problem.

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{a+a\,\text{Sin}[e+f x]}\,dx$$

Optimal (type 6, 107 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},\frac{3}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right]\ \text{Cos}[e+f x]\ \left(c+d\,\text{Sin}[e+f x]\right)^n\left(\frac{c+d\,\text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(\sqrt{2}\ a\ f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 27 leaves):

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{a+a\,\text{Sin}[e+f x]}\,dx$$

Problem 660: Unable to integrate problem.

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{\left(a+a\,\text{Sin}[e+f x]\right)^2}\,dx$$

Optimal (type 6, 109 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},\frac{5}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right]\ \text{Cos}[e+f x]\ \left(c+d\,\text{Sin}[e+f x]\right)^n\left(\frac{c+d\,\text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(2\sqrt{2}\ a^2\ f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 27 leaves):

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{\left(a+a\,\text{Sin}[e+f x]\right)^2}\,dx$$

Problem 661: Unable to integrate problem.

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{\left(a+a\,\text{Sin}[e+f x]\right)^3}\,dx$$

Optimal (type 6, 109 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},\frac{7}{2},-n,\frac{3}{2},\frac{1}{2}\left(1-\text{Sin}[e+f x]\right),\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right]\text{Cos}[e+f x]\left(c+d\,\text{Sin}[e+f x]\right)^n\left(\frac{c+d\,\text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(4\sqrt{2}\,a^3 f\sqrt{1+\text{Sin}[e+f x]}\right)\right)$$

Result (type 8, 27 leaves):

$$\int\frac{\left(c+d\,\text{Sin}[e+f x]\right)^n}{\left(a+a\,\text{Sin}[e+f x]\right)^3}\,dx$$

Problem 662: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\left(a+a\,\text{Sin}[e+f x]\right)^{5/2}\left(c+d\,\text{Sin}[e+f x]\right)^n\,dx$$

Optimal (type 5, 257 leaves, 5 steps):

$$\frac{2 a^3\left(3 c-d\left(11+4 n\right)\right)\text{Cos}[e+f x]\left(c+d\,\text{Sin}[e+f x]\right)^{1+n}}{d^2 f\left(3+2 n\right)\left(5+2 n\right)\sqrt{a+a\,\text{Sin}[e+f x]}}-\frac{2 a^2\,\text{Cos}[e+f x]\sqrt{a+a\,\text{Sin}[e+f x]}\left(c+d\,\text{Sin}[e+f x]\right)^{1+n}}{d f\left(5+2 n\right)}-\left(2 a^3\left(3 c^2-2 c d\left(7+4 n\right)+d^2\left(43+56 n+16 n^2\right)\right)\text{Cos}[e+f x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},-n,\frac{3}{2},\frac{d\left(1-\text{Sin}[e+f x]\right)}{c+d}\right]\left(c+d\,\text{Sin}[e+f x]\right)^n\left(\frac{c+d\,\text{Sin}[e+f x]}{c+d}\right)^{-n}\right)\Big/\left(d^2 f\left(3+2 n\right)\left(5+2 n\right)\sqrt{a+a\,\text{Sin}[e+f x]}\right)$$

Result (type 6, 577 leaves):

$$\left(2\,a\,\text{Cos}[e+f\,x]\,(1+\text{Sin}[e+f\,x])\,(c+d\,\text{Sin}[e+f\,x])^{2\,n}\left(c+\frac{d\,(-a+a\,(1+\text{Sin}[e+f\,x]))}{a}\right)^{-n}\right.$$

$$\left(-\frac{1}{d^2\,(1+n)}a\,(c+d)\,\text{Hypergeometric2F1}\left[-\frac{1}{2},\,1+n,\,2+n,\,\frac{a\,c-a\,d+a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c+a\,d}\right]\right.$$

$$\sqrt{\frac{d\,(2\,a-a\,(1+\text{Sin}[e+f\,x]))}{a\,(c+d)}}\,(a\,(c-d)+a\,d\,(1+\text{Sin}[e+f\,x]))+$$

$$\frac{1}{d\,(1+n)}2\,a\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,1+n,\,2+n,\,\frac{a\,c-a\,d+a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c+a\,d}\right]$$

$$\sqrt{\frac{d\,(2\,a-a\,(1+\text{Sin}[e+f\,x]))}{a\,(c+d)}}\,(a\,(c-d)+a\,d\,(1+\text{Sin}[e+f\,x]))+$$

$$\left(3\,a^2\,(c-d)\,\text{AppellF1}\left[2,\,-\frac{1}{2},\,-n,\,3,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\,-\frac{a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c-a\,d}\right]\right.$$

$$\left.(1+\text{Sin}[e+f\,x])^2\,(-2\,a+a\,(1+\text{Sin}[e+f\,x]))\right)\Big/$$

$$\left(12\,a\,(c-d)\,\text{AppellF1}\left[2,\,-\frac{1}{2},\,-n,\,3,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\,-\frac{a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c-a\,d}\right]+\right.$$

$$a\left(4\,d\,n\,\text{AppellF1}\left[3,\,-\frac{1}{2},\,1-n,\,4,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\,-\frac{a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c-a\,d}\right]+\right.$$

$$\left.(-c+d)\,\text{AppellF1}\left[3,\,\frac{1}{2},\,-n,\,4,\,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\,-\frac{a\,d\,(1+\text{Sin}[e+f\,x])}{a\,c-a\,d}\right]\right)\,(1+$$

$$\left.\left.\left.\text{Sin}[e+f\,x])\right)\right)\right)\Big/$$

$$\left(f\,\sqrt{a\,(1+\text{Sin}[e+f\,x])}\,\sqrt{\frac{2\,a^2\,(1+\text{Sin}[e+f\,x])-a^2\,(1+\text{Sin}[e+f\,x])^2}{a^2}}\right.$$

$$\left.\sqrt{1-\frac{(-a+a\,(1+\text{Sin}[e+f\,x]))^2}{a^2}}\right)$$

Problem 664: Unable to integrate problem.

$$\int\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^n\,dx$$

Optimal (type 5, 85 leaves, 3 steps):

$$-\left(\left(2\,a\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},-n,\frac{3}{2},\frac{d\,(1-\text{Sin}[e+f\,x])}{c+d}\right]\right.\right.$$
$$\left.\left.(c+d\,\text{Sin}[e+f\,x])^n\left(\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}\right)^{-n}\right)\Big/\left(f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\right)\right)$$

Result (type 8, 29 leaves):

$$\int\sqrt{a+a\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^n\,dx$$

Problem 665: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^n}{\sqrt{a+a\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 6, 99 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},-n,1,\frac{3}{2},\frac{d\,(1-\text{Sin}[e+f\,x])}{c+d},\frac{1}{2}\,(1-\text{Sin}[e+f\,x])\right]\right.\right.$$
$$\left.\left.\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^n\left(\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}\right)^{-n}\right)\Big/\left(f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\right)\right)$$

Result (type 6, 494 leaves):

$$\frac{1}{a\,f}\text{Sec}[e+f\,x]\,(a\,(1+\text{Sin}[e+f\,x]))^{3/2}\,(c+d\,\text{Sin}[e+f\,x])^n$$
$$\left(\left(4\,(c-d)\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\frac{d\,(1+\text{Sin}[e+f\,x])}{-c+d}\right]\right)\Big/\right.$$
$$\left(8\,a\,(c-d)\,\text{AppellF1}\left[1,\frac{1}{2},-n,2,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\frac{d\,(1+\text{Sin}[e+f\,x])}{-c+d}\right]+\right.$$
$$a\left(4\,d\,n\,\text{AppellF1}\left[2,\frac{1}{2},1-n,3,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\frac{d\,(1+\text{Sin}[e+f\,x])}{-c+d}\right]+\right.$$
$$\left.(c-d)\,\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}\,(1+\text{Sin}[e+f\,x]),\frac{d\,(1+\text{Sin}[e+f\,x])}{-c+d}\right]\right)$$
$$\left.(1+\text{Sin}[e+f\,x])\right)-\left(d\,(-1+2\,n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\right.\right.$$
$$\left.\left.\frac{2}{1+\text{Sin}[e+f\,x]},\frac{-c+d}{d+d\,\text{Sin}[e+f\,x]}\right]\,(-1+\text{Sin}[e+f\,x])\right)\Big/\left(a\,(1+2\,n)\right.$$
$$\left(-2\,(c-d)\,n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{-c+d}{d+d\,\text{Sin}[e+f\,x]}\right]+\right.$$
$$2\,d\,\text{AppellF1}\left[\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f\,x]},\frac{-c+d}{d+d\,\text{Sin}[e+f\,x]}\right]+$$
$$d\,(-1+2\,n)\,\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\right.$$
$$\left.\left.\left.\left.\frac{2}{1+\text{Sin}[e+f\,x]},\frac{-c+d}{d+d\,\text{Sin}[e+f\,x]}\right]\,(1+\text{Sin}[e+f\,x])\right)\right)\right)$$

Problem 666: Result more than twice size of optimal antiderivative.

$$\int \frac{(c + d \operatorname{Sin}[e + f x])^n}{(a + a \operatorname{Sin}[e + f x])^{3/2}} \, dx$$

Optimal (type 6, 104 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2}, -n, 2, \frac{3}{2}, \frac{d\,(1 - \operatorname{Sin}[e + f x])}{c + d}, \frac{1}{2}\,(1 - \operatorname{Sin}[e + f x])\right] \operatorname{Cos}[e + f x] \, (c + d \operatorname{Sin}[e + f x])^n \left(\frac{c + d \operatorname{Sin}[e + f x]}{c + d}\right)^{-n}\right) \middle/ \left(2\, a\, f\, \sqrt{a + a \operatorname{Sin}[e + f x]}\right)\right)$$

Result (type 6, 918 leaves):

$$\Bigg(\operatorname{Cos}[e + f x]\,(1 + \operatorname{Sin}[e + f x])\,(c + d \operatorname{Sin}[e + f x])^{2n}\left(c + \frac{d\,(-a + a\,(1 + \operatorname{Sin}[e + f x]))}{a}\right)^{-n}$$

$$\Bigg(\Bigg(4\, a^2\,(c - d)\,\text{AppellF1}\left[1, \frac{1}{2}, -n, 2, \frac{1}{2}\,(1 + \operatorname{Sin}[e + f x]), -\frac{a\, d\,(1 + \operatorname{Sin}[e + f x])}{a\, c - a\, d}\right](1 + \operatorname{Sin}[e + f x])\Bigg) \Bigg/$$

$$\Bigg(8\, a\,(c - d)\,\text{AppellF1}\left[1, \frac{1}{2}, -n, 2, \frac{1}{2}\,(1 + \operatorname{Sin}[e + f x]), -\frac{a\, d\,(1 + \operatorname{Sin}[e + f x])}{a\, c - a\, d}\right] +$$

$$a\,\Bigg(4\, d\, n\, \text{AppellF1}\left[2, \frac{1}{2}, 1 - n, 3, \frac{1}{2}\,(1 + \operatorname{Sin}[e + f x]), -\frac{a\, d\,(1 + \operatorname{Sin}[e + f x])}{a\, c - a\, d}\right] +$$

$$(c - d)\,\text{AppellF1}\left[2, \frac{3}{2}, -n, 3, \frac{1}{2}\,(1 + \operatorname{Sin}[e + f x]), -\frac{a\, d\,(1 + \operatorname{Sin}[e + f x])}{a\, c - a\, d}\right]\Bigg)$$

$$(1 + \operatorname{Sin}[e + f x])\Bigg) - \Bigg(a\, d\,(-1 + 2n)\,\text{AppellF1}\left[-\frac{1}{2} - n, -\frac{1}{2}, -n, \frac{1}{2} - n, \frac{2}{1 + \operatorname{Sin}[e + f x]},\right.$$

$$\left.\frac{-c + d}{d\,(1 + \operatorname{Sin}[e + f x])}\right](1 + \operatorname{Sin}[e + f x])\,(-2a + a\,(1 + \operatorname{Sin}[e + f x]))\Bigg) \Bigg/ \Bigg((1 + 2n)$$

$$\Bigg(2\, a\,\Bigg((-c + d)\, n\, \text{AppellF1}\left[\frac{1}{2} - n, -\frac{1}{2}, 1 - n, \frac{3}{2} - n, \frac{2}{1 + \operatorname{Sin}[e + f x]}, \frac{-c + d}{d\,(1 + \operatorname{Sin}[e + f x])}\right] +$$

$$d\, \text{AppellF1}\left[\frac{1}{2} - n, \frac{1}{2}, -n, \frac{3}{2} - n, \frac{2}{1 + \operatorname{Sin}[e + f x]}, \frac{-c + d}{d\,(1 + \operatorname{Sin}[e + f x])}\right]\Bigg) +$$

$$a\, d\,(-1 + 2n)\,\text{AppellF1}\left[-\frac{1}{2} - n, -\frac{1}{2}, -n, \frac{1}{2} - n, \frac{2}{1 + \operatorname{Sin}[e + f x]},\right.$$

$$\left.\frac{-c + d}{d\,(1 + \operatorname{Sin}[e + f x])}\right](1 + \operatorname{Sin}[e + f x])\Bigg)\Bigg) -$$

$$\Bigg(2\, a\, d\,(-3 + 2n)\,\text{AppellF1}\left[\frac{1}{2} - n, -\frac{1}{2}, -n, \frac{3}{2} - n, \frac{2}{1 + \operatorname{Sin}[e + f x]}, \frac{-c + d}{d\,(1 + \operatorname{Sin}[e + f x])}\right]$$

$$(-2a + a\,(1 + \operatorname{Sin}[e + f x]))\Bigg) \Bigg/ \Bigg((-1 + 2n)$$

$$\left(2\,a\,\left(\left(-c+d\right)\,n\,\text{AppellF1}\left[\frac{3}{2}-n,\,-\frac{1}{2},\,1-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]+\right.\right.$$
$$\left.d\,\text{AppellF1}\left[\frac{3}{2}-n,\,\frac{1}{2},\,-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]\right)+$$
$$a\,d\,\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{1}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{3}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\right.$$
$$\left.\left.\left.\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]\,\left(1+\text{Sin}[e+f\,x]\right)\right)\right)\right)\Big/$$
$$\left(2\,a^2\,f\,\sqrt{a\,\left(1+\text{Sin}[e+f\,x]\right)}\,\sqrt{\frac{2\,a^2\,\left(1+\text{Sin}[e+f\,x]\right)-a^2\,\left(1+\text{Sin}[e+f\,x]\right)^2}{a^2}}\right.$$
$$\left.\sqrt{1-\frac{\left(-a+a\,\left(1+\text{Sin}[e+f\,x]\right)\right)^2}{a^2}}\right)$$

Problem 667: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(c+d\,\text{Sin}[e+f\,x]\right)^n}{\left(a+a\,\text{Sin}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 6, 104 leaves, 3 steps):

$$-\left(\left(\text{AppellF1}\left[\frac{1}{2},\,-n,\,3,\,\frac{3}{2},\,\frac{d\,\left(1-\text{Sin}[e+f\,x]\right)}{c+d},\,\frac{1}{2}\,\left(1-\text{Sin}[e+f\,x]\right)\right]\,\text{Cos}[e+f\,x]\right.\right.$$
$$\left.\left.\left(c+d\,\text{Sin}[e+f\,x]\right)^n\,\left(\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}\right)^{-n}\right)\Big/\left(4\,a^2\,f\,\sqrt{a+a\,\text{Sin}[e+f\,x]}\right)\right)$$

Result (type 6, 1377 leaves):

$$\frac{1}{a\,f\,\sqrt{1-\frac{\left(-a+a\,\left(1+\text{Sin}[e+f\,x]\right)\right)^2}{a^2}}}\,2\,\text{Cos}[e+f\,x]\,\left(c+d\,\text{Sin}[e+f\,x]\right)^n\,\left(c+\frac{d\,\left(-a+a\,\left(1+\text{Sin}[e+f\,x]\right)\right)}{a}\right)^{-n}$$
$$\left(\left(\left(c-d\right)\,\text{AppellF1}\left[1,\,\frac{1}{2},\,-n,\,2,\,\frac{1}{2}\,\left(1+\text{Sin}[e+f\,x]\right),\,-\frac{a\,d\,\left(1+\text{Sin}[e+f\,x]\right)}{a\,c-a\,d}\right]\right.\right.$$
$$\left.\left(a\,\left(1+\text{Sin}[e+f\,x]\right)\right)^{3/2}\,\left(c+d\,\text{Sin}[e+f\,x]\right)^n\right)\Big/$$
$$\left(2\,a^2\,\left(8\,a\,\left(c-d\right)\,\text{AppellF1}\left[1,\,\frac{1}{2},\,-n,\,2,\,\frac{1}{2}\,\left(1+\text{Sin}[e+f\,x]\right),\,-\frac{a\,d\,\left(1+\text{Sin}[e+f\,x]\right)}{a\,c-a\,d}\right]+\right.\right.$$
$$a\,\left(4\,d\,n\,\text{AppellF1}\left[2,\,\frac{1}{2},\,1-n,\,3,\,\frac{1}{2}\,\left(1+\text{Sin}[e+f\,x]\right),\,-\frac{a\,d\,\left(1+\text{Sin}[e+f\,x]\right)}{a\,c-a\,d}\right]+\right.$$

$$\left(c-d\right)\text{AppellF1}\left[2,\frac{3}{2},-n,3,\frac{1}{2}\left(1+\text{Sin}[e+f x]\right),-\frac{a d\left(1+\text{Sin}[e+f x]\right)}{a c-a d}\right]\Bigg)$$

$$\left(1+\text{Sin}[e+f x]\right)\Bigg)\sqrt{\frac{2 a^2\left(1+\text{Sin}[e+f x]\right)-a^2\left(1+\text{Sin}[e+f x]\right)^2}{a^2}}\Bigg)-$$

$$\Bigg(d\left(-1+2 n\right)\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]$$

$$\left(a\left(1+\text{Sin}[e+f x]\right)\right)^{3/2}\left(c+d\,\text{Sin}[e+f x]\right)^n\left(-2 a+a\left(1+\text{Sin}[e+f x]\right)\right)\Bigg)\Bigg/\Bigg(8 a^3\left(1+2 n\right)$$

$$\Bigg(2 a\Bigg(\left(-c+d\right) n\,\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},1-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]+$$

$$d\,\text{AppellF1}\left[\frac{1}{2}-n,\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]\Bigg)+$$

$$a d\left(-1+2 n\right)\text{AppellF1}\left[-\frac{1}{2}-n,-\frac{1}{2},-n,\frac{1}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]$$

$$\left(1+\text{Sin}[e+f x]\right)\Bigg)\sqrt{\frac{2 a^2\left(1+\text{Sin}[e+f x]\right)-a^2\left(1+\text{Sin}[e+f x]\right)^2}{a^2}}\Bigg)-$$

$$\Bigg(d\left(-3+2 n\right)\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]$$

$$\sqrt{a\left(1+\text{Sin}[e+f x]\right)}\left(c+d\,\text{Sin}[e+f x]\right)^n\left(-2 a+a\left(1+\text{Sin}[e+f x]\right)\right)\Bigg)\Bigg/\Bigg(4 a^2\left(-1+2 n\right)$$

$$\Bigg(2 a\Bigg(\left(-c+d\right) n\,\text{AppellF1}\left[\frac{3}{2}-n,-\frac{1}{2},1-n,\frac{5}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]+$$

$$d\,\text{AppellF1}\left[\frac{3}{2}-n,\frac{1}{2},-n,\frac{5}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]\Bigg)+$$

$$a d\left(-3+2 n\right)\text{AppellF1}\left[\frac{1}{2}-n,-\frac{1}{2},-n,\frac{3}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]$$

$$\left(1+\text{Sin}[e+f x]\right)\Bigg)\sqrt{\frac{2 a^2\left(1+\text{Sin}[e+f x]\right)-a^2\left(1+\text{Sin}[e+f x]\right)^2}{a^2}}\Bigg)-$$

$$\Bigg(d\left(-5+2 n\right)\text{AppellF1}\left[\frac{3}{2}-n,-\frac{1}{2},-n,\frac{5}{2}-n,\frac{2}{1+\text{Sin}[e+f x]},\frac{-c+d}{d\left(1+\text{Sin}[e+f x]\right)}\right]$$

$$\left(c+d\,\text{Sin}[e+f x]\right)^n\left(-2 a+a\left(1+\text{Sin}[e+f x]\right)\right)\Bigg)\Bigg/\Bigg(2 a\left(-3+2 n\right)\sqrt{a\left(1+\text{Sin}[e+f x]\right)}$$

$$\left(2\,a\,\left(\left(-c+d\right)\,n\,\text{AppellF1}\left[\frac{5}{2}-n,\,-\frac{1}{2},\,1-n,\,\frac{7}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]+\right.\right.$$
$$\left.d\,\text{AppellF1}\left[\frac{5}{2}-n,\,\frac{1}{2},\,-n,\,\frac{7}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]\right)+$$
$$a\,d\,\left(-5+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2}-n,\,-\frac{1}{2},\,-n,\,\frac{5}{2}-n,\,\frac{2}{1+\text{Sin}[e+f\,x]},\,\frac{-c+d}{d\,\left(1+\text{Sin}[e+f\,x]\right)}\right]$$
$$\left.\left.\left(1+\text{Sin}[e+f\,x]\right)\right)\,\sqrt{\frac{2\,a^2\,\left(1+\text{Sin}[e+f\,x]\right)-a^2\,\left(1+\text{Sin}[e+f\,x]\right)^2}{a^2}}\right)\right)$$

Problem 668: Result more than twice size of optimal antiderivative.

$$\int\left(a+a\,\text{Sin}[e+f\,x]\right)\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{1/3}\,dx$$

Optimal (type 6, 107 leaves, 3 steps):

$$-\left(\left(2\,\sqrt{2}\,a\,\text{AppellF1}\left[\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{3},\,\frac{3}{2},\,\frac{1}{2}\,\left(1-\text{Sin}[e+f\,x]\right),\,\frac{d\,\left(1-\text{Sin}[e+f\,x]\right)}{c+d}\right]\right.\right.$$
$$\left.\left.\text{Cos}[e+f\,x]\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{1/3}\right)\Big/\left(f\,\sqrt{1+\text{Sin}[e+f\,x]}\,\left(\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}\right)^{1/3}\right)\right)$$

Result (type 6, 1736 leaves):

$$a\,\left(\left(c\,\text{Sec}[e]\,\left(1+\text{Sin}[e+f\,x]\right)\right.\right.$$
$$\left(-\left(\left(\text{AppellF1}\left[-\frac{2}{3},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{3},\,-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.$$
$$\left.\left.\left.\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),$$
$$-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\right)\Big/$$
$$\left.\left(d\,\sqrt{1+\text{Cot}[e]^2}\,\left(-1-\frac{c\,\text{Csc}[e]}{d\,\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\Big]\,\text{Cot}[e]$$
$$\left.\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\,\sqrt{\left(\left(d\,\sqrt{1+\text{Cot}[e]^2}\right.\right.}+\right.$$
$$\left.\left.d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\,\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)}$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)^{2/3}\Bigg)\Bigg)-$$

$$\left(\left(3\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left(\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\right)\Big/$$

$$\left.\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)^{2/3}\right)\Bigg)\Big/$$

$$\left(4\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(d$$

$$\text{Sec}[e]\,\left(1+\text{Sin}[e+f\,x]\right)$$

$$\Bigg(-\Bigg(\Bigg(\text{AppellF1}\Big[-\frac{2}{3},-\frac{1}{2},-\frac{1}{2},\frac{1}{3},-\Bigg(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\right.\right.$$

$$\left.\left.\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\Bigg),$$

$$-\left(\left(\text{Csc}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\text{Cot}[e]^2}\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\Big]\,\text{Cot}[e]$$

$$\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Bigg)\Big/\left(\sqrt{1+\text{Cot}[e]^2}\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}+\right.\right.}\right.$$

$$\left.\left.d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)}$$

$$\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)^{2/3}\Bigg)\Bigg)-$$

$$\Bigg(\Bigg(3\,d\,\mathrm{Sin}[e]\,\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)\Bigg)\Bigg/$$

$$\left(d^2\,\mathrm{Cos}[e]^2+d^2\,\mathrm{Sin}[e]^2\right)-\frac{\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]}{\sqrt{1+\mathrm{Cot}[e]^2}}\Bigg)\Bigg/$$

$$\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)^{2/3}\Bigg)\Bigg)\Bigg/$$

$$\left(f\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\Bigg(\left(1+\mathrm{Sin}[e+f\,x]\right)$$

$$\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^{1/3}$$

$$\left(-\frac{3\,\mathrm{Cos}[e]\,\mathrm{Cos}[f\,x]}{4\,f}+\right.$$

$$\left.\frac{3\,\mathrm{Sin}[e]\,\mathrm{Sin}[f\,x]}{4\,f}+\frac{3\,(c+4\,d)\,\mathrm{Tan}[e]}{4\,d\,f}\right)\Bigg)\Bigg/$$

$$\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2+$$

$$\frac{1}{4\,f\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\mathrm{Tan}[e]^2}}$$

$$3$$

$$\mathrm{AppellF1}\Big[$$

$$\frac{1}{3},$$

$$\frac{1}{2},$$

$$\frac{1}{2},$$

$$\frac{4}{3},$$

$$-\Bigg(\Bigg(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\Bigg)\Bigg/$$

$$\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\Bigg),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)^{1/3}+$$

$$\frac{1}{d\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$3$$

$$c$$

$$\text{AppellF1}\left[\frac{1}{3},\ \frac{1}{2},\ \frac{1}{2},\ \frac{4}{3},\right.$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\right.$$

$$\left.\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Big]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\left(1+\text{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$

$$\left(c + d \, \text{Cos}[e] \, \text{Sin}[f x + \text{ArcTan}[\text{Tan}[e]]] \sqrt{1 + \text{Tan}[e]^2}\right)^{1/3}\Bigg)$$

Problem 669: Result more than twice size of optimal antiderivative.

$$\int \frac{a + a \, \text{Sin}[e + f x]}{(c + d \, \text{Sin}[e + f x])^{1/3}} \, dx$$

Optimal (type 6, 107 leaves, 3 steps):

$$-\left(\left(2 \sqrt{2} \, a \, \text{AppellF1}\left[\frac{1}{2}, -\frac{1}{2}, \frac{1}{3}, \frac{3}{2}, \frac{1}{2} (1 - \text{Sin}[e + f x]), \frac{d (1 - \text{Sin}[e + f x])}{c + d}\right] \text{Cos}[e + f x] \left(\frac{c + d \, \text{Sin}[e + f x]}{c + d}\right)^{1/3}\right) \Big/ \left(f \sqrt{1 + \text{Sin}[e + f x]} \, (c + d \, \text{Sin}[e + f x])^{1/3}\right)\right)$$

Result (type 6, 886 leaves):

$$a \left(\left(\text{Sec}[e] \, (1 + \text{Sin}[e + f x])\right.\right.$$

$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{3}, -\frac{1}{2}, -\frac{1}{2}, \frac{2}{3}, -\left(\left(\text{Csc}[e] \left(c + d \, \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]]\right.\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{1 + \text{Cot}[e]^2} \, \text{Sin}[e]\right)\right) \Big/ \left(d \sqrt{1 + \text{Cot}[e]^2} \left(1 - \frac{c \, \text{Csc}[e]}{d \sqrt{1 + \text{Cot}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Csc}[e] \left(c + d \, \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]] \sqrt{1 + \text{Cot}[e]^2} \, \text{Sin}[e]\right)\right) \Big/\right.$$

$$\left.\left(d \sqrt{1 + \text{Cot}[e]^2} \left(-1 - \frac{c \, \text{Csc}[e]}{d \sqrt{1 + \text{Cot}[e]^2}}\right)\right)\right)\Bigg] \, \text{Cot}[e]$$

$$\text{Sin}[f x - \text{ArcTan}[\text{Cot}[e]]]\Bigg) \Big/ \left(\sqrt{1 + \text{Cot}[e]^2} \sqrt{\left(\left(d \sqrt{1 + \text{Cot}[e]^2} + \right.\right.}\right.$$

$$\left.\left.d \, \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]] \sqrt{1 + \text{Cot}[e]^2}\right) \Big/ \left(d \sqrt{1 + \text{Cot}[e]^2} - c \, \text{Csc}[e]\right)\right)$$

$$\sqrt{\left(\left(d \sqrt{1 + \text{Cot}[e]^2} - d \, \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]] \sqrt{1 + \text{Cot}[e]^2}\right) \Big/ \right.}$$

$$\left.\left(d \sqrt{1 + \text{Cot}[e]^2} + c \, \text{Csc}[e]\right)\right)$$

$$\left.\left(c + d \, \text{Cos}[f x - \text{ArcTan}[\text{Cot}[e]]] \sqrt{1 + \text{Cot}[e]^2} \, \text{Sin}[e]\right)^{1/3}\right)\Bigg) -$$

$$\left(\left(3\,d\,\mathrm{Sin}[e]\,\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)\right)\Big/\right.$$

$$\left(2\,\left(d^2\,\mathrm{Cos}[e]^2+d^2\,\mathrm{Sin}[e]^2\right)\right)-\frac{\mathrm{Cot}[e]\,\mathrm{Sin}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]}{\sqrt{1+\mathrm{Cot}[e]^2}}\Bigg)\Big/$$

$$\left.\left(c+d\,\mathrm{Cos}[f\,x-\mathrm{ArcTan}[\mathrm{Cot}[e]]]\,\sqrt{1+\mathrm{Cot}[e]^2}\,\mathrm{Sin}[e]\right)^{1/3}\right)\Bigg)\Big/$$

$$\left(f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\frac{3\,\left(1+\mathrm{Sin}[e+f\,x]\right)\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^{2/3}\,\mathrm{Tan}[e]}{2\,d\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2}+$$

$$\frac{1}{2\,d\,f\,\left(\mathrm{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\mathrm{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\,\sqrt{1+\mathrm{Tan}[e]^2}}$$

$$3\,\mathrm{AppellF1}\Bigg[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},$$

$$-\left(\left(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\mathrm{Sec}[e]\,\left(c+d\,\mathrm{Cos}[e]\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}\right)\right)\Big/\left(d\,\sqrt{1+\mathrm{Tan}[e]^2}\,\left(-1-\frac{c\,\mathrm{Sec}[e]}{d\,\sqrt{1+\mathrm{Tan}[e]^2}}\right)\right)\right)\Bigg]$$

$$\mathrm{Sec}[e]\,\mathrm{Sec}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\left(1+\mathrm{Sin}[e+f\,x]\right)$$

$$\sqrt{\frac{d\,\sqrt{1+\mathrm{Tan}[e]^2}-d\,\mathrm{Sin}[f\,x+\mathrm{ArcTan}[\mathrm{Tan}[e]]]\,\sqrt{1+\mathrm{Tan}[e]^2}}{c\,\mathrm{Sec}[e]+d\,\sqrt{1+\mathrm{Tan}[e]^2}}}$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\sqrt{1+\text{Tan}[e]^2}}}$$
$$\left.\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}\right)^{2/3}\right)$$

Problem 670: Result more than twice size of optimal antiderivative.

$$\int \frac{a+a\,\text{Sin}[e+f\,x]}{(c+d\,\text{Sin}[e+f\,x])^{4/3}}\,dx$$

Optimal (type 6, 112 leaves, 3 steps):

$$-\left(\left(2\sqrt{2}\,a\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},\frac{4}{3},\frac{3}{2},\frac{1}{2}\,(1-\text{Sin}[e+f\,x]),\frac{d\,(1-\text{Sin}[e+f\,x])}{c+d}\right]\text{Cos}[e+f\,x]\right.\right.$$
$$\left.\left.\left(\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}\right)^{1/3}\right)\Big/\left((c+d)\,f\,\sqrt{1+\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^{1/3}\right)\right)$$

Result (type 6, 942 leaves):

$$a\left(\left((1+\text{Sin}[e+f\,x])\,(c+d\,\text{Sin}[e+f\,x])^{2/3}\right.\right.$$
$$\left.\left.\left(-\frac{3\,\text{Csc}[e]\,\text{Sec}[e]}{d\,(c+d)\,f}+\frac{3\,\text{Csc}[e]\,(c\,\text{Cos}[e]+d\,\text{Sin}[f\,x])}{d\,(c+d)\,f\,(c+d\,\text{Sin}[e+f\,x])}\right)\right)\right/$$
$$\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2-\left(2\,\text{Sec}[e]\,(1+\text{Sin}[e+f\,x])\right.$$
$$\left(-\left(\left(\text{AppellF1}\left[-\frac{1}{3},-\frac{1}{2},-\frac{1}{2},\frac{2}{3},-\left(\left(\text{Csc}[e]\,\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right.\right.\right.\right.\right.\right.$$
$$\left.\left.\left.\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\left(1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right),-\left(\left(\text{Csc}[e]\right.\right.$$
$$\left.\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}\right.$$
$$\left.\left.\left.\left(-1-\frac{c\,\text{Csc}[e]}{d\sqrt{1+\text{Cot}[e]^2}}\right)\right)\right)\right]\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\Big)\Big/$$
$$\left(\sqrt{1+\text{Cot}[e]^2}\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\,\sqrt{1+\text{Cot}[e]^2}\right)\Big/\right.}\right.$$

$$\left(d\sqrt{1+\text{Cot}[e]^2}-c\,\text{Csc}[e]\right)\Bigg)\sqrt{\left(\left(d\sqrt{1+\text{Cot}[e]^2}-d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\right)\Big/\left(d\sqrt{1+\text{Cot}[e]^2}+c\,\text{Csc}[e]\right)\right)}$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)^{1/3}\Bigg)\Bigg)-$$

$$\Bigg(\left(3\,d\,\text{Sin}[e]\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)\right)\Big/$$

$$\left(2\left(d^2\,\text{Cos}[e]^2+d^2\,\text{Sin}[e]^2\right)\right)-\frac{\text{Cot}[e]\,\text{Sin}[f\,x-\text{ArcTan}[\text{Cot}[e]]]}{\sqrt{1+\text{Cot}[e]^2}}\Bigg)\Big/$$

$$\left(c+d\,\text{Cos}[f\,x-\text{ArcTan}[\text{Cot}[e]]]\sqrt{1+\text{Cot}[e]^2}\,\text{Sin}[e]\right)^{1/3}\Bigg)\Bigg)\Big/$$

$$\left((c+d)\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\right)+$$

$$\frac{1}{2\,d\,(c+d)\,f\left(\text{Cos}\left[\frac{e}{2}+\frac{f\,x}{2}\right]+\text{Sin}\left[\frac{e}{2}+\frac{f\,x}{2}\right]\right)^2\sqrt{1+\text{Tan}[e]^2}}$$

$$3\,\text{AppellF1}\Bigg[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right),$$

$$-\left(\left(\text{Sec}[e]\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\sqrt{1+\text{Tan}[e]^2}\right)\right)\Big/\left(d\sqrt{1+\text{Tan}[e]^2}\left(-1-\frac{c\,\text{Sec}[e]}{d\sqrt{1+\text{Tan}[e]^2}}\right)\right)\right)\Bigg]$$

$$\text{Sec}[e]\,\text{Sec}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,(1+\text{Sin}[e+f\,x])$$

$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}-d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{c\,\text{Sec}[e]+d\,\sqrt{1+\text{Tan}[e]^2}}}$$
$$\sqrt{\frac{d\sqrt{1+\text{Tan}[e]^2}+d\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}}{-c\,\text{Sec}[e]+d\,\sqrt{1+\text{Tan}[e]^2}}}$$
$$\left.\left(c+d\,\text{Cos}[e]\,\text{Sin}[f\,x+\text{ArcTan}[\text{Tan}[e]]]\,\sqrt{1+\text{Tan}[e]^2}\right)^{2/3}\right)$$

Problem 692: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Sin}[e+f\,x])^3}{(c+d\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 255 leaves, 6 steps):

$$\frac{b^3\,x}{d^3}-\frac{1}{d^3\,(c^2-d^2)^{5/2}\,f}\left(9\,a^2\,b\,c\,d^4-a^3\,d^3\,(2\,c^2+d^2)-3\,a\,b^2\,d^3\,(c^2+2\,d^2)+b^3\,(2\,c^5-5\,c^3\,d^2+6\,c\,d^4)\right)$$
$$\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{c^2-d^2}}\right]+\frac{(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,(a+b\,\text{Sin}[e+f\,x])}{2\,d\,(c^2-d^2)\,f\,(c+d\,\text{Sin}[e+f\,x])^2}+$$
$$\frac{(b\,c-a\,d)^2\,(2\,b\,c^2+3\,a\,c\,d-5\,b\,d^2)\,\text{Cos}[e+f\,x]}{2\,d^2\,(c^2-d^2)^2\,f\,(c+d\,\text{Sin}[e+f\,x])}$$

Result (type 3, 521 leaves):

$$\frac{1}{4\,d^3\,f}\left(-\frac{1}{(c^2-d^2)^{5/2}}4\,\left(9\,a^2\,b\,c\,d^4-a^3\,d^3\,(2\,c^2+d^2)-3\,a\,b^2\,d^3\,(c^2+2\,d^2)+b^3\,(2\,c^5-5\,c^3\,d^2+6\,c\,d^4)\right)\right.$$
$$\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]}{\sqrt{c^2-d^2}}\right]+$$
$$\frac{1}{(c^2-d^2)^2\,(c+d\,\text{Sin}[e+f\,x])^2}\left(4\,b^3\,c^6\,e-6\,b^3\,c^4\,d^2\,e+2\,b^3\,d^6\,e+4\,b^3\,c^6\,f\,x-6\,b^3\,c^4\,d^2\,f\,x+\right.$$
$$2\,b^3\,d^6\,f\,x-2\,d\,(b\,c-a\,d)^2\,(-2\,b\,c^3-4\,a\,c^2\,d+5\,b\,c\,d^2+a\,d^3)\,\text{Cos}[e+f\,x]-$$
$$2\,b^3\,(-c^2\,d+d^3)^2\,(e+f\,x)\,\text{Cos}[2\,(e+f\,x)]+8\,b^3\,c^5\,d\,e\,\text{Sin}[e+f\,x]-$$
$$16\,b^3\,c^3\,d^3\,e\,\text{Sin}[e+f\,x]+8\,b^3\,c\,d^5\,e\,\text{Sin}[e+f\,x]+8\,b^3\,c^5\,d\,f\,x\,\text{Sin}[e+f\,x]-$$
$$16\,b^3\,c^3\,d^3\,f\,x\,\text{Sin}[e+f\,x]+8\,b^3\,c\,d^5\,f\,x\,\text{Sin}[e+f\,x]+3\,b^3\,c^4\,d^2\,\text{Sin}[2\,(e+f\,x)]-$$
$$3\,a\,b^2\,c^3\,d^3\,\text{Sin}[2\,(e+f\,x)]-3\,a^2\,b\,c^2\,d^4\,\text{Sin}[2\,(e+f\,x)]-6\,b^3\,c^2\,d^4\,\text{Sin}[2\,(e+f\,x)]+$$
$$\left.\left.3\,a^3\,c\,d^5\,\text{Sin}[2\,(e+f\,x)]+12\,a\,b^2\,c\,d^5\,\text{Sin}[2\,(e+f\,x)]-6\,a^2\,b\,d^6\,\text{Sin}[2\,(e+f\,x)]\right)\right)$$

Problem 714: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^5}{(a+b\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 534 leaves, 8 steps):

$$-\frac{d^3\left(30\,a\,b\,c\,d-12\,a^2\,d^2-b^2\left(20\,c^2+d^2\right)\right)x}{2\,b^5}+\frac{1}{b^5\left(a^2-b^2\right)^{5/2}f}(b\,c-a\,d)^3\left(6\,a^3\,b\,c\,d-12\,a\,b^3\,c\,d+12\,a^4\,d^2+a^2\,b^2\left(2\,c^2-29\,d^2\right)+b^4\left(c^2+20\,d^2\right)\right)\text{ArcTan}\left[\frac{b+a\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\sqrt{a^2-b^2}}\right]-\frac{1}{2\,b^4\left(a^2-b^2\right)^2f}d\left(30\,a^4\,b\,c\,d^3-12\,a^5\,d^4-a^3\,b^2\,d^2\left(16\,c^2-21\,d^2\right)-b^5\,c\,d\left(17\,c^2-10\,d^2\right)-a^2\,b^3\,c\,d\left(4\,c^2+55\,d^2\right)+a\,b^4\left(6\,c^4+43\,c^2\,d^2-6\,d^4\right)\right)\text{Cos}[e+f\,x]+\frac{1}{2\,b^3\left(a^2-b^2\right)^2f}d^2\left(7\,a^3\,b\,c\,d^2-6\,a^4\,d^3+b^4\,d\left(8\,c^2-d^2\right)+a^2\,b^2\,d\left(c^2+10\,d^2\right)-a\,b^3\,c\left(3\,c^2+16\,d^2\right)\right)\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]+\frac{(b\,c-a\,d)^2\left(3\,a\,b\,c+4\,a^2\,d-7\,b^2\,d\right)\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^2}{2\,b^2\left(a^2-b^2\right)^2f\,(a+b\,\text{Sin}[e+f\,x])}+\frac{(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^3}{2\,b\left(a^2-b^2\right)f\,(a+b\,\text{Sin}[e+f\,x])^2}$$

Result (type 3, 341 leaves):

$$\frac{1}{4\,b^5\,f}\left(2\,d^3\left(-30\,a\,b\,c\,d+12\,a^2\,d^2+b^2\left(20\,c^2+d^2\right)\right)(e+f\,x)+\frac{1}{\left(a^2-b^2\right)^{5/2}}4\,(b\,c-a\,d)^3\left(6\,a^3\,b\,c\,d-12\,a\,b^3\,c\,d+12\,a^4\,d^2+a^2\,b^2\left(2\,c^2-29\,d^2\right)+b^4\left(c^2+20\,d^2\right)\right)\text{ArcTan}\left[\frac{b+a\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]}{\sqrt{a^2-b^2}}\right]+2\,b\,d^4\,(-5\,b\,c+3\,a\,d)\,(\text{Cos}[e+f\,x]-i\,\text{Sin}[e+f\,x])+2\,b\,d^4\,(-5\,b\,c+3\,a\,d)\,(\text{Cos}[e+f\,x]+i\,\text{Sin}[e+f\,x])-\frac{2\,b\,(b\,c-a\,d)^5\,\text{Cos}[e+f\,x]}{\left(-a^2+b^2\right)(a+b\,\text{Sin}[e+f\,x])^2}+\frac{2\,b\,(b\,c-a\,d)^4\left(3\,a\,b\,c+7\,a^2\,d-10\,b^2\,d\right)\text{Cos}[e+f\,x]}{\left(a^2-b^2\right)^2(a+b\,\text{Sin}[e+f\,x])}-b^2\,d^5\,\text{Sin}[2\,(e+f\,x)]\right)$$

Problem 715: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^4}{(a+b\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 3, 318 leaves, 7 steps):

$$\frac{d^3 (4 b c - 3 a d) x}{b^4} + \frac{1}{b^4 (a^2 - b^2)^{5/2} f}$$
$$(b c - a d)^2 (4 a^3 b c d - 10 a b^3 c d + 6 a^4 d^2 + a^2 b^2 (2 c^2 - 15 d^2) + b^4 (c^2 + 12 d^2))$$
$$\text{ArcTan}\left[\frac{b + a \text{Tan}\left[\frac{1}{2} (e + f x)\right]}{\sqrt{a^2 - b^2}}\right] + \frac{d^2 (2 a b c d - 3 a^2 d^2 - b^2 (c^2 - 2 d^2)) \text{Cos}[e + f x]}{2 b^3 (a^2 - b^2) f} +$$
$$\frac{3 (b c - a d)^3 (a b c + a^2 d - 2 b^2 d) \text{Cos}[e + f x]}{2 b^3 (a^2 - b^2)^2 f (a + b \text{Sin}[e + f x])} + \frac{(b c - a d)^2 \text{Cos}[e + f x] (c + d \text{Sin}[e + f x])^2}{2 b (a^2 - b^2) f (a + b \text{Sin}[e + f x])^2}$$

Result (type 3, 966 leaves):

$$\frac{1}{b^4 (a^2 - b^2)^{5/2} f} (-b c + a d)^2 (2 a^2 b^2 c^2 + b^4 c^2 + 4 a^3 b c d - 10 a b^3 c d + 6 a^4 d^2 - 15 a^2 b^2 d^2 + 12 b^4 d^2)$$
$$\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{1}{2} (e + f x)\right] \left(b \text{Cos}\left[\frac{1}{2} (e + f x)\right] + a \text{Sin}\left[\frac{1}{2} (e + f x)\right]\right)}{\sqrt{a^2 - b^2}}\right] +$$
$$\frac{1}{4 b^4 (-a^2 + b^2)^2 f (a + b \text{Sin}[e + f x])^2} (16 a^6 b c d^3 (e + f x) - 24 a^4 b^3 c d^3 (e + f x) +$$
$$8 b^7 c d^3 (e + f x) - 12 a^7 d^4 (e + f x) + 18 a^5 b^2 d^4 (e + f x) - 6 a b^6 d^4 (e + f x) +$$
$$8 a^2 b^5 c^4 \text{Cos}[e + f x] - 2 b^7 c^4 \text{Cos}[e + f x] - 16 a^3 b^4 c^3 d \text{Cos}[e + f x] -$$
$$8 a b^6 c^3 d \text{Cos}[e + f x] + 36 a^2 b^5 c^2 d^2 \text{Cos}[e + f x] + 16 a^5 b^2 c d^3 \text{Cos}[e + f x] -$$
$$40 a^3 b^4 c d^3 \text{Cos}[e + f x] - 12 a^6 b d^4 \text{Cos}[e + f x] + 21 a^4 b^3 d^4 \text{Cos}[e + f x] -$$
$$2 a^2 b^5 d^4 \text{Cos}[e + f x] - b^7 d^4 \text{Cos}[e + f x] - 8 a^4 b^3 c d^3 (e + f x) \text{Cos}[2 (e + f x)] +$$
$$16 a^2 b^5 c d^3 (e + f x) \text{Cos}[2 (e + f x)] - 8 b^7 c d^3 (e + f x) \text{Cos}[2 (e + f x)] +$$
$$6 a^5 b^2 d^4 (e + f x) \text{Cos}[2 (e + f x)] - 12 a^3 b^4 d^4 (e + f x) \text{Cos}[2 (e + f x)] +$$
$$6 a b^6 d^4 (e + f x) \text{Cos}[2 (e + f x)] + a^4 b^3 d^4 \text{Cos}[3 (e + f x)] - 2 a^2 b^5 d^4 \text{Cos}[3 (e + f x)] +$$
$$b^7 d^4 \text{Cos}[3 (e + f x)] + 32 a^5 b^2 c d^3 (e + f x) \text{Sin}[e + f x] - 64 a^3 b^4 c d^3 (e + f x) \text{Sin}[e + f x] +$$
$$32 a b^6 c d^3 (e + f x) \text{Sin}[e + f x] - 24 a^6 b d^4 (e + f x) \text{Sin}[e + f x] +$$
$$48 a^4 b^3 d^4 (e + f x) \text{Sin}[e + f x] - 24 a^2 b^5 d^4 (e + f x) \text{Sin}[e + f x] + 3 a b^6 c^4 \text{Sin}[2 (e + f x)] -$$
$$4 a^2 b^5 c^3 d \text{Sin}[2 (e + f x)] - 8 b^7 c^3 d \text{Sin}[2 (e + f x)] - 6 a^3 b^4 c^2 d^2 \text{Sin}[2 (e + f x)] +$$
$$24 a b^6 c^2 d^2 \text{Sin}[2 (e + f x)] + 12 a^4 b^3 c d^3 \text{Sin}[2 (e + f x)] - 24 a^2 b^5 c d^3 \text{Sin}[2 (e + f x)] -$$
$$9 a^5 b^2 d^4 \text{Sin}[2 (e + f x)] + 16 a^3 b^4 d^4 \text{Sin}[2 (e + f x)] - 4 a b^6 d^4 \text{Sin}[2 (e + f x)])$$

Problem 716: Result more than twice size of optimal antiderivative.

$$\int \frac{(c + d \text{Sin}[e + f x])^3}{(a + b \text{Sin}[e + f x])^3} \, dx$$

Optimal (type 3, 248 leaves, 6 steps):

$$\frac{d^3 x}{b^3}+\frac{1}{b^3 \left(a^2-b^2\right)^{5/2} f}(b c-a d)$$

$$\left(2 a^3 b c d-8 a b^3 c d+2 a^4 d^2+a^2 b^2 \left(2 c^2-5 d^2\right)+b^4 \left(c^2+6 d^2\right)\right) \text{ArcTan}\left[\frac{b+a \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{a^2-b^2}}\right]+$$

$$\frac{(b c-a d)^2 \left(3 a b c+2 a^2 d-5 b^2 d\right) \text{Cos}[e+f x]}{2 b^2 \left(a^2-b^2\right)^2 f (a+b \text{Sin}[e+f x])}+\frac{(b c-a d)^2 \text{Cos}[e+f x] (c+d \text{Sin}[e+f x])}{2 b \left(a^2-b^2\right) f (a+b \text{Sin}[e+f x])^2}$$

Result (type 3, 524 leaves):

$$\frac{1}{4 b^3 f}\left(-\frac{1}{\left(a^2-b^2\right)^{5/2}}4 \left(2 a^5 d^3-5 a^3 b^2 d^3+3 a b^4 d \left(3 c^2+2 d^2\right)-a^2 b^3 c \left(2 c^2+3 d^2\right)-b^5 c \left(c^2+6 d^2\right)\right)\right.$$

$$\text{ArcTan}\left[\frac{b+a \text{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{a^2-b^2}}\right]+$$

$$\frac{1}{\left(a^2-b^2\right)^2 (a+b \text{Sin}[e+f x])^2}\left(4 a^6 d^3 e-6 a^4 b^2 d^3 e+2 b^6 d^3 e+4 a^6 d^3 f x-6 a^4 b^2 d^3 f x+\right.$$

$$2 b^6 d^3 f x-2 b (b c-a d)^2 \left(-4 a^2 b c+b^3 c-2 a^3 d+5 a b^2 d\right) \text{Cos}[e+f x]-$$

$$2 \left(-a^2 b+b^3\right)^2 d^3 (e+f x) \text{Cos}[2 (e+f x)]+8 a^5 b d^3 e \text{Sin}[e+f x]-$$

$$16 a^3 b^3 d^3 e \text{Sin}[e+f x]+8 a b^5 d^3 e \text{Sin}[e+f x]+8 a^5 b d^3 f x \text{Sin}[e+f x]-$$

$$16 a^3 b^3 d^3 f x \text{Sin}[e+f x]+8 a b^5 d^3 f x \text{Sin}[e+f x]+3 a b^5 c^3 \text{Sin}[2 (e+f x)]-$$

$$3 a^2 b^4 c^2 d \text{Sin}[2 (e+f x)]-6 b^6 c^2 d \text{Sin}[2 (e+f x)]-3 a^3 b^3 c d^2 \text{Sin}[2 (e+f x)]+$$

$$\left.\left.12 a b^5 c d^2 \text{Sin}[2 (e+f x)]+3 a^4 b^2 d^3 \text{Sin}[2 (e+f x)]-6 a^2 b^4 d^3 \text{Sin}[2 (e+f x)]\right)\right)$$

Problem 722: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b \text{Sin}[e+f x])^3 (c+d \text{Sin}[e+f x])^3} \, dx$$

Optimal (type 3, 669 leaves, 11 steps):

$$-\left(\left(b^3\left(10 a^3 b c d-4 a b^3 c d-20 a^4 d^2-a^2 b^2\left(2 c^2-29 d^2\right)-b^4\left(c^2+12 d^2\right)\right)\right.\right.$$

$$\left.\left.\text{ArcTan}\left[\frac{b+a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{a^2-b^2}}\right]\right) \Big/ \left(\left(a^2-b^2\right)^{5/2}(b c-a d)^5 f\right)\right)-$$

$$\left(d^3\left(a^2 d^2\left(2 c^2+d^2\right)-a b\left(10 c^3 d-4 c d^3\right)+b^2\left(20 c^4-29 c^2 d^2+12 d^4\right)\right)\right.$$

$$\left.\text{ArcTan}\left[\frac{d+c\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{c^2-d^2}}\right]\right) \Big/ \left((b c-a d)^5\left(c^2-d^2\right)^{5/2} f\right)-$$

$$\left(d\left(a^4 d^3-b^4 d\left(5 c^2-6 d^2\right)+2 a^2 b^2 d\left(4 c^2-5 d^2\right)-3 a b^3 c\left(c^2-d^2\right)\right) \text{Cos}[e+f x]\right) \Big/$$
$$\left(2\left(a^2-b^2\right)^2(b c-a d)^3\left(c^2-d^2\right) f\left(c+d\,\text{Sin}[e+f x]\right)^2\right)+$$

$$\frac{b^2\,\text{Cos}[e+f x]}{2\left(a^2-b^2\right)(b c-a d) f\left(a+b\,\text{Sin}[e+f x]\right)^2\left(c+d\,\text{Sin}[e+f x]\right)^2}+$$

$$\frac{b^2\left(3 a b c-7 a^2 d+4 b^2 d\right) \text{Cos}[e+f x]}{2\left(a^2-b^2\right)^2(b c-a d)^2 f\left(a+b\,\text{Sin}[e+f x]\right)\left(c+d\,\text{Sin}[e+f x]\right)^2}+$$

$$\left(3 d\left(a^5 c d^4-2 a^3 b^2 c d^4+a b^4 c\left(c^4-2 c^2 d^2+2 d^4\right)+b^5 d\left(2 c^4-7 c^2 d^2+4 d^4\right)-\right.\right.$$
$$\left.\left.a^2 b^3 d\left(3 c^4-12 c^2 d^2+7 d^4\right)-a^4 b\left(3 c^2 d^3-2 d^5\right)\right) \text{Cos}[e+f x]\right) \Big/$$
$$\left(2\left(a^2-b^2\right)^2(b c-a d)^4\left(c^2-d^2\right)^2 f\left(c+d\,\text{Sin}[e+f x]\right)\right)$$

Result (type 3, 1815 leaves) :

$$-\left(\left(b^3\left(2a^2b^2c^2+b^4c^2-10a^3bcd+4ab^3cd+20a^4d^2-29a^2b^2d^2+12b^4d^2\right)\right.\right.$$

$$\left.\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]\left(b\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+a\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{\sqrt{a^2-b^2}}\right]\right)\Big/$$

$$\left.\left(\left(a^2-b^2\right)^{5/2}(-bc+ad)^5f\right)\right)-$$

$$\left(d^3\left(20b^2c^4-10abc^3d+2a^2c^2d^2-29b^2c^2d^2+4abcd^3+a^2d^4+12b^2d^4\right)\right.$$

$$\left.\text{ArcTan}\left[\frac{\text{Sec}\left[\frac{1}{2}(e+fx)\right]\left(d\,\text{Cos}\left[\frac{1}{2}(e+fx)\right]+c\,\text{Sin}\left[\frac{1}{2}(e+fx)\right]\right)}{\sqrt{c^2-d^2}}\right]\right)\Big/$$

$$\left((bc-ad)^5\left(c^2-d^2\right)^{5/2}f\right)+\left(32a^2b^5c^7\,\text{Cos}[e+fx]-8b^7c^7\,\text{Cos}[e+fx]-\right.$$
$$80a^3b^4c^6d\,\text{Cos}[e+fx]+68ab^6c^6d\,\text{Cos}[e+fx]-92a^2b^5c^5d^2\,\text{Cos}[e+fx]+$$
$$38b^7c^5d^2\,\text{Cos}[e+fx]+140a^3b^4c^4d^3\,\text{Cos}[e+fx]-122ab^6c^4d^3\,\text{Cos}[e+fx]-$$
$$80a^6bc^3d^4\,\text{Cos}[e+fx]+140a^4b^3c^3d^4\,\text{Cos}[e+fx]+48a^2b^5c^3d^4\,\text{Cos}[e+fx]-$$
$$72b^7c^3d^4\,\text{Cos}[e+fx]+32a^7c^2d^5\,\text{Cos}[e+fx]-92a^5b^2c^2d^5\,\text{Cos}[e+fx]+$$
$$48a^3b^4c^2d^5\,\text{Cos}[e+fx]+12ab^6c^2d^5\,\text{Cos}[e+fx]+68a^6bcd^6\,\text{Cos}[e+fx]-$$
$$122a^4b^3cd^6\,\text{Cos}[e+fx]+12a^2b^5cd^6\,\text{Cos}[e+fx]+36b^7cd^6\,\text{Cos}[e+fx]-$$
$$8a^7d^7\,\text{Cos}[e+fx]+38a^5b^2d^7\,\text{Cos}[e+fx]-72a^3b^4d^7\,\text{Cos}[e+fx]+$$
$$36ab^6d^7\,\text{Cos}[e+fx]-12ab^6c^6d\,\text{Cos}[3(e+fx)]+28a^2b^5c^5d^2\,\text{Cos}[3(e+fx)]-$$
$$22b^7c^5d^2\,\text{Cos}[3(e+fx)]+20a^3b^4c^4d^3\,\text{Cos}[3(e+fx)]+10ab^6c^4d^3\,\text{Cos}[3(e+fx)]+$$
$$20a^4b^3c^3d^4\,\text{Cos}[3(e+fx)]-96a^2b^5c^3d^4\,\text{Cos}[3(e+fx)]+64b^7c^3d^4\,\text{Cos}[3(e+fx)]+$$
$$28a^5b^2c^2d^5\,\text{Cos}[3(e+fx)]-96a^3b^4c^2d^5\,\text{Cos}[3(e+fx)]+44ab^6c^2d^5\,\text{Cos}[3(e+fx)]-$$
$$12a^6bcd^6\,\text{Cos}[3(e+fx)]+10a^4b^3cd^6\,\text{Cos}[3(e+fx)]+44a^2b^5cd^6\,\text{Cos}[3(e+fx)]-$$
$$36b^7cd^6\,\text{Cos}[3(e+fx)]-22a^5b^2d^7\,\text{Cos}[3(e+fx)]+64a^3b^4d^7\,\text{Cos}[3(e+fx)]-$$
$$36ab^6d^7\,\text{Cos}[3(e+fx)]+12ab^6c^7\,\text{Sin}[2(e+fx)]-4a^2b^5c^6d\,\text{Sin}[2(e+fx)]+$$
$$16b^7c^6d\,\text{Sin}[2(e+fx)]-80a^3b^4c^5d^2\,\text{Sin}[2(e+fx)]+38ab^6c^5d^2\,\text{Sin}[2(e+fx)]-$$
$$10a^2b^5c^4d^3\,\text{Sin}[2(e+fx)]-20b^7c^4d^3\,\text{Sin}[2(e+fx)]-80a^5b^2c^3d^4\,\text{Sin}[2(e+fx)]+$$
$$320a^3b^4c^3d^4\,\text{Sin}[2(e+fx)]-192ab^6c^3d^4\,\text{Sin}[2(e+fx)]-4a^6bc^2d^5\,\text{Sin}[2(e+fx)]-$$
$$10a^4b^3c^2d^5\,\text{Sin}[2(e+fx)]+64a^2b^5c^2d^5\,\text{Sin}[2(e+fx)]-26b^7c^2d^5\,\text{Sin}[2(e+fx)]+$$
$$12a^7cd^6\,\text{Sin}[2(e+fx)]+38a^5b^2cd^6\,\text{Sin}[2(e+fx)]-192a^3b^4cd^6\,\text{Sin}[2(e+fx)]+$$
$$124ab^6cd^6\,\text{Sin}[2(e+fx)]+16a^6bd^7\,\text{Sin}[2(e+fx)]-20a^4b^3d^7\,\text{Sin}[2(e+fx)]-$$
$$26a^2b^5d^7\,\text{Sin}[2(e+fx)]+24b^7d^7\,\text{Sin}[2(e+fx)]-3ab^6c^5d^2\,\text{Sin}[4(e+fx)]+$$
$$9a^2b^5c^4d^3\,\text{Sin}[4(e+fx)]-6b^7c^4d^3\,\text{Sin}[4(e+fx)]+6ab^6c^3d^4\,\text{Sin}[4(e+fx)]+$$
$$9a^4b^3c^2d^5\,\text{Sin}[4(e+fx)]-36a^2b^5c^2d^5\,\text{Sin}[4(e+fx)]+21b^7c^2d^5\,\text{Sin}[4(e+fx)]-$$
$$3a^5b^2cd^6\,\text{Sin}[4(e+fx)]+6a^3b^4cd^6\,\text{Sin}[4(e+fx)]-6ab^6cd^6\,\text{Sin}[4(e+fx)]-$$
$$\left.6a^4b^3d^7\,\text{Sin}[4(e+fx)]+21a^2b^5d^7\,\text{Sin}[4(e+fx)]-12b^7d^7\,\text{Sin}[4(e+fx)]\right)\Big/$$
$$\left(16\left(a^2-b^2\right)^2(-bc+ad)^4\left(c^2-d^2\right)^2f\,(a+b\,\text{Sin}[e+fx])^2\,(c+d\,\text{Sin}[e+fx])^2\right)$$

Problem 745: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}{a+b\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 4, 296 leaves, 9 steps):

$$-\frac{2\,d^2\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{3\,b\,f}+\frac{2\,d\,(7\,b\,c-3\,a\,d)\,\mathrm{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{3\,b^2\,f\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}}-$$

$$\left(2\,d\,\left(6\,a\,b\,c\,d-3\,a^2\,d^2-b^2\,\left(2\,c^2+d^2\right)\right)\,\mathrm{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/$$

$$\left(3\,b^3\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)+\frac{2\,(b\,c-a\,d)^3\,\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}}{b^3\,(a+b)\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}$$

Result (type 4, 868 leaves):

$$-\frac{2\,d^2\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{3\,b\,f}-$$

$$\frac{1}{6\,b\,f}\left(-\left(\left(2\,\left(-6\,b\,c^3-7\,b\,c\,d^2+a\,d^3\right)\,\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-\left(2\,i\,\left(-18\,b\,c^2\,d+4\,a\,c\,d^2-2\,b\,d^3\right)\right.$$

$$\mathrm{Cos}[e+f\,x]\,\left((b\,c-a\,d)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\mathrm{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},i\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$
$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)-$$
$$\left(2\,\mathrm{i}\,(7\,b\,c\,d^2-3\,a\,d^3)\,\text{Cos}[e+f\,x]\,\text{Cos}[2\,(e+f\,x)]\,\left(2\,b\,(c-d)\,(b\,c-a\,d)\right.\right.$$
$$\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\,\left(-2\,(a+b)\,(-b\,c+a\,d)\right.$$
$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+(2\,a^2-b^2)\,d$$
$$\left.\left.\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$
$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x]))\right)\Big/$$
$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$
$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$
$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 746: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{3/2}}{a+b\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 4, 229 leaves, 8 steps):

$$\frac{2\,d\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{b\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}+$$

$$\frac{2\,d\,(b\,c-a\,d)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{b^2\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\frac{2\,(b\,c-a\,d)^2\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{b^2\,(a+b)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 4, 242 leaves):

$$\frac{1}{b^2\sqrt{-\frac{1}{c+d}}\,f}2\,i\left(b\,(c-d)\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$(a\,d+b\,(-2\,c+d))\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+$$

$$\left.(b\,c-a\,d)\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\text{Sec}[e+f\,x]\,\sqrt{-\frac{d\,(-1+\text{Sin}[e+f\,x])}{c+d}}\,\sqrt{-\frac{d\,(1+\text{Sin}[e+f\,x])}{c-d}}$$

Problem 749: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Sin}[e+f\,x])\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 220 leaves, 7 steps):

$$-\frac{2\,d^2\,\text{Cos}[e+f\,x]}{(b\,c-a\,d)\,(c^2-d^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}-\frac{2\,d\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(b\,c-a\,d)\,(c^2-d^2)\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}+\frac{2\,b\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{(a+b)\,(b\,c-a\,d)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}$$

Result (type 4, 877 leaves):

$$-\frac{2\,d^2\,\text{Cos}[e+f\,x]}{(b\,c-a\,d)\,(c^2-d^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}-\frac{1}{2\,(c-d)\,(c+d)\,(b\,c-a\,d)\,f}$$

$$\left(-\left(\left(2\,(-2\,b\,c^2+2\,a\,c\,d+3\,b\,d^2)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)-\left(2\,\mathrm{i}\,(2\,b\,c\,d+2\,a\,d^2)\right.$$

$$\text{Cos}[e+f\,x]\left((b\,c-a\,d)\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\right)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)+$$

$$\left(2\,\mathrm{i}\,d\,\text{Cos}[e+f\,x]\,\text{Cos}[2\,(e+f\,x)]\right)\left(2\,b\,(c-d)\,(b\,c-a\,d)\right.$$

$$\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\,\right],\ \frac{c+d}{c-d}\right]+d\left(-2\,(a+b)\,(-b\,c+a\,d)\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\,\right],\ \frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\ i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\,\right],\ \frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\ \sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\ \left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\right)\Big/$$

$$\left(b\,\sqrt{-\frac{1}{c+d}}\ (b\,c-a\,d)\ (a+b\,\text{Sin}[e+f\,x])\ \sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 750: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Sin}[e+f\,x])\ (c+d\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 399 leaves, 10 steps):

$$-\frac{2 d^2 \operatorname{Cos}[e+f x]}{3 (b c-a d) (c^2-d^2) f (c+d \operatorname{Sin}[e+f x])^{3/2}}-\frac{2 d^2 (7 b c^2-4 a c d-3 b d^2) \operatorname{Cos}[e+f x]}{3 (b c-a d)^2 (c^2-d^2)^2 f \sqrt{c+d \operatorname{Sin}[e+f x]}}-$$
$$\left(2 d (7 b c^2-4 a c d-3 b d^2) \operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \operatorname{Sin}[e+f x]}\right) \Big/$$
$$\left(3 (b c-a d)^2 (c^2-d^2)^2 f \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right)+$$
$$\frac{2 d \operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}}{3 (b c-a d) (c^2-d^2) f \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$
$$\frac{2 b^2 \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}}{(a+b) (b c-a d)^2 f \sqrt{c+d \operatorname{Sin}[e+f x]}}$$

Result (type 4, 1079 leaves):

$$\frac{1}{f}\sqrt{c+d \operatorname{Sin}[e+f x]} \left(-\frac{2 d^2 \operatorname{Cos}[e+f x]}{3 (b c-a d) (c^2-d^2) (c+d \operatorname{Sin}[e+f x])^2}+\right.$$
$$\left(2 \left(-7 b c^2 d^2 \operatorname{Cos}[e+f x]+4 a c d^3 \operatorname{Cos}[e+f x]+3 b d^4 \operatorname{Cos}[e+f x]\right)\right) \Big/$$
$$\left.\left(3 (b c-a d)^2 (c^2-d^2)^2 (c+d \operatorname{Sin}[e+f x])\right)\right)+\frac{1}{6 (c-d)^2 (c+d)^2 (b c-a d)^2 f}$$
$$\left(-\left(\left(\left(2 \left(6 b^2 c^4-12 a b c^3 d+6 a^2 c^2 d^2-19 b^2 c^2 d^2+8 a b c d^3+2 a^2 d^4+9 b^2 d^4\right) \operatorname{EllipticPi}\left[\right.\right.\right.\right.\right.$$
$$\left.\left.\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\right)-$$
$$\left(2 i \left(-12 b^2 c^3 d-8 a b c^2 d^2+8 a^2 c d^3+4 b^2 c d^3+8 a b d^4\right) \operatorname{Cos}[e+f x]\right.$$
$$\left((b c-a d) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$
$$\left.a d \operatorname{EllipticPi}\left[\frac{b (c+d)}{b c-a d}, i \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$
$$\left.\sqrt{\frac{d-d \operatorname{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \operatorname{Sin}[e+f x]}{c-d}} \left(-b c+a d+b (c+d \operatorname{Sin}[e+f x])\right)\right) \Big/$$

$$\left(b\,d^2\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\mathrm{Sin}[e+f\,x])\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$
$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\mathrm{Sin}[e+f\,x])+(c+d\,\mathrm{Sin}[e+f\,x])^2}{d^2}}\right)-$$
$$\left(2\,\mathrm{i}\,(7\,b^2\,c^2\,d^2-4\,a\,b\,c\,d^3-3\,b^2\,d^4)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}[2\,(e+f\,x)]\,\right(2\,b\,(c-d)\,(b\,c-a\,d)$$
$$\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\left(-2\,(a+b)\,(-b\,c+a\,d)\right.$$
$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+(2\,a^2-b^2)\,d$$
$$\left.\left.\mathrm{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$
$$\left.\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,(-b\,c+a\,d+b\,(c+d\,\mathrm{Sin}[e+f\,x]))\right)\Big/$$
$$\left(b^2\,d\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\mathrm{Sin}[e+f\,x])\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$
$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\mathrm{Sin}[e+f\,x])-2\,(c+d\,\mathrm{Sin}[e+f\,x])^2\right)$$
$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\mathrm{Sin}[e+f\,x])+(c+d\,\mathrm{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 751: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\mathrm{Sin}[e+f\,x])^{7/2}}{(a+b\,\mathrm{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 4, 534 leaves, 10 steps):

$$\frac{d\left(6\,a\,b\,c\,d-5\,a^2\,d^2-b^2\left(3\,c^2-2\,d^2\right)\right)\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{3\,b^2\left(a^2-b^2\right)f}+$$
$$\frac{(b\,c-a\,d)^2\,\mathrm{Cos}[e+f\,x]\,(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}{b\left(a^2-b^2\right)f\,(a+b\,\mathrm{Sin}[e+f\,x])}+$$
$$\left(\left(29\,a^2\,b\,c\,d^2-15\,a^3\,d^3+b^3\left(3\,c^3-20\,c\,d^2\right)-a\,b^2\left(9\,c^2\,d-12\,d^3\right)\right)\mathrm{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/\left(3\,b^3\left(a^2-b^2\right)f\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)-$$
$$\left(\left(24\,a^3\,b\,c\,d^3-15\,a^4\,d^4-12\,a\,b^3\,c\,d\left(c^2+3\,d^2\right)+2\,a^2\,b^2\,d^2\left(c^2+8\,d^2\right)+b^4\left(3\,c^4+16\,c^2\,d^2+2\,d^4\right)\right)\mathrm{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left(3\,b^4\left(a^2-b^2\right)f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)+$$
$$\left((b\,c-a\,d)^3\left(2\,a\,b\,c+5\,a^2\,d-7\,b^2\,d\right)\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a-b)\,b^4\,(a+b)^2\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)$$

Result (type 4, 1109 leaves):

$$\frac{1}{f}\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\left(-\frac{2\,d^3\,\mathrm{Cos}[e+f\,x]}{3\,b^2}+\left(-b^3\,c^3\,\mathrm{Cos}[e+f\,x]+3\,a\,b^2\,c^2\,d\,\mathrm{Cos}[e+f\,x]-3\,a^2\,b\,c\,d^2\,\mathrm{Cos}[e+f\,x]+a^3\,d^3\,\mathrm{Cos}[e+f\,x]\right)\Big/\left(b^2\left(-a^2+b^2\right)(a+b\,\mathrm{Sin}[e+f\,x])\right)\right)-\frac{1}{12\,(a-b)\,b^2\,(a+b)\,f}$$
$$\left(-\left(\left(2\left(-12\,a\,b^2\,c^4+39\,b^3\,c^3\,d-45\,a\,b^2\,c^2\,d^2+a^2\,b\,c\,d^3+20\,b^3\,c\,d^3+5\,a^3\,d^4-8\,a\,b^2\,d^4\right)\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right.\right.-$$
$$\left(2\,i\left(-12\,a\,b^2\,c^3\,d-36\,a^2\,b\,c^2\,d^2+72\,b^3\,c^2\,d^2+20\,a^3\,c\,d^3-56\,a\,b^2\,c\,d^3+8\,a^2\,b\,d^4+4\,b^3\,d^4\right)\right.$$

$$\text{Cos}[e+f x] \left((b c - a d) \,\text{EllipticF}\left[i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \,\text{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right] + \right.$$

$$\left. a d \,\text{EllipticPi}\left[\frac{b (c+d)}{b c - a d}, i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \,\text{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d \,\text{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \,\text{Sin}[e+f x]}{c-d}} \left(-b c + a d + b (c+d \,\text{Sin}[e+f x])\right)\right) \Big/$$

$$\left(b d^2 \sqrt{-\frac{1}{c+d}} (b c - a d) (a+b \,\text{Sin}[e+f x]) \sqrt{1-\text{Sin}[e+f x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2 c (c+d \,\text{Sin}[e+f x]) + (c+d \,\text{Sin}[e+f x])^2}{d^2}}\right) -$$

$$\left(2 i \left(3 b^3 c^3 d - 9 a b^2 c^2 d^2 + 29 a^2 b c d^3 - 20 b^3 c d^3 - 15 a^3 d^4 + 12 a b^2 d^4\right)\right.$$

$$\text{Cos}[e+f x] \,\text{Cos}[2 (e+f x)] \left(2 b (c-d) (b c - a d)\right.$$

$$\text{EllipticE}\left[i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \,\text{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right] + d \left(-2 (a+b) (-b c + a d)\right.$$

$$\text{EllipticF}\left[i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \,\text{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right] + (2 a^2 - b^2) d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b (c+d)}{b c - a d}, i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \,\text{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d \,\text{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \,\text{Sin}[e+f x]}{c-d}} \left(-b c + a d + b (c+d \,\text{Sin}[e+f x])\right)\right) \Big/$$

$$\left(b^2 d \sqrt{-\frac{1}{c+d}} (b c - a d) (a+b \,\text{Sin}[e+f x]) \sqrt{1-\text{Sin}[e+f x]^2}\right.$$

$$\left(-2 c^2 + d^2 + 4 c (c+d \,\text{Sin}[e+f x]) - 2 (c+d \,\text{Sin}[e+f x])^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 752: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{5/2}}{(a+b\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 4, 390 leaves, 9 steps):

$$\frac{(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{b\,(a^2-b^2)\,f\,(a+b\,\text{Sin}[e+f\,x])}-\left(\left(2\,a\,b\,c\,d-3\,a^2\,d^2-b^2\,(c^2-2\,d^2)\right)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(b^2\,(a^2-b^2)\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)+\left((b\,c-a\,d)\,\left(2\,a\,b\,c\,d+3\,a^2\,d^2-b^2\,(c^2+4\,d^2)\right)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left(b^3\,(a^2-b^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)+\left((b\,c-a\,d)^2\,(2\,a\,b\,c+3\,a^2\,d-5\,b^2\,d)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a-b)\,b^3\,(a+b)^2\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 4, 986 leaves):

$$\left(\left(-b^2\,c^2\,\text{Cos}[e+f\,x]+2\,a\,b\,c\,d\,\text{Cos}[e+f\,x]-a^2\,d^2\,\text{Cos}[e+f\,x]\right)\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(b\,(-a^2+b^2)\,f\,(a+b\,\text{Sin}[e+f\,x])\right)+\frac{1}{4\,(a-b)\,b\,(a+b)\,f}$$
$$\left(-\left(\left(2\,(4\,a\,b\,c^3-9\,b^2\,c^2\,d+6\,a\,b\,c\,d^2+a^2\,d^3-2\,b^2\,d^3)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-\right.\right.$$

$$\left(2\,i\,\left(4\,a\,b\,c^2\,d+4\,a^2\,c\,d^2-12\,b^2\,c\,d^2+4\,a\,b\,d^3\right)\,\text{Cos}[e+f\,x]\right.$$

$$\left(\left(b\,c-a\,d\right)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\text{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\text{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\,\left(a+b\,\text{Sin}[e+f\,x]\right)\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)+\left(c+d\,\text{Sin}[e+f\,x]\right)^2}{d^2}}\right)-$$

$$\left(2\,i\,\left(-b^2\,c^2\,d+2\,a\,b\,c\,d^2-3\,a^2\,d^3+2\,b^2\,d^3\right)\,\text{Cos}[e+f\,x]\,\text{Cos}\left[2\,\left(e+f\,x\right)\right]\,\left(2\,b\,\left(c-d\right)\,\left(b\,c-a\,d\right)\right.\right.$$

$$\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+d\,\left(-2\,\left(a+b\right)\,\left(-b\,c+a\,d\right)\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\text{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\,\left(a+b\,\text{Sin}[e+f\,x]\right)\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)-2\,\left(c+d\,\text{Sin}[e+f\,x]\right)^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\right)\right)$$

Problem 753: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^{3/2}}{\left(a+b\,\mathrm{Sin}[e+f\,x]\right)^2}\,dx$$

Optimal (type 4, 351 leaves, 9 steps):

$$\frac{\left(b\,c-a\,d\right)\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{\left(a^2-b^2\right)\,f\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)}+$$
$$\frac{\left(b\,c-a\,d\right)\,\mathrm{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{b\,\left(a^2-b^2\right)\,f\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}}+$$
$$\left(\left(2\,a\,b\,c\,d+a^2\,d^2-b^2\,\left(c^2+2\,d^2\right)\right)\,\mathrm{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Bigg/$$
$$\left(b^2\,\left(a^2-b^2\right)\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)+$$
$$\left(\left(b\,c-a\,d\right)\,\left(2\,a\,b\,c+a^2\,d-3\,b^2\,d\right)\,\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\right.$$
$$\left.\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Bigg/\left(\left(a-b\right)\,b^2\,\left(a+b\right)^2\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)$$

Result (type 4, 891 leaves):

$$\frac{\left(b\,c\,\mathrm{Cos}[e+f\,x]-a\,d\,\mathrm{Cos}[e+f\,x]\right)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{\left(a^2-b^2\right)\,f\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)}+\frac{1}{4\,\left(a-b\right)\,\left(a+b\right)\,f}$$
$$\left(-\left(\left(2\,\left(4\,a\,c^2-5\,b\,c\,d+a\,d^2\right)\,\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Bigg/\right.\right.$$
$$\left.\left(\left(a+b\right)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-\left(2\,i\,\left(4\,a\,c\,d-4\,b\,d^2\right)\,\mathrm{Cos}[e+f\,x]\right.$$
$$\left(\left(b\,c-a\,d\right)\,\mathrm{EllipticF}\left[i\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$a\,d\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\Bigg)$$

$$\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\Bigg)\Bigg/$$

$$\Bigg(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}$$

$$\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\Bigg)-$$

$$\Bigg(2\,\mathrm{i}\,(-b\,c\,d+a\,d^2)\,\text{Cos}[e+f\,x]\,\text{Cos}[2\,(e+f\,x)]\,\Bigg(2\,b\,(c-d)\,(b\,c-a\,d)$$

$$\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+d\,\Bigg(-2\,(a+b)\,(-b\,c+a\,d)$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+(2\,a^2-b^2)\,d$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\,\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\Bigg)\Bigg)$$

$$\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\Bigg)\Bigg/$$

$$\Bigg(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\Bigg)\Bigg)$$

Problem 754: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(a+b\,\text{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 4, 307 leaves, 9 steps):

$$\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(a^2-b^2)\,f\,(a+b\,\text{Sin}[e+f\,x])}+\frac{\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(a^2-b^2)\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}-\frac{(b\,c-a\,d)\,\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}}{b\,(a^2-b^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\left((2\,a\,b\,c-a^2\,d-b^2\,d)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a-b)\,b\,(a+b)^2\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 4, 846 leaves):

$$-\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(-a^2+b^2)\,f\,(a+b\,\text{Sin}[e+f\,x])}+\frac{1}{4\,(a-b)\,(a+b)\,f}$$

$$\left(-\left(\left(2\,(4\,a\,c-b\,d)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)-\right.$$

$$\left(8\,i\,a\,\text{Cos}[e+f\,x]\left((b\,c-a\,d)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.\right.$$

$$\left.a\,d\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x]))\right)\Big/$$

$$\left(b\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\sqrt{-\frac{c^2-d^2-2c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\;+$$

$$\Bigg(2\,\text{i}\,\text{Cos}[e+f\,x]\,\text{Cos}[2\,(e+f\,x)]\,\Bigg(2\,b\,(c-d)\,(b\,c-a\,d)$$

$$\text{EllipticE}\Big[\text{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Big],\frac{c+d}{c-d}\Big]+d\,\Bigg(-2\,(a+b)\,(-b\,c+a\,d)$$

$$\text{EllipticF}\Big[\text{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Big],\frac{c+d}{c-d}\Big]+(2\,a^2-b^2)\,d$$

$$\text{EllipticPi}\Big[\frac{b\,(c+d)}{b\,c-a\,d},\text{i}\,\text{ArcSinh}\Big[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Big],\frac{c+d}{c-d}\Big]\Bigg)\Bigg)$$

$$\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x]))\Bigg)\Bigg/$$

$$\Bigg(b\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\sqrt{-\frac{c^2-d^2-2c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\Bigg)\Bigg)$$

Problem 755: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\text{Sin}[e+f\,x])^2\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 325 leaves, 9 steps) :

$$\frac{b^2 \operatorname{Cos}[e+f x] \sqrt{c+d \operatorname{Sin}[e+f x]}}{\left(a^2-b^2\right)(b c-a d) f(a+b \operatorname{Sin}[e+f x])}+\frac{b \operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \operatorname{Sin}[e+f x]}}{\left(a^2-b^2\right)(b c-a d) f \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}}-$$

$$\frac{\operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}}{\left(a^2-b^2\right) f \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$

$$\left(\left(2 a b c-3 a^2 d+b^2 d\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/$$

$$\left((a-b)(a+b)^2(b c-a d) f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)$$

Result (type 4, 871 leaves):

$$-\frac{b^2 \operatorname{Cos}[e+f x] \sqrt{c+d \operatorname{Sin}[e+f x]}}{\left(a^2-b^2\right)(-b c+a d) f(a+b \operatorname{Sin}[e+f x])}+\frac{1}{4(a-b)(a+b)(-b c+a d) f}$$

$$\left(-\left(\left(2\left(-4 a b c+4 a^2 d-3 b^2 d\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right]\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\right)+$$

$$\left(8 \mathrm{i} a \operatorname{Cos}[e+f x]\left((b c-a d) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.\right.$$

$$\left.a d \operatorname{EllipticPi}\left[\frac{b(c+d)}{b c-a d}, \mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d \operatorname{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \operatorname{Sin}[e+f x]}{c-d}}\left(-b c+a d+b(c+d \operatorname{Sin}[e+f x])\right)\right) \Big/$$

$$\left(d \sqrt{-\frac{1}{c+d}}(b c-a d)(a+b \operatorname{Sin}[e+f x]) \sqrt{1-\operatorname{Sin}[e+f x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2 c(c+d \operatorname{Sin}[e+f x])+(c+d \operatorname{Sin}[e+f x])^2}{d^2}}\right)-$$

$$\left(2 \mathrm{i} \operatorname{Cos}[e+f x] \operatorname{Cos}[2(e+f x)]\left(2 b(c-d)(b c-a d)\right.\right.$$

$$\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\left(-2\,(a+b)\,(-b\,c+a\,d)\right.$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\right)\Big/$$

$$\left(\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 756: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Sin}[e+f\,x])^2\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 449 leaves, 10 steps):

$$\frac{d\left(2 a^2 d^2+b^2\left(c^2-3 d^2\right)\right) \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(b c-a d)^2\left(c^2-d^2\right) f \sqrt{c+d \operatorname{Sin}[e+f x]}}+\frac{b^2 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(b c-a d) f(a+b \operatorname{Sin}[e+f x]) \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$

$$\left(\left(2 a^2 d^2+b^2\left(c^2-3 d^2\right)\right) \operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \operatorname{Sin}[e+f x]}\right) \Big/ \left(\left(a^2-b^2\right)(b c-a d)^2\left(c^2-d^2\right) f \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right)-$$

$$\frac{b \operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}}{\left(a^2-b^2\right)(b c-a d) f \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$

$$\left(b\left(2 a b c-5 a^2 d+3 b^2 d\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a-b)(a+b)^2(b c-a d)^2 f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)$$

Result (type 4, 1057 leaves):

$$\frac{1}{f}\sqrt{c+d \operatorname{Sin}[e+f x]}\left(\frac{b^3 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(-b c+a d)^2(a+b \operatorname{Sin}[e+f x])}+\frac{2 d^3 \operatorname{Cos}[e+f x]}{(b c-a d)^2\left(c^2-d^2\right)(c+d \operatorname{Sin}[e+f x])}\right)+$$

$$\frac{1}{4(a-b)(a+b)(c-d)(c+d)(-b c+a d)^2 f}$$

$$\left(-\left(\left(\left(2\left(4 a b^2 c^3-8 a^2 b c^2 d+7 b^3 c^2 d+4 a^3 c d^2-8 a b^2 c d^2+10 a^2 b d^3-9 b^3 d^3\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b},\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\right)-$$

$$\left(2 \mathrm{i}\left(4 a b^2 c^2 d+4 a^2 b c d^2-4 b^3 c d^2+4 a^3 d^3-8 a b^2 d^3\right) \operatorname{Cos}[e+f x]\right.$$

$$\left((b c-a d) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$

$$\left.a d \operatorname{EllipticPi}\left[\frac{b(c+d)}{b c-a d}, \mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\ \sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\ \left(-b\,c+a\,d+b\,\left(c+d\,\text{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\ (b\,c-a\,d)\ (a+b\,\text{Sin}[e+f\,x])\ \sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)+\left(c+d\,\text{Sin}[e+f\,x]\right)^2}{d^2}}\right)-$$

$$\left(2\,\mathrm{i}\,\left(-b^3\,c^2\,d-2\,a^2\,b\,d^3+3\,b^3\,d^3\right)\,\text{Cos}[e+f\,x]\ \text{Cos}\left[2\,(e+f\,x)\right]\ \left(2\,b\,(c-d)\ (b\,c-a\,d)\right.\right.$$

$$\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\ \frac{c+d}{c-d}\right]+d\,\left(-2\,(a+b)\ (-b\,c+a\,d)\right.$$

$$\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\ \frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\ \mathrm{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\ \frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\ \sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\ \left(-b\,c+a\,d+b\,\left(c+d\,\text{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\ (b\,c-a\,d)\ (a+b\,\text{Sin}[e+f\,x])\ \sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)-2\,\left(c+d\,\text{Sin}[e+f\,x]\right)^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)+\left(c+d\,\text{Sin}[e+f\,x]\right)^2}{d^2}}\right)\right)$$

Problem 757: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(a+b\,\text{Sin}[e+f\,x])^2\,(c+d\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 661 leaves, 11 steps):

$$\frac{d\left(2 a^2 d^2+b^2\left(3 c^2-5 d^2\right)\right) \operatorname{Cos}[e+f x]}{3\left(a^2-b^2\right)(b c-a d)^2\left(c^2-d^2\right) f(c+d \operatorname{Sin}[e+f x])^{3/2}}+$$
$$\frac{b^2 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(b c-a d) f(a+b \operatorname{Sin}[e+f x])(c+d \operatorname{Sin}[e+f x])^{3/2}}-$$
$$\left(\left(8 a^3 c d^4-8 a b^2 c d^4-4 a^2 b d^3\left(5 c^2-3 d^2\right)-b^3\left(3 c^4 d-26 c^2 d^3+15 d^5\right)\right) \operatorname{Cos}[e+f x]\right) \Big/ \left(3\left(a^2-b^2\right)(b c-a d)^3\left(c^2-d^2\right)^2 f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)-$$
$$\left(\left(8 a^3 c d^3-8 a b^2 c d^3-4 a^2 b d^2\left(5 c^2-3 d^2\right)-b^3\left(3 c^4-26 c^2 d^2+15 d^4\right)\right) \operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \operatorname{Sin}[e+f x]}\right) \Big/ \left(3\left(a^2-b^2\right)(b c-a d)^3\left(c^2-d^2\right)^2 f \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right)-$$
$$\left(\left(2 a^2 d^2+b^2\left(3 c^2-5 d^2\right)\right) \operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left(3\left(a^2-b^2\right)(b c-a d)^2\left(c^2-d^2\right) f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)+$$
$$\left(b^2\left(2 a b c-7 a^2 d+5 b^2 d\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a-b)(a+b)^2(b c-a d)^3 f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)$$

Result (type 4, 1319 leaves):

$$\frac{1}{f}\sqrt{c+d \operatorname{Sin}[e+f x]}$$
$$\left(-\frac{b^4 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(-b c+a d)^3(a+b \operatorname{Sin}[e+f x])}+\frac{2 d^3 \operatorname{Cos}[e+f x]}{3(b c-a d)^2\left(c^2-d^2\right)(c+d \operatorname{Sin}[e+f x])^2}-\right.$$
$$\left.\left(4\left(-5 b c^2 d^3 \operatorname{Cos}[e+f x]+2 a c d^4 \operatorname{Cos}[e+f x]+3 b d^5 \operatorname{Cos}[e+f x]\right)\right) \Big/ \left(3(b c-a d)^3\left(c^2-d^2\right)^2(c+d \operatorname{Sin}[e+f x])\right)\right)+$$
$$\frac{1}{12(a-b)(a+b)(c-d)^2(c+d)^2(-b c+a d)^3 f}$$
$$\left(-\left(\left(2\left(-12 a b^3 c^5+36 a^2 b^2 c^4 d-33 b^4 c^4 d-36 a^3 b c^3 d^2+60 a b^3 c^3 d^2+12 a^4 c^2 d^3-104 a^2 b^2 c^2 d^3+\right.\right.\right.\right.$$
$$\left.86 b^4 c^2 d^3+28 a^3 b c d^4-40 a b^3 c d^4+4 a^4 d^5+44 a^2 b^2 d^5-45 b^4 d^5\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b},\right.$$
$$\left.\left.\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)-$$

$$\left(2\,\mathrm{i}\,\left(-12\,a\,b^3\,c^4\,d-36\,a^2\,b^2\,c^3\,d^2+36\,b^4\,c^3\,d^2-28\,a^3\,b\,c^2\,d^3+52\,a\,b^3\,c^2\,d^3+16\,a^4\,c\,d^4+\right.\right.$$

$$\left.4\,a^2\,b^2\,c\,d^4-20\,b^4\,c\,d^4+28\,a^3\,b\,d^5-40\,a\,b^3\,d^5\right)\,\mathrm{Cos}[e+f\,x]$$

$$\left(\left(b\,c-a\,d\right)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\right],\,\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\mathrm{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\right],\,\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\,\right)-$$

$$\left(2\,\mathrm{i}\,\left(3\,b^4\,c^4\,d+20\,a^2\,b^2\,c^2\,d^3-26\,b^4\,c^2\,d^3-8\,a^3\,b\,c\,d^4+8\,a\,b^3\,c\,d^4-12\,a^2\,b^2\,d^5+15\,b^4\,d^5\right)\right.$$

$$\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}\left[2\,\left(e+f\,x\right)\right]\,\left(2\,b\,\left(c-d\right)\,\left(b\,c-a\,d\right)\right.$$

$$\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\right],\,\frac{c+d}{c-d}\right]+d\,\left(-2\,\left(a+b\right)\,\left(-b\,c+a\,d\right)\right.$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\right],\,\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\mathrm{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\right],\,\frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\right)\Big/$$

$$\left(b^2\, d\, \sqrt{-\frac{1}{c+d}}\, (b\, c-a\, d)\, (a+b\, \mathrm{Sin}[e+f\, x])\, \sqrt{1-\mathrm{Sin}[e+f\, x]^2}\right.$$
$$\left(-2\, c^2+d^2+4\, c\, (c+d\, \mathrm{Sin}[e+f\, x])-2\, (c+d\, \mathrm{Sin}[e+f\, x])^2\right)$$
$$\left.\left.\sqrt{-\frac{c^2-d^2-2\, c\, (c+d\, \mathrm{Sin}[e+f\, x])+(c+d\, \mathrm{Sin}[e+f\, x])^2}{d^2}}\right)\right)$$

Problem 758: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(c+d\, \mathrm{Sin}[e+f\, x])^{9/2}}{(a+b\, \mathrm{Sin}[e+f\, x])^3}\, dx$$

Optimal (type 4, 816 leaves, 11 steps):

$$\frac{1}{12\,b^3\,(a^2-b^2)^2\,f}$$
$$d\,\left(36\,a^3\,b\,c\,d^2-35\,a^4\,d^3+b^4\,d\,\left(45\,c^2-8\,d^2\right)-18\,a\,b^3\,c\,\left(c^2+5\,d^2\right)+a^2\,b^2\,d\,\left(9\,c^2+61\,d^2\right)\right)\,\text{Cos}[e+f\,x]$$
$$\sqrt{c+d\,\text{Sin}[e+f\,x]}\,+\,\left(\left(b\,c-a\,d\right)^2\,\left(6\,a\,b\,c+7\,a^2\,d-13\,b^2\,d\right)\,\text{Cos}[e+f\,x]\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{3/2}\right)\Big/$$
$$\left(4\,b^2\,\left(a^2-b^2\right)^2\,f\,\left(a+b\,\text{Sin}[e+f\,x]\right)\right)+\frac{\left(b\,c-a\,d\right)^2\,\text{Cos}[e+f\,x]\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{5/2}}{2\,b\,\left(a^2-b^2\right)\,f\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2}+$$
$$\left(\left(185\,a^4\,b\,c\,d^3-105\,a^5\,d^4-b^5\,c\,d\,\left(51\,c^2-104\,d^2\right)-15\,a^3\,b^2\,d^2\,\left(3\,c^2-13\,d^2\right)-\right.\right.$$
$$\left.a^2\,b^3\,c\,d\,\left(21\,c^2+361\,d^2\right)+9\,a\,b^4\,\left(2\,c^4+17\,c^2\,d^2-8\,d^4\right)\right)\,\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]$$
$$\left.\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(12\,b^4\,\left(a^2-b^2\right)^2\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)-$$
$$\left(\left(150\,a^5\,b\,c\,d^4-105\,a^6\,d^5-12\,a^3\,b^3\,c\,d^2\,\left(4\,c^2+29\,d^2\right)+a^4\,b^2\,d^3\,\left(26\,c^2+223\,d^2\right)-b^6\,d\right.\right.$$
$$\left.\left(57\,c^4+136\,c^2\,d^2+8\,d^4\right)+6\,a\,b^5\,c\,\left(3\,c^4+38\,c^2\,d^2+48\,d^4\right)-a^2\,b^4\,d\,\left(33\,c^4+70\,c^2\,d^2+128\,d^4\right)\right)$$
$$\left.\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/$$
$$\left(12\,b^5\,\left(a^2-b^2\right)^2\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)+$$
$$\left(\left(b\,c-a\,d\right)^3\,\left(20\,a^3\,b\,c\,d-44\,a\,b^3\,c\,d+35\,a^4\,d^2+2\,a^2\,b^2\,\left(4\,c^2-43\,d^2\right)+b^4\,\left(4\,c^2+63\,d^2\right)\right)\right.$$
$$\left.\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/$$
$$\left(4\,\left(a-b\right)^2\,b^5\,\left(a+b\right)^3\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 4, 1526 leaves):

$$\frac{1}{f}\sqrt{c+d\,\text{Sin}[e+f\,x]}$$
$$\left(-\frac{2\,d^4\,\text{Cos}[e+f\,x]}{3\,b^3}+\left(-b^4\,c^4\,\text{Cos}[e+f\,x]+4\,a\,b^3\,c^3\,d\,\text{Cos}[e+f\,x]-6\,a^2\,b^2\,c^2\,d^2\,\text{Cos}[e+f\,x]+\right.\right.$$
$$\left.4\,a^3\,b\,c\,d^3\,\text{Cos}[e+f\,x]-a^4\,d^4\,\text{Cos}[e+f\,x]\right)\Big/\left(2\,b^3\,\left(-a^2+b^2\right)\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2\right)+$$
$$\left(6\,a\,b^4\,c^4\,\text{Cos}[e+f\,x]-7\,a^2\,b^3\,c^3\,d\,\text{Cos}[e+f\,x]-17\,b^5\,c^3\,d\,\text{Cos}[e+f\,x]-\right.$$
$$15\,a^3\,b^2\,c^2\,d^2\,\text{Cos}[e+f\,x]+51\,a\,b^4\,c^2\,d^2\,\text{Cos}[e+f\,x]+27\,a^4\,b\,c\,d^3\,\text{Cos}[e+f\,x]-$$
$$\left.51\,a^2\,b^3\,c\,d^3\,\text{Cos}[e+f\,x]-11\,a^5\,d^4\,\text{Cos}[e+f\,x]+17\,a^3\,b^2\,d^4\,\text{Cos}[e+f\,x]\right)\Big/$$
$$\left.\left(4\,b^3\,\left(-a^2+b^2\right)^2\,\left(a+b\,\text{Sin}[e+f\,x]\right)\right)\right)-\frac{1}{48\,\left(a-b\right)^2\,b^3\,\left(a+b\right)^2\,f}$$

$$\left(-\left(\left(2\left(-48 a^2 b^3 c^5-24 b^5 c^5+306 a b^4 c^4 d-177 a^2 b^3 c^3 d^2-327 b^5 c^3 d^2-105 a^3 b^2 c^2 d^3+\right.\right.\right.\right.$$

$$\left.501 a b^4 c^2 d^3+13 a^4 b c d^4-53 a^2 b^3 c d^4-104 b^5 c d^4+35 a^5 d^5-73 a^3 b^2 d^5+56 a b^4 d^5\right)$$

$$\left.\text{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/$$

$$\left.\left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\right)-$$

$$\left(2 \mathbb{i}\left(-60 a^2 b^3 c^4 d-12 b^5 c^4 d+36 a^3 b^2 c^3 d^2+252 a b^4 c^3 d^2-228 a^4 b c^2 d^3+276 a^2 b^3 c^2 d^3-\right.\right.$$

$$\left.480 b^5 c^2 d^3+140 a^5 c d^4-364 a^3 b^2 c d^4+512 a b^4 c d^4+56 a^4 b d^5-112 a^2 b^3 d^5-16 b^5 d^5\right)$$

$$\operatorname{Cos}[e+f x]\left((b c-a d) \text{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$

$$\left.a d \text{EllipticPi}\left[\frac{b(c+d)}{b c-a d}, \mathbb{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d \operatorname{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \operatorname{Sin}[e+f x]}{c-d}}\left(-b c+a d+b(c+d \operatorname{Sin}[e+f x])\right)\right) \Big/$$

$$\left(b d^2 \sqrt{-\frac{1}{c+d}}(b c-a d)(a+b \operatorname{Sin}[e+f x]) \sqrt{1-\operatorname{Sin}[e+f x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2 c(c+d \operatorname{Sin}[e+f x])+(c+d \operatorname{Sin}[e+f x])^2}{d^2}}\right)-$$

$$\left(2 \mathbb{i}\left(18 a b^4 c^4 d-21 a^2 b^3 c^3 d^2-51 b^5 c^3 d^2-45 a^3 b^2 c^2 d^3+153 a b^4 c^2 d^3+185 a^4 b c d^4-\right.\right.$$

$$\left.361 a^2 b^3 c d^4+104 b^5 c d^4-105 a^5 d^5+195 a^3 b^2 d^5-72 a b^4 d^5\right) \operatorname{Cos}[e+f x] \operatorname{Cos}[2(e+f x)]$$

$$\left(2 b(c-d)(b c-a d) \text{EllipticE}\left[\mathbb{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$

$$d\left(-2(a+b)(-b c+a d) \text{EllipticF}\left[\mathbb{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$

$$\left(2 a^2 - b^2\right) d \,\text{EllipticPi}\left[\frac{b\,(c+d)}{b c - a d},\right.$$
$$\left.\left.\left. i \,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c + d \,\text{Sin}[e+f x]}\,\right],\ \frac{c+d}{c-d}\right]\right)\right)$$
$$\left.\sqrt{\frac{d - d \,\text{Sin}[e+f x]}{c+d}}\,\sqrt{-\frac{d + d \,\text{Sin}[e+f x]}{c-d}}\,\left(-b c + a d + b\,(c + d \,\text{Sin}[e+f x])\right)\right) \Big/$$
$$\left(b^2 d \sqrt{-\frac{1}{c+d}}\,(b c - a d)\,(a + b \,\text{Sin}[e+f x])\,\sqrt{1 - \text{Sin}[e+f x]^2}\right.$$
$$\left(-2 c^2 + d^2 + 4 c\,(c + d \,\text{Sin}[e+f x]) - 2\,(c + d \,\text{Sin}[e+f x])^2\right)$$
$$\left.\left.\sqrt{-\frac{c^2 - d^2 - 2 c\,(c + d \,\text{Sin}[e+f x]) + (c + d \,\text{Sin}[e+f x])^2}{d^2}}\right)\right)$$

Problem 759: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c + d \,\text{Sin}[e+f x])^{7/2}}{(a + b \,\text{Sin}[e+f x])^3}\, dx$$

Optimal (type 4, 605 leaves, 10 steps) :

$$\frac{(b c-a d)^2 \left(6 a b c+5 a^2 d-11 b^2 d\right) \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{4 b^2 \left(a^2-b^2\right)^2 f (a+b \text{Sin}[e+f x])}+$$
$$\frac{(b c-a d)^2 \text{Cos}[e+f x] (c+d \text{Sin}[e+f x])^{3/2}}{2 b \left(a^2-b^2\right) f (a+b \text{Sin}[e+f x])^2}-$$
$$\left(\left(8 a^3 b c d^2-15 a^4 d^3+b^4 d \left(13 c^2-8 d^2\right)-2 a b^3 c \left(3 c^2+13 d^2\right)+a^2 b^2 d \left(5 c^2+29 d^2\right)\right) \text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \text{Sin}[e+f x]}\right) \Bigg/ \left(4 b^3 \left(a^2-b^2\right)^2 f \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right)+$$
$$\left(3 (b c-a d) \left(4 a^3 b c d^2+5 a^4 d^3+a^2 b^2 d \left(c^2-11 d^2\right)-2 a b^3 c \left(c^2+5 d^2\right)+b^4 d \left(5 c^2+8 d^2\right)\right) \text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right) \Bigg/$$
$$\left(4 b^4 \left(a^2-b^2\right)^2 f \sqrt{c+d \text{Sin}[e+f x]}\right)+$$
$$\left((b c-a d)^2 \left(12 a^3 b c d-36 a b^3 c d+15 a^4 d^2+2 a^2 b^2 \left(4 c^2-19 d^2\right)+b^4 \left(4 c^2+35 d^2\right)\right) \text{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right) \Bigg/$$
$$\left(4 (a-b)^2 b^4 (a+b)^3 f \sqrt{c+d \text{Sin}[e+f x]}\right)$$

Result (type 4, 1323 leaves):

$$\frac{1}{f}\sqrt{c+d \text{Sin}[e+f x]}$$
$$\left(\left(-b^3 c^3 \text{Cos}[e+f x]+3 a b^2 c^2 d \text{Cos}[e+f x]-3 a^2 b c d^2 \text{Cos}[e+f x]+a^3 d^3 \text{Cos}[e+f x]\right) \Big/ \left(2 b^2 \left(-a^2+b^2\right) (a+b \text{Sin}[e+f x])^2\right)+\right.$$
$$\left(6 a b^3 c^3 \text{Cos}[e+f x]-5 a^2 b^2 c^2 d \text{Cos}[e+f x]-13 b^4 c^2 d \text{Cos}[e+f x]-8 a^3 b c d^2 \text{Cos}[e+f x]+26 a b^3 c d^2 \text{Cos}[e+f x]+7 a^4 d^3 \text{Cos}[e+f x]-13 a^2 b^2 d^3 \text{Cos}[e+f x]\right) \Big/$$
$$\left.\left(4 b^2 \left(-a^2+b^2\right)^2 (a+b \text{Sin}[e+f x])\right)\right)+\frac{1}{16 (a-b)^2 b^2 (a+b)^2 f}$$
$$\left(-\left(\left(\left(2 \left(16 a^2 b^2 c^4+8 b^4 c^4-78 a b^3 c^3 d+33 a^2 b^2 c^2 d^2+57 b^4 c^2 d^2+8 a^3 b c d^3-50 a b^3 c d^3+5 a^4 d^4-\right.\right.\right.\right.\right.$$
$$\left.7 a^2 b^2 d^4+8 b^4 d^4\right) \text{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\Bigg/$$

$$\left(\left(a+b\right)\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg)-\Bigg(2\,\mathrm{i}\,\left(20\,a^2\,b^2\,c^3\,d+4\,b^4\,c^3\,d-8\,a^3\,b\,c^2\,d^2-\right.$$

$$\left.64\,a\,b^3\,c^2\,d^2+20\,a^4\,c\,d^3-12\,a^2\,b^2\,c\,d^3+64\,b^4\,c\,d^3+8\,a^3\,b\,d^4-32\,a\,b^3\,d^4\right)\mathrm{Cos}[e+f\,x]$$

$$\left(\left(b\,c-a\,d\right)\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\mathrm{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg)\Bigg/$$

$$\left(b\,d^2\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\right)-$$

$$\Bigg(2\,\mathrm{i}\,\left(-6\,a\,b^3\,c^3\,d+5\,a^2\,b^2\,c^2\,d^2+13\,b^4\,c^2\,d^2+8\,a^3\,b\,c\,d^3-26\,a\,b^3\,c\,d^3-15\,a^4\,d^4+\right.$$

$$\left.29\,a^2\,b^2\,d^4-8\,b^4\,d^4\right)\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}\left[2\,\left(e+f\,x\right)\right]\,\Bigg(2\,b\,\left(c-d\right)\left(b\,c-a\,d\right)$$

$$\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\,\Bigg(-2\,\left(a+b\right)\left(-b\,c+a\,d\right)$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)d$$

$$\mathrm{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\Bigg)\Bigg)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg)\Bigg/$$

$$\left(b^2 d \sqrt{-\frac{1}{c+d}} (b c-a d) (a+b \text{Sin}[e+f x]) \sqrt{1-\text{Sin}[e+f x]^2}\right.$$
$$\left(-2 c^2+d^2+4 c (c+d \text{Sin}[e+f x])-2 (c+d \text{Sin}[e+f x])^2\right)$$
$$\left.\left.\sqrt{-\frac{c^2-d^2-2 c (c+d \text{Sin}[e+f x])+(c+d \text{Sin}[e+f x])^2}{d^2}}\right)\right)$$

Problem 760: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(c+d \text{Sin}[e+f x])^{5/2}}{(a+b \text{Sin}[e+f x])^3} \, dx$$

Optimal (type 4, 549 leaves, 10 steps):

$$\frac{(b c-a d)^2 \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{2 b \left(a^2-b^2\right) f (a+b \text{Sin}[e+f x])^2}+$$
$$\frac{3 (b c-a d) \left(2 a b c+a^2 d-3 b^2 d\right) \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{4 b \left(a^2-b^2\right)^2 f (a+b \text{Sin}[e+f x])}+$$
$$\left(3 (b c-a d) \left(2 a b c+a^2 d-3 b^2 d\right) \text{EllipticE}\left[\frac{1}{2} \left(e-\frac{\pi }{2}+f x\right),\frac{2 d}{c+d}\right] \sqrt{c+d \text{Sin}[e+f x]}\right)\Bigg/$$
$$\left(4 b^2 \left(a^2-b^2\right)^2 f \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right)+$$
$$\left(\left(4 a^3 b c d^2+3 a^4 d^3+a^2 b^2 d \left(7 c^2-5 d^2\right)+b^4 d \left(11 c^2+8 d^2\right)-2 a b^3 c \left(3 c^2+11 d^2\right)\right) \text{EllipticF}\left[\right.\right.$$
$$\left.\left.\frac{1}{2} \left(e-\frac{\pi }{2}+f x\right),\frac{2 d}{c+d}\right] \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right)\Bigg/\left(4 b^3 \left(a^2-b^2\right)^2 f \sqrt{c+d \text{Sin}[e+f x]}\right)+$$
$$\left((b c-a d) \left(4 a^3 b c d-28 a b^3 c d+3 a^4 d^2+2 a^2 b^2 \left(4 c^2-3 d^2\right)+b^4 \left(4 c^2+15 d^2\right)\right)\right.$$
$$\left.\text{EllipticPi}\left[\frac{2 b}{a+b},\frac{1}{2} \left(e-\frac{\pi }{2}+f x\right),\frac{2 d}{c+d}\right] \sqrt{\frac{c+d \text{Sin}[e+f x]}{c+d}}\right)\Bigg/$$
$$\left(4 (a-b)^2 b^3 (a+b)^3 f \sqrt{c+d \text{Sin}[e+f x]}\right)$$

Result (type 4, 1149 leaves):

$$\frac{1}{f}\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}$$

$$\left(\frac{-b^2 c^2 \mathrm{Cos}[e+f\,x]+2\,a\,b\,c\,d\,\mathrm{Cos}[e+f\,x]-a^2 d^2 \mathrm{Cos}[e+f\,x]}{2\,b\,(-a^2+b^2)\,(a+b\,\mathrm{Sin}[e+f\,x])^2}-\left(3\,\left(-2\,a\,b^2 c^2 \mathrm{Cos}[e+f\,x]+\right.\right.\right.$$

$$\left.\left.a^2 b\,c\,d\,\mathrm{Cos}[e+f\,x]+3\,b^3 c\,d\,\mathrm{Cos}[e+f\,x]+a^3 d^2 \mathrm{Cos}[e+f\,x]-3\,a\,b^2 d^2 \mathrm{Cos}[e+f\,x]\right)\right)\Big/$$

$$\left.\left(4\,b\,(-a^2+b^2)^2\,(a+b\,\mathrm{Sin}[e+f\,x])\right)\right)-\frac{1}{16\,(a-b)^2\,b\,(a+b)^2\,f}$$

$$\left(-\left(\left(2\,\left(-16\,a^2 b\,c^3-8\,b^3 c^3+54\,a\,b^2 c^2 d-15\,a^2 b\,c\,d^2-21\,b^3 c\,d^2+a^3 d^3+5\,a\,b^2 d^3\right)\mathrm{EllipticPi}\left[\right.\right.\right.\right.$$

$$\left.\left.\frac{2\,b}{a+b},\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left.\left((a+b)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$\left(2\,\mathrm{i}\,\left(-20\,a^2 b\,c^2 d-4\,b^3 c^2 d+4\,a^3 c\,d^2+44\,a\,b^2 c\,d^2-8\,a^2 b\,d^3-16\,b^3 d^3\right)\mathrm{Cos}[e+f\,x]\right.$$

$$\left((b\,c-a\,d)\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\mathrm{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)$$

$$\left.\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\mathrm{Sin}[e+f\,x])\right)\right)\Big/$$

$$\left(b\,d^2\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\mathrm{Sin}[e+f\,x])\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\mathrm{Sin}[e+f\,x])+(c+d\,\mathrm{Sin}[e+f\,x])^2}{d^2}}\right)-$$

$$\left(2\,\mathrm{i}\,\left(6\,a\,b^2 c^2 d-3\,a^2 b\,c\,d^2-9\,b^3 c\,d^2-3\,a^3 d^3+9\,a\,b^2 d^3\right)\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}[2\,(e+f\,x)]\right.$$

$$\left(2\,b\,(c-d)\,(b\,c-a\,d)\,\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$d\left(-2\,(a+b)\,(-b\,c+a\,d)\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\right.$$
$$\left(2\,a^2-b^2\right)\,d\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\right.$$
$$\left.\left.i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$
$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\right)\Big/$$
$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$
$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$
$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 761: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{3/2}}{(a+b\,\text{Sin}[e+f\,x])^3}\,dx$$

Optimal (type 4, 472 leaves, 10 steps):

$$\frac{(b c-a d) \operatorname{Cos}[e+f x] \sqrt{c+d \operatorname{Sin}[e+f x]}}{2 (a^2-b^2) f (a+b \operatorname{Sin}[e+f x])^2}+\frac{(6 a b c-a^2 d-5 b^2 d) \operatorname{Cos}[e+f x] \sqrt{c+d \operatorname{Sin}[e+f x]}}{4 (a^2-b^2)^2 f (a+b \operatorname{Sin}[e+f x])}+$$

$$\left((6 a b c-a^2 d-5 b^2 d) \operatorname{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{c+d \operatorname{Sin}[e+f x]}\right) \Big/ \left(4 b (a^2-b^2)^2 f \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right)-$$

$$\left((b c-a d) (6 a b c+a^2 d-7 b^2 d) \operatorname{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left(4 b^2 (a^2-b^2)^2 f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)-$$

$$\left((4 a^3 b c d+20 a b^3 c d+a^4 d^2-b^4 (4 c^2+3 d^2)-2 a^2 b^2 (4 c^2+5 d^2)) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(e-\frac{\pi}{2}+f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left(4 (a-b)^2 b^2 (a+b)^3 f \sqrt{c+d \operatorname{Sin}[e+f x]}\right)$$

Result (type 4, 1001 leaves):

$$\frac{1}{f}\sqrt{c+d \operatorname{Sin}[e+f x]}$$

$$\left(\frac{b c \operatorname{Cos}[e+f x]-a d \operatorname{Cos}[e+f x]}{2 (a^2-b^2) (a+b \operatorname{Sin}[e+f x])^2}+\frac{6 a b c \operatorname{Cos}[e+f x]-a^2 d \operatorname{Cos}[e+f x]-5 b^2 d \operatorname{Cos}[e+f x]}{4 (a^2-b^2)^2 (a+b \operatorname{Sin}[e+f x])}\right)+$$

$$\frac{1}{16 (a-b)^2 (a+b)^2 f}$$

$$\left(-\left(\left(2 (16 a^2 c^2+8 b^2 c^2-30 a b c d+5 a^2 d^2+b^2 d^2) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right]\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\right) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\right)-$$

$$\left(2 i (20 a^2 c d+4 b^2 c d-24 a b d^2) \operatorname{Cos}[e+f x]\right.$$

$$\left((b c-a d) \operatorname{EllipticF}\left[i \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+\right.$$

$$\left.a d \operatorname{EllipticPi}\left[\frac{b (c+d)}{b c-a d}, i \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\right)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\;\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\;\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\;\left(b\,c-a\,d\right)\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\right)-$$

$$\Bigg(2\,\mathrm{i}\,\left(-6\,a\,b\,c\,d+a^2\,d^2+5\,b^2\,d^2\right)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}\left[2\,\left(e+f\,x\right)\right]\,\Bigg(2\,b\,\left(c-d\right)\,\left(b\,c-a\,d\right)$$

$$\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\;\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\,\Bigg(-2\,\left(a+b\right)\,\left(-b\,c+a\,d\right)$$

$$\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\;\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\mathrm{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\mathrm{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\;\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\;\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\;\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg)\Bigg/$$

$$\Bigg(b^2\,d\,\sqrt{-\frac{1}{c+d}}\;\left(b\,c-a\,d\right)\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}$$

$$\left(-2\,c^2+d^2+4\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)-2\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2\right)$$

$$\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\Bigg)\Bigg)$$

Problem 762: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{\left(a+b\,\mathrm{Sin}[e+f\,x]\right)^3}\,dx$$

Optimal (type 4, 487 leaves, 10 steps):

$$\frac{b\,\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{2\left(a^2-b^2\right) f\left(a+b\,\text{Sin}[e+f x]\right)^2}+\frac{b\left(6 a b c-5 a^2 d-b^2 d\right)\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{4\left(a^2-b^2\right)^2\left(b c-a d\right) f\left(a+b\,\text{Sin}[e+f x]\right)}+$$

$$\left(\left(6 a b c-5 a^2 d-b^2 d\right)\text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 d}{c+d}\right]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Big/$$

$$\left(4\left(a^2-b^2\right)^2\left(b c-a d\right) f\sqrt{\frac{c+d\,\text{Sin}[e+f x]}{c+d}}\right)-$$

$$\frac{3\left(2 a b c-a^2 d-b^2 d\right)\text{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f x]}{c+d}}}{4 b\left(a^2-b^2\right)^2 f\sqrt{c+d\,\text{Sin}[e+f x]}}-$$

$$\left(\left(12 a^3 b c d+12 a b^3 c d-3 a^4 d^2-b^4\left(4 c^2-d^2\right)-2 a^2 b^2\left(4 c^2+5 d^2\right)\right)\right.$$

$$\left.\text{EllipticPi}\left[\frac{2 b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f x]}{c+d}}\right)\Big/$$

$$\left(4\left(a-b\right)^2 b\left(a+b\right)^3\left(b c-a d\right) f\sqrt{c+d\,\text{Sin}[e+f x]}\right)$$

Result (type 4, 1038 leaves):

$$\frac{1}{f}\sqrt{c+d\,\text{Sin}[e+f x]}$$

$$\left(\frac{b\,\text{Cos}[e+f x]}{2\left(a^2-b^2\right)\left(a+b\,\text{Sin}[e+f x]\right)^2}-\frac{6 a b^2 c\,\text{Cos}[e+f x]-5 a^2 b d\,\text{Cos}[e+f x]-b^3 d\,\text{Cos}[e+f x]}{4\left(a^2-b^2\right)^2\left(-b c+a d\right)\left(a+b\,\text{Sin}[e+f x]\right)}\right)+$$

$$\frac{1}{16\left(a-b\right)^2\left(a+b\right)^2\left(-b c+a d\right) f}$$

$$\left(-\left(\left(2\left(-16 a^2 b c^2-8 b^3 c^2+16 a^3 c d+14 a b^2 c d-9 a^2 b d^2+3 b^3 d^2\right)\text{EllipticPi}\left[\frac{2 b}{a+b},\right.\right.\right.\right.$$

$$\left.\left.\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right),\frac{2 d}{c+d}\right]\sqrt{\frac{c+d\,\text{Sin}[e+f x]}{c+d}}\right)\Big/\left(\left(a+b\right)\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$\left(2\,i\left(-20 a^2 b c d-4 b^3 c d+16 a^3 d^2+8 a b^2 d^2\right)\text{Cos}[e+f x]\right.$$

$$\left(\left(b c-a d\right)\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right],\frac{c+d}{c-d}\right]+\right.$$

$$a\,d\,\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\Bigg)$$

$$\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\Bigg)\Bigg/$$

$$\Bigg(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}$$

$$\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\Bigg)-$$

$$\Bigg(2\,i\,(6\,a\,b^2\,c\,d-5\,a^2\,b\,d^2-b^3\,d^2)\,\text{Cos}[e+f\,x]\,\text{Cos}[2\,(e+f\,x)]\,\Bigg(2\,b\,(c-d)\,(b\,c-a\,d)$$

$$\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+d\,\Bigg(-2\,(a+b)\,(-b\,c+a\,d)$$

$$\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+(2\,a^2-b^2)\,d$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\,i\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\Bigg)\Bigg)$$

$$\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\Bigg)\Bigg/$$

$$\Bigg(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\Bigg)\Bigg)$$

Problem 763: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Sin}[e+f\,x])^3\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 503 leaves, 10 steps):

$$\frac{b^2\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{2\,(a^2-b^2)\,(b\,c-a\,d)\,f\,(a+b\,\mathrm{Sin}[e+f\,x])^2}+\frac{3\,b^2\,(2\,a\,b\,c-3\,a^2\,d+b^2\,d)\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{4\,(a^2-b^2)^2\,(b\,c-a\,d)^2\,f\,(a+b\,\mathrm{Sin}[e+f\,x])}+$$
$$\left(3\,b\,(2\,a\,b\,c-3\,a^2\,d+b^2\,d)\,\mathrm{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/$$
$$\left(4\,(a^2-b^2)^2\,(b\,c-a\,d)^2\,f\,\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)-$$
$$\frac{(6\,a\,b\,c-7\,a^2\,d+b^2\,d)\,\mathrm{EllipticF}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}}{4\,(a^2-b^2)^2\,(b\,c-a\,d)\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}-$$
$$\left((20\,a^3\,b\,c\,d+4\,a\,b^3\,c\,d-15\,a^4\,d^2-2\,a^2\,b^2\,(4\,c^2-3\,d^2)-b^4\,(4\,c^2+3\,d^2))\right.$$
$$\left.\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/$$
$$\left(4\,(a-b)^2\,(a+b)^3\,(b\,c-a\,d)^2\,f\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)$$

Result (type 4, 1069 leaves):

$$\frac{1}{f}\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\left(-\frac{b^2\,\mathrm{Cos}[e+f\,x]}{2\,(a^2-b^2)\,(-b\,c+a\,d)\,(a+b\,\mathrm{Sin}[e+f\,x])^2}+\right.$$
$$\left.\frac{3\,(2\,a\,b^3\,c\,\mathrm{Cos}[e+f\,x]-3\,a^2\,b^2\,d\,\mathrm{Cos}[e+f\,x]+b^4\,d\,\mathrm{Cos}[e+f\,x])}{4\,(a^2-b^2)^2\,(-b\,c+a\,d)^2\,(a+b\,\mathrm{Sin}[e+f\,x])}\right)+$$
$$\frac{1}{16\,(a-b)^2\,(a+b)^2\,(-b\,c+a\,d)^2\,f}$$
$$\left(-\left(\left(2\,(16\,a^2\,b^2\,c^2+8\,b^4\,c^2-32\,a^3\,b\,c\,d+2\,a\,b^3\,c\,d+16\,a^4\,d^2-19\,a^2\,b^2\,d^2+9\,b^4\,d^2)\,\mathrm{EllipticPi}\left[\frac{2\,b}{a+b},\right.\right.\right.\right.$$
$$\left.\left.\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right),\frac{2\,d}{c+d}\right]\sqrt{\frac{c+d\,\mathrm{Sin}[e+f\,x]}{c+d}}\right)\Big/\left((a+b)\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg(2\,\mathbb{i}\,\left(20\,a^2\,b^2\,c\,d+4\,b^4\,c\,d-32\,a^3\,b\,d^2+8\,a\,b^3\,d^2\right)\,\mathrm{Cos}[e+f\,x]$$

$$\left(\left(b\,c-a\,d\right)\,\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+\right.$$

$$\left.a\,d\,\mathrm{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\right)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg)\Big/$$

$$\left(b\,d^2\,\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)+\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2}{d^2}}\right)-$$

$$\Bigg(2\,\mathbb{i}\,\left(-6\,a\,b^3\,c\,d+9\,a^2\,b^2\,d^2-3\,b^4\,d^2\right)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Cos}\left[2\,\left(e+f\,x\right)\right]\,\Bigg(2\,b\,\left(c-d\right)\,\left(b\,c-a\,d\right)$$

$$\mathrm{EllipticE}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+d\,\Bigg(-2\,\left(a+b\right)\,\left(-b\,c+a\,d\right)$$

$$\mathrm{EllipticF}\left[\mathbb{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\mathrm{EllipticPi}\left[\frac{b\,\left(c+d\right)}{b\,c-a\,d},\,\mathbb{i}\,\mathrm{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right],\,\frac{c+d}{c-d}\right]\Bigg)\Bigg)$$

$$\sqrt{\frac{d-d\,\mathrm{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\mathrm{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)\right)\Bigg)\Big/$$

$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,\left(b\,c-a\,d\right)\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\sqrt{1-\mathrm{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)-2\,\left(c+d\,\mathrm{Sin}[e+f\,x]\right)^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,\left(c+d\,\text{Sin}[e+f\,x]\right)+\left(c+d\,\text{Sin}[e+f\,x]\right)^2}{d^2}}\,\right)\right)$$

Problem 764: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{\left(a+b\,\text{Sin}[e+f\,x]\right)^3\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 682 leaves, 11 steps):

$$-\left(\left(d\,\left(8\,a^4\,d^3+a^2\,b^2\,d\,\left(13\,c^2-29\,d^2\right)-b^4\,d\,\left(7\,c^2-15\,d^2\right)-6\,a\,b^3\,c\,\left(c^2-d^2\right)\right)\,\text{Cos}[e+f\,x]\right)\Big/\left(4\,\left(a^2-b^2\right)^2\,\left(b\,c-a\,d\right)^3\,\left(c^2-d^2\right)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+\frac{b^2\,\text{Cos}[e+f\,x]}{2\,\left(a^2-b^2\right)\,\left(b\,c-a\,d\right)\,f\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+\frac{b^2\,\left(6\,a\,b\,c-11\,a^2\,d+5\,b^2\,d\right)\,\text{Cos}[e+f\,x]}{4\,\left(a^2-b^2\right)^2\,\left(b\,c-a\,d\right)^2\,f\,\left(a+b\,\text{Sin}[e+f\,x]\right)\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}-$$

$$\left(\left(8\,a^4\,d^3+a^2\,b^2\,d\,\left(13\,c^2-29\,d^2\right)-b^4\,d\,\left(7\,c^2-15\,d^2\right)-6\,a\,b^3\,c\,\left(c^2-d^2\right)\right)\,\text{EllipticE}\left[\frac{1}{2}\,\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(4\,\left(a^2-b^2\right)^2\,\left(b\,c-a\,d\right)^3\,\left(c^2-d^2\right)\,f\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)-$$

$$\left(b\,\left(6\,a\,b\,c-11\,a^2\,d+5\,b^2\,d\right)\,\text{EllipticF}\left[\frac{1}{2}\,\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left(4\,\left(a^2-b^2\right)^2\,\left(b\,c-a\,d\right)^2\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left(b\,\left(28\,a^3\,b\,c\,d-4\,a\,b^3\,c\,d-35\,a^4\,d^2-2\,a^2\,b^2\,\left(4\,c^2-19\,d^2\right)-b^4\,\left(4\,c^2+15\,d^2\right)\right)\,\text{EllipticPi}\left[\frac{2\,b}{a+b},\frac{1}{2}\,\left(e-\frac{\pi}{2}+f\,x\right),\frac{2\,d}{c+d}\right]\,\sqrt{\frac{c+d\,\text{Sin}[e+f\,x]}{c+d}}\right)\Big/\left(4\,\left(a-b\right)^2\,\left(a+b\right)^3\,\left(b\,c-a\,d\right)^3\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)$$

Result (type 4, 1318 leaves):

$$\frac{1}{f}\sqrt{c+d\,\text{Sin}[e+f\,x]}\,\left(\frac{b^3\,\text{Cos}[e+f\,x]}{2\,\left(a^2-b^2\right)\,\left(-b\,c+a\,d\right)^2\,\left(a+b\,\text{Sin}[e+f\,x]\right)^2}-\frac{6\,a\,b^4\,c\,\text{Cos}[e+f\,x]-13\,a^2\,b^3\,d\,\text{Cos}[e+f\,x]+7\,b^5\,d\,\text{Cos}[e+f\,x]}{4\,\left(a^2-b^2\right)^2\,\left(-b\,c+a\,d\right)^3\,\left(a+b\,\text{Sin}[e+f\,x]\right)}-\right.$$

$$\left.\frac{2 d^4 \operatorname{Cos}[e+f x]}{(b c-a d)^3 \left(c^2-d^2\right) (c+d \operatorname{Sin}[e+f x])}\right)+$$

$$\frac{1}{16 (a-b)^2 (a+b)^2 (c-d) (c+d) (-b c+a d)^3 f}$$

$$\Bigg(-\Bigg(\Bigg(2 \left(-16 a^2 b^3 c^4-8 b^5 c^4+48 a^3 b^2 c^3 d-18 a b^4 c^3 d-48 a^4 b c^2 d^2+95 a^2 b^3 c^2 d^2-29 b^5 c^2 d^2+16 a^5 c d^3-80 a^3 b^2 c d^3+34 a b^4 c d^3+56 a^4 b d^4-95 a^2 b^3 d^4+45 b^5 d^4\right) \operatorname{EllipticPi}\left[\frac{2 b}{a+b}, \frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right), \frac{2 d}{c+d}\right] \sqrt{\frac{c+d \operatorname{Sin}[e+f x]}{c+d}}\Bigg) \Big/ \left((a+b) \sqrt{c+d \operatorname{Sin}[e+f x]}\right)\Bigg)-$$

$$\Bigg(2 \mathrm{i} \left(-20 a^2 b^3 c^3 d-4 b^5 c^3 d+48 a^3 b^2 c^2 d^2-24 a b^4 c^2 d^2+16 a^4 b c d^3-12 a^2 b^3 c d^3+20 b^5 c d^3+16 a^5 d^4-80 a^3 b^2 d^4+40 a b^4 d^4\right) \operatorname{Cos}[e+f x]$$

$$\Bigg((b c-a d) \operatorname{EllipticF}\left[\mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]+a d \operatorname{EllipticPi}\left[\frac{b (c+d)}{b c-a d}, \mathrm{i} \operatorname{ArcSinh}\left[\sqrt{-\frac{1}{c+d}} \sqrt{c+d \operatorname{Sin}[e+f x]}\right], \frac{c+d}{c-d}\right]\Bigg)$$

$$\sqrt{\frac{d-d \operatorname{Sin}[e+f x]}{c+d}} \sqrt{-\frac{d+d \operatorname{Sin}[e+f x]}{c-d}} (-b c+a d+b (c+d \operatorname{Sin}[e+f x]))\Bigg) \Big/$$

$$\Bigg(b d^2 \sqrt{-\frac{1}{c+d}} (b c-a d) (a+b \operatorname{Sin}[e+f x]) \sqrt{1-\operatorname{Sin}[e+f x]^2}$$

$$\sqrt{-\frac{c^2-d^2-2 c (c+d \operatorname{Sin}[e+f x])+(c+d \operatorname{Sin}[e+f x])^2}{d^2}}\Bigg)-$$

$$\Bigg(2 \mathrm{i} \left(6 a b^4 c^3 d-13 a^2 b^3 c^2 d^2+7 b^5 c^2 d^2-6 a b^4 c d^3-8 a^4 b d^4+29 a^2 b^3 d^4-15 b^5 d^4\right)$$

$$\operatorname{Cos}[e+f x] \operatorname{Cos}[2 (e+f x)] \Bigg(2 b (c-d) (b c-a d)$$

$$\text{EllipticE}\left[\mathbb{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+d\left(-2\,(a+b)\,(-b\,c+a\,d)\right.$$

$$\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]+\left(2\,a^2-b^2\right)\,d$$

$$\left.\left.\text{EllipticPi}\left[\frac{b\,(c+d)}{b\,c-a\,d},\mathbb{i}\,\text{ArcSinh}\left[\sqrt{-\frac{1}{c+d}}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right],\frac{c+d}{c-d}\right]\right)\right)$$

$$\left.\sqrt{\frac{d-d\,\text{Sin}[e+f\,x]}{c+d}}\,\sqrt{-\frac{d+d\,\text{Sin}[e+f\,x]}{c-d}}\,\left(-b\,c+a\,d+b\,(c+d\,\text{Sin}[e+f\,x])\right)\right)\Big/$$

$$\left(b^2\,d\,\sqrt{-\frac{1}{c+d}}\,(b\,c-a\,d)\,(a+b\,\text{Sin}[e+f\,x])\,\sqrt{1-\text{Sin}[e+f\,x]^2}\right.$$

$$\left(-2\,c^2+d^2+4\,c\,(c+d\,\text{Sin}[e+f\,x])-2\,(c+d\,\text{Sin}[e+f\,x])^2\right)$$

$$\left.\left.\sqrt{-\frac{c^2-d^2-2\,c\,(c+d\,\text{Sin}[e+f\,x])+(c+d\,\text{Sin}[e+f\,x])^2}{d^2}}\right)\right)$$

Problem 765: Result more than twice size of optimal antiderivative.

$$\int\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{5/2}\,dx$$

Optimal (type 4, 888 leaves, 8 steps):

$$\frac{1}{24\,b^2\,(b\,c-a\,d)\,f}\sqrt{a+b}\,(c-d)\,\sqrt{c+d}\,\left(14\,a\,b\,c\,d-3\,a^2\,d^2+b^2\,(33\,c^2+16\,d^2)\right)$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-$$

$$\frac{1}{8\,b^3\,\sqrt{a+b}\,d\,f}\sqrt{c+d}\,\left(5\,a^2\,b\,c\,d^2-a^3\,d^3-a\,b^2\,d\,(15\,c^2+4\,d^2)-5\,b^3\,(c^3+4\,c\,d^2)\right)$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-$$

$$\left(\left(14\,a\,b\,c\,d-3\,a^2\,d^2+b^2\,(33\,c^2+16\,d^2)\right)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$
$$\left(24\,b\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\right)-$$

$$\frac{d\,(13\,b\,c-3\,a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{12\,b\,f}-$$

$$\frac{d^2\,\text{Cos}[e+f\,x]\,(a+b\,\text{Sin}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{3\,b\,f}+\frac{1}{24\,b^3\,\sqrt{c+d}\,f}$$

$$(a+b)^{3/2}\,\left(3\,a^2\,d^2-6\,a\,b\,d\,(2\,c+d)+b^2\,(33\,c^2+26\,c\,d+16\,d^2)\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 1948 leaves):

$$-\frac{1}{48\,b\,f}\left(-\left(\left(4\,(-b\,c+a\,d)\,\left(-48\,a\,b\,c^3-59\,b^2\,c^2\,d-58\,a\,b\,c\,d^2+a^2\,d^3-16\,b^2\,d^3\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right) -$$

$$4\,(-b c+a d)\,\left(-48 b^2 c^3-92 a b c^2 d+4 a^2 c d^2-76 b^2 c d^2-28 a b d^3\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right) -$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\Bigg)\Bigg/$$

$$\left(\left(a+b\right)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\Bigg)+$$

$$2\left(33\,b^2\,c^2\,d+14\,a\,b\,c\,d^2-3\,a^2\,d^3+16\,b^2\,d^3\right)\left(\frac{\mathrm{Cos}[e+f x]\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f x]}{a+b}}}\right],\right.\right.$$

$$\left.\frac{2\,(-b c+a d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\Bigg)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b c+a d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\,\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Bigg]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\left(\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}\right)}$$

$$\sqrt{\left(-\frac{1}{-b c+a d}(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])\right)} \Bigg/$$

$$\left((a+b)(c+d)\sqrt{a+b \operatorname{Sin}[e+f x]}\sqrt{c+d \operatorname{Sin}[e+f x]}\right)-$$

$$\Bigg((b c+a d)\sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}} \operatorname{EllipticPi}\Big[\frac{-b c+a d}{(a+b) d},$$

$$\operatorname{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\Big], \frac{2(-b c+a d)}{(a+b)(-c+d)}\Big] \operatorname{Sec}[e+f x]$$

$$\operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\left(\frac{(c+d) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \operatorname{Sin}[e+f x])}{-b c+a d}\right)}$$

$$\sqrt{\left(-\frac{1}{-b c+a d}(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])\right)} \Bigg/$$

$$\left((a+b) d \sqrt{a+b \operatorname{Sin}[e+f x]}\sqrt{c+d \operatorname{Sin}[e+f x]}\right)\Bigg)\Bigg)\Bigg) +$$

$$\frac{1}{f}\sqrt{a+b \operatorname{Sin}[e+f x]}\sqrt{c+d \operatorname{Sin}[e+f x]}\left(-\frac{d(13 b c+a d) \operatorname{Cos}[e+f x]}{12 b}-\frac{1}{6} d^2 \operatorname{Sin}[2(e+f x)]\right)$$

Problem 766: Result more than twice size of optimal antiderivative.

$$\int \sqrt{a+b \operatorname{Sin}[e+f x]}\,(c+d \operatorname{Sin}[e+f x])^{3/2}\,dx$$

Optimal (type 4, 784 leaves, 8 steps):

$$\frac{1}{4\,b\,(b\,c-a\,d)\,f}\sqrt{a+b}\,(c-d)\,\sqrt{c+d}\,(5\,b\,c+a\,d)$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+$$

$$\frac{1}{4\,b^2\,\sqrt{a+b}\,d\,f}\sqrt{c+d}\,\left(6\,a\,b\,c\,d-a^2\,d^2+b^2\,\left(3\,c^2+4\,d^2\right)\right)$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+$$

$$\frac{(b\,c-a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-$$

$$\frac{(5\,b\,c+a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{4\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\frac{1}{4\,b^2\,\sqrt{c+d}\,f}$$

$$(a+b)^{3/2}\,(5\,b\,c-a\,d+2\,b\,d)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$(c+d\,\text{Sin}[e+f\,x])-\frac{b\,\text{Cos}[e+f\,x]\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{2\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}$$

Result (type 4, 1849 leaves):

$$-\frac{d\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,f}+$$

$$\frac{1}{8\,f}\left(-\left(\left(\left(4\,(-b\,c+a\,d)\,\left(8\,a\,c^2+7\,b\,c\,d+3\,a\,d^2\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(8\,b\,c^2+12\,a\,c\,d+4\,b\,d^2\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\Big[\right.\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(-5\,b\,c\,d-a\,d^2\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/$$

$$\Big((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Big)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/$$

$$\Big((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Big)\Bigg)\Bigg)\Bigg)$$

Problem 767: Humongous result has more than 200000 leaves.

$$\int\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 4, 628 leaves, 7 steps):

$$\frac{1}{(b c-a d) f}\sqrt{a+b}\,(c-d)\,\sqrt{c+d}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]$$
$$\text{Sec}[e+f x]\,\sqrt{-\frac{(b c-a d)\,(1-\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}$$
$$\sqrt{\frac{(b c-a d)\,(1+\text{Sin}[e+f x])}{(c-d)\,(a+b\,\text{Sin}[e+f x])}}\,(a+b\,\text{Sin}[e+f x])+\frac{1}{b\sqrt{a+b}\,d f}$$
$$\sqrt{c+d}\,(b c+a d)\,\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]$$
$$\text{Sec}[e+f x]\,\sqrt{-\frac{(b c-a d)\,(1-\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}\,\sqrt{\frac{(b c-a d)\,(1+\text{Sin}[e+f x])}{(c-d)\,(a+b\,\text{Sin}[e+f x])}}$$
$$(a+b\,\text{Sin}[e+f x])-\frac{b\,\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{f\sqrt{a+b\,\text{Sin}[e+f x]}}+\frac{1}{b\sqrt{c+d}\,f}$$
$$(a+b)^{3/2}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f x]$$
$$\sqrt{\frac{(b c-a d)\,(1-\text{Sin}[e+f x])}{(a+b)\,(c+d\,\text{Sin}[e+f x])}}\,\sqrt{-\frac{(b c-a d)\,(1+\text{Sin}[e+f x])}{(a-b)\,(c+d\,\text{Sin}[e+f x])}}\,(c+d\,\text{Sin}[e+f x])$$

Result (type ?, 228 392 leaves) : Display of huge result suppressed!

Problem 768: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\text{Sin}[e+f x]}}{\sqrt{c+d\,\text{Sin}[e+f x]}}\,dx$$

Optimal (type 4, 198 leaves, 1 step) :

$$\frac{1}{\sqrt{a+b}\,d f}2\sqrt{c+d}\,\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]$$
$$\text{Sec}[e+f x]\,\sqrt{-\frac{(b c-a d)\,(1-\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}\,\sqrt{\frac{(b c-a d)\,(1+\text{Sin}[e+f x])}{(c-d)\,(a+b\,\text{Sin}[e+f x])}}\,(a+b\,\text{Sin}[e+f x])$$

Result (type 4, 578 leaves) :

$$-\frac{1}{f}4\left(-b c+a d\right)\left(\left(\sqrt{\frac{\left(c+d\right)\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\right.\right.\right.$$

$$\left.\frac{2\left(-b c+a d\right)}{\left(a+b\right)\left(-c+d\right)}\right]\mathrm{Sec}[e+f x]\ \mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{\left(c+d\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(a+b\,\mathrm{Sin}[e+f x]\right)}{-b c+a d}}$$

$$\left.\sqrt{-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(c+d\,\mathrm{Sin}[e+f x]\right)}{-b c+a d}}\right)\Big/$$

$$\left(\left(c+d\right)\sqrt{a+b\,\mathrm{Sin}[e+f x]}\ \sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)-\left(b\sqrt{\frac{\left(c+d\right)\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\right.$$

$$\mathrm{EllipticPi}\left[\frac{-b c+a d}{\left(a+b\right)d},\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\left(-b c+a d\right)}{\left(a+b\right)\left(-c+d\right)}\right]$$

$$\mathrm{Sec}[e+f x]\ \mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{\left(c+d\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(a+b\,\mathrm{Sin}[e+f x]\right)}{-b c+a d}}$$

$$\left.\sqrt{-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\left(c+d\,\mathrm{Sin}[e+f x]\right)}{-b c+a d}}\right)\Big/$$

$$\left.\left(\left(a+b\right)d\sqrt{a+b\,\mathrm{Sin}[e+f x]}\ \sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)$$

Problem 769: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\text{Sin}[e+f\,x]}}{(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 409 leaves, 3 steps):

$$-\left(\left(2\,(a-b)\,\sqrt{a+b}\;\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.\right.$$
$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$
$$\left.\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((c-d)\,\sqrt{c+d}\,(b\,c-a\,d)\,f\right)\right)+$$
$$\left(2\,(a-b)\,\sqrt{a+b}\;\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$
$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$
$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((c-d)\,\sqrt{c+d}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 1830 leaves):

$$-\frac{2\,d\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{(-c^2+d^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$
$$\frac{1}{(c-d)\,(c+d)\,f}\left(-\left(\left(\left(4\,a\,c\,(-b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.\right.$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$
$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$4\,(-b c+a d)\,(b c+a d)\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\Big[\frac{-b c+a d}{(a+b)\,d},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$2\,b\,d\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\right[\right.\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/$$

$$\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\right.$$

$$\left.\left.\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left(((a+b)\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 770: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b\,\text{Sin}[e+f\,x]}}{(c+d\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 489 leaves, 4 steps):

$$\frac{2\,d\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{3\,(c^2-d^2)\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}+$$

$$\left(2\,(a-b)\,\sqrt{a+b}\,\left(4\,a\,c\,d-b\,(3\,c^2+d^2)\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\right.\right.$$

$$\left.\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)^2\,f\right)+$$

$$\left(2\,(a-b)\,\sqrt{a+b}\,(3\,c+d)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\,\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 2037 leaves):

$$\frac{1}{f}\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\,\left(\frac{2\,d\,\text{Cos}[e+f\,x]}{3\,(c^2-d^2)\,(c+d\,\text{Sin}[e+f\,x])^2}+\right.$$

$$\left.\frac{2\,\left(3\,b\,c^2\,d\,\text{Cos}[e+f\,x]-4\,a\,c\,d^2\,\text{Cos}[e+f\,x]+b\,d^3\,\text{Cos}[e+f\,x]\right)}{3\,(b\,c-a\,d)\,(c^2-d^2)^2\,(c+d\,\text{Sin}[e+f\,x])}\right)+$$

$$\frac{1}{3\,(c-d)^2\,(c+d)^2\,(-b\,c+a\,d)\,f}$$

$$\left(-\left(\left(4\,(-b\,c+a\,d)\,\left(-3\,a\,b\,c^3+3\,a^2\,c^2\,d+b^2\,c^2\,d-a\,b\,c\,d^2+a^2\,d^3-b^2\,d^3\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right) -$$

$$4\,(-b c+a d)\,\left(-3 b^2 c^3+a b c^2 d+4 a^2 c d^2-b^2 c d^2-a b d^3\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right) -$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left(\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(3\,b^2\,c^2\,d-4\,a\,b\,c\,d^2+b^2\,d^3\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg)\Bigg)\Bigg)$$

Problem 772: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sin}[e+f\,x])^{3/2}\,(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}\,dx$$

Optimal (type 4, 870 leaves, 8 steps):

$$\Bigg(\sqrt{a+b}\,(c-d)\,\sqrt{c+d}\,\left(38\,a\,b\,c\,d+3\,a^2\,d^2+b^2\,\left(3\,c^2+16\,d^2\right)\right)$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])\Bigg)\Big/$$

$$(24\,b\,d\,(b\,c-a\,d)\,f)+\frac{1}{8\,b^2\,\sqrt{a+b}\,d^2\,f}\sqrt{c+d}\,(b\,c+a\,d)\,\left(10\,a\,b\,c\,d-a^2\,d^2-b^2\,\left(c^2-12\,d^2\right)\right)$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-$$

$$\left(\left(38\,a\,b\,c\,d+3\,a^2\,d^2+b^2\,\left(3\,c^2+16\,d^2\right)\right)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/$$

$$\left(24\,d\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\right)-$$

$$\frac{(3\,b\,c+7\,a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{12\,f}-\frac{1}{24\,b^2\,d\,\sqrt{c+d}\,f}$$

$$(a+b)^{3/2}\,\left(3\,a^2\,d^2-6\,a\,b\,d\,(4\,c+d)-b^2\,\left(3\,c^2+14\,c\,d+16\,d^2\right)\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])-$$

$$\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}{3\,f}$$

Result (type 4, 1922 leaves):

$$\frac{1}{48\,f}\Bigg(-\Bigg(\Bigg(4\,(-b\,c+a\,d)$$

$$\left(48\,a^2\,c^2+17\,b^2\,c^2+82\,a\,b\,c\,d+17\,a^2\,d^2+16\,b^2\,d^2\right)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\mathrm{Sec}[e+f x]\, \mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right) -$$

$$4\,(-b c+a d)\,\left(68 a b c^2+68 a^2 c d+52 b^2 c d+52 a b d^2\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticF}\left[\right.\right.\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right) -$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\left.\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\right/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)+$$

$$2\left(-3 b^2 c^2-38 a b c d-3 a^2 d^2-16 b^2 d^2\right)\left(\frac{\mathrm{Cos}[e+f x]\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2(-b c+a d)}{(a-b)(c+d)}\right]\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\Bigg/\left(b d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f x]}{a+b}}\,\sqrt{\frac{(a+b)(c+d\,\mathrm{Sin}[e+f x])}{(c+d)(a+b\,\mathrm{Sin}[e+f x])}}\right)-$$

$$\frac{1}{b d}\,2\,(-b c+a d)\left(\left(\left((a+b) c+a d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\,\frac{2(-b c+a d)}{(a+b)(-c+d)}\right]\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)-$$

$$\left((b c+a d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\,\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)\right)\right)+$$

$$\frac{1}{f}\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\left(-\frac{7}{12}(b c+a d)\,\mathrm{Cos}[e+f x]-\frac{1}{6}\,b\,d\,\mathrm{Sin}[2\,(e+f x)]\right)$$

Problem 773: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sin}[e+f x])^{3/2}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\,dx$$

Optimal (type 4, 740 leaves, 7 steps):

$$\frac{1}{4\,d\,(b\,c-a\,d)\,f}\sqrt{a+b}\,(c-d)\,\sqrt{c+d}\,(b\,c+5\,a\,d)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+\frac{1}{4\,b\,\sqrt{a+b}\,d^2\,f}\sqrt{c+d}\,\left(6\,a\,b\,c\,d+3\,a^2\,d^2-b^2\,(c^2-4\,d^2)\right)\,\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-\frac{b\,(b\,c+5\,a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{4\,d\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,f}+\frac{1}{4\,b\,d\,\sqrt{c+d}\,f}(a+b)^{3/2}\,(3\,a\,d+b\,(c+2\,d))\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\text{Sec}[e+f\,x]\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 1849 leaves):

$$-\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,f}+\frac{1}{8\,f}\left(-\left(\left(4\,(-b\,c+a\,d)\,(8\,a^2\,c+3\,b^2\,c+7\,a\,b\,d)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\Bigg)-$$

$$4\,(-b c+a d)\,\left(12\,a\,b\,c+8\,a^2\,d+4\,b^2\,d\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticF}\Big[\right.\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\ \mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticPi}\Big[\frac{-b c+a d}{(a+b)\,d},\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\ \mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\Big]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(-b^2\,c-5\,a\,b\,d\right)\,\left(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,\left(a+b\right)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,\left(-b\,c+a\,d\right)}{\left(a-b\right)\,\left(c+d\right)}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{\left(a+b\right)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\,\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\,\,\sqrt{\frac{\left(a+b\right)\,\left(c+d\,\text{Sin}[e+f\,x]\right)}{\left(c+d\right)\,\left(a+b\,\text{Sin}[e+f\,x]\right)}}\right)-$$

$$\frac{1}{b\,d}\,2\,\left(-b\,c+a\,d\right)\,\left(\left(\left(\left(a+b\right)\,c+a\,d\right)\,\sqrt{\frac{\left(c+d\right)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\,\text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,\left(-b\,c+a\,d\right)}{\left(a+b\right)\,\left(-c+d\right)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{\left(c+d\right)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\left(a+b\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 774: Humongous result has more than 200000 leaves.

$$\int\frac{(a+b\,\mathrm{Sin}[e+f\,x])^{3/2}}{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 644 leaves, 6 steps):

$$-\frac{b\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}-\frac{1}{d\,(b\,c-a\,d)\,f}$$

$$(a-b)\,b\,\sqrt{a+b}\,\sqrt{c+d}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])+\frac{1}{d^2\,\sqrt{c+d}\,f}$$

$$\sqrt{a+b}\,(b\,(c-d)-2\,a\,d)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])-\frac{1}{d^2\,\sqrt{c+d}\,f}$$

$$\sqrt{a+b}\,(b\,c-3\,a\,d)\,\text{EllipticPi}\left[\frac{(a+b)\,d}{b\,(c+d)},\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type ?, 222 963 leaves) : Display of huge result suppressed!

Problem 775: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{Sin}[e+f\,x])^{3/2}}{(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 600 leaves, 5 steps) :

$$\Bigg(2\,(a-b)\,\sqrt{a+b}\;\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\ \frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\;(c+d\,\text{Sin}[e+f\,x])\Bigg)\Bigg/\Big((c-d)\,d\,\sqrt{c+d}\;f\Big)\,-$$

$$\Bigg(2\,\sqrt{a+b}\;(b\,(c-2\,d)+a\,d)\;\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\ \frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\;\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$(c+d\,\text{Sin}[e+f\,x])\Bigg)\Bigg/\Big((c-d)\,d^2\,\sqrt{c+d}\;f\Big)+\frac{1}{d^2\,\sqrt{c+d}\;f}$$

$$2\,b\,\sqrt{a+b}\;\text{EllipticPi}\Big[\frac{(a+b)\,d}{b\,(c+d)},\ \text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\ \frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\;(c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 1866 leaves):

$$-\frac{2\,(b\,c\,\text{Cos}[e+f\,x]-a\,d\,\text{Cos}[e+f\,x])\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{(c^2-d^2)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\frac{1}{(c-d)\,(c+d)\,f}\Bigg(-\Bigg(\Bigg(4\,(-b\,c+a\,d)\,(a^2\,c-a\,b\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2}{-c+d}}$$

$$\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f\,x\Big)\Big]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)\right)-$$

$$4\,(-b c+a d)\,\left(a^2 d-b^2 d\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \mathrm{EllipticPi}\Big[\frac{-b c+a d}{(a+b)\,d},\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(b^2\,c-a\,b\,d\right)\left(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\left/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}\right.\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg)\Bigg)\Bigg)$$

Problem 776: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\mathrm{Sin}[e+f\,x])^{3/2}}{(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 497 leaves, 4 steps):

$$-\frac{2\,(b\,c-a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{3\,(c^2-d^2)\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}-$$

$$\left(8\,(a-b)\,\sqrt{a+b}\,(a\,c-b\,d)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)\,f\right)+$$

$$\left(2\,(a-b)\,\sqrt{a+b}\,(a\,(3\,c+d)-b\,(c+3\,d))\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\right.\right.$$

$$\left.\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 1982 leaves):

$$\frac{1}{f}\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}$$

$$\left(-\frac{2\,(b\,c\,\text{Cos}[e+f\,x]-a\,d\,\text{Cos}[e+f\,x])}{3\,(c^2-d^2)\,(c+d\,\text{Sin}[e+f\,x])^2}-\frac{8\,(-a\,c\,d\,\text{Cos}[e+f\,x]+b\,d^2\,\text{Cos}[e+f\,x])}{3\,(c^2-d^2)^2\,(c+d\,\text{Sin}[e+f\,x])}\right)+$$

$$\frac{1}{3\,(c-d)^2\,(c+d)^2\,f}$$

$$\left(-\left(\left(4\,(-b\,c+a\,d)\,(3\,a^2\,c^2+b^2\,c^2-4\,a\,b\,c\,d+a^2\,d^2-b^2\,d^2)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(4\,a\,b\,c^2+4\,a^2\,c\,d-4\,b^2\,c\,d-4\,a\,b\,d^2\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.$$

$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[$$

$$e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2 (a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(-4\,a\,b\,c\,d+4\,b^2\,d^2\right)\left(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg)\Bigg)\Bigg)$$

Problem 779: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sin}[e+f\,x])^{5/2}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,dx$$

Optimal (type 4, 894 leaves, 8 steps):

$$\frac{1}{24 d^2 (b c - a d) f}\sqrt{a+b}\,(c-d)\sqrt{c+d}\,\left(14 a b c d + 33 a^2 d^2 - b^2 \left(3 c^2 - 16 d^2\right)\right)$$
$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right],\frac{(a-b)(c+d)}{(a+b)(c-d)}\right]\text{Sec}[e+f x]$$
$$\sqrt{-\frac{(b c-a d)(1-\text{Sin}[e+f x])}{(c+d)(a+b\,\text{Sin}[e+f x])}}\sqrt{\frac{(b c-a d)(1+\text{Sin}[e+f x])}{(c-d)(a+b\,\text{Sin}[e+f x])}}\,(a+b\,\text{Sin}[e+f x])+$$
$$\frac{1}{8 b\sqrt{a+b}\,d^3 f}\sqrt{c+d}\,\left(15 a^2 b c d^2 + 5 a^3 d^3 - 5 a b^2 d \left(c^2 - 4 d^2\right) + b^3 \left(c^3 + 4 c d^2\right)\right)$$
$$\text{EllipticPi}\left[\frac{b (c+d)}{(a+b) d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right],\frac{(a-b)(c+d)}{(a+b)(c-d)}\right]\text{Sec}[e+f x]$$
$$\sqrt{-\frac{(b c-a d)(1-\text{Sin}[e+f x])}{(c+d)(a+b\,\text{Sin}[e+f x])}}\sqrt{\frac{(b c-a d)(1+\text{Sin}[e+f x])}{(c-d)(a+b\,\text{Sin}[e+f x])}}\,(a+b\,\text{Sin}[e+f x])-$$
$$\left(b\left(14 a b c d + 33 a^2 d^2 - b^2\left(3 c^2 - 16 d^2\right)\right)\text{Cos}[e+f x]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Big/$$
$$\left(24 d^2 f\sqrt{a+b\,\text{Sin}[e+f x]}\right)+$$
$$\frac{b (3 b c - 13 a d)\,\text{Cos}[e+f x]\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}}{12 d f}+$$
$$\frac{1}{24 b d^2\sqrt{c+d}\,f}(a+b)^{3/2}\left(15 a^2 d^2 + 6 a b d (2 c + 3 d) - b^2\left(3 c^2 - 2 c d - 16 d^2\right)\right)$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f x]}}\right],\frac{(a+b)(c-d)}{(a-b)(c+d)}\right]\text{Sec}[e+f x]$$
$$\sqrt{\frac{(b c-a d)(1-\text{Sin}[e+f x])}{(a+b)(c+d\,\text{Sin}[e+f x])}}\sqrt{-\frac{(b c-a d)(1+\text{Sin}[e+f x])}{(a-b)(c+d\,\text{Sin}[e+f x])}}\,(c+d\,\text{Sin}[e+f x])-$$
$$\frac{b^2\,\text{Cos}[e+f x]\sqrt{a+b\,\text{Sin}[e+f x]}\,(c+d\,\text{Sin}[e+f x])^{3/2}}{3 d f}$$

Result (type 4, 1949 leaves) :

$$\frac{1}{48 d f}\left(-\left(\left(4 (-b c + a d)\right.\right.\right.$$
$$\left(-b^3 c^2 + 48 a^3 c d + 58 a b^2 c d + 59 a^2 b d^2 + 16 b^3 d^2\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2(-b c+a d)}{(a+b)(-c+d)}\right]$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$4\,(-b c+a d)\,\left(-4 a b^2 c^2+92 a^2 b c d+28 b^3 c d+48 a^3 d^2+76 a b^2 d^2\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Bigg]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\Bigg]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left(\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(3\,b^3\,c^2-14\,a\,b^2\,c\,d-33\,a^2\,b\,d^2-16\,b^3\,d^2\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Bigg)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/\right.$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)+\frac{1}{f}$$

$$\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\,\left(-\frac{b\,(b\,c+13\,a\,d)\,\mathrm{Cos}[e+f\,x]}{12\,d}-\right.$$

$$\left.\frac{1}{6}\,b^2\,\mathrm{Sin}[2\,(e+f\,x)]\right)$$

Problem 780: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}}{\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 745 leaves, 7 steps):

$$-\frac{1}{4 d^2 (b c-a d) f} 3 b \sqrt{a+b} (c-d) \sqrt{c+d} (b c-3 a d)$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b} \sqrt{c+d \text{Sin}[e+f x]}}{\sqrt{c+d} \sqrt{a+b \text{Sin}[e+f x]}}\right], \frac{(a-b) (c+d)}{(a+b) (c-d)}\right] \text{Sec}[e+f x]$$

$$\sqrt{-\frac{(b c-a d) (1-\text{Sin}[e+f x])}{(c+d) (a+b \text{Sin}[e+f x])}} \sqrt{\frac{(b c-a d) (1+\text{Sin}[e+f x])}{(c-d) (a+b \text{Sin}[e+f x])}} (a+b \text{Sin}[e+f x])-$$

$$\frac{1}{4 \sqrt{a+b} d^3 f} \sqrt{c+d} \left(10 a b c d-15 a^2 d^2-b^2 \left(3 c^2+4 d^2\right)\right)$$

$$\text{EllipticPi}\left[\frac{b (c+d)}{(a+b) d}, \text{ArcSin}\left[\frac{\sqrt{a+b} \sqrt{c+d \text{Sin}[e+f x]}}{\sqrt{c+d} \sqrt{a+b \text{Sin}[e+f x]}}\right], \frac{(a-b) (c+d)}{(a+b) (c-d)}\right] \text{Sec}[e+f x]$$

$$\sqrt{-\frac{(b c-a d) (1-\text{Sin}[e+f x])}{(c+d) (a+b \text{Sin}[e+f x])}} \sqrt{\frac{(b c-a d) (1+\text{Sin}[e+f x])}{(c-d) (a+b \text{Sin}[e+f x])}} (a+b \text{Sin}[e+f x])+$$

$$\frac{3 b^2 (b c-3 a d) \text{Cos}[e+f x] \sqrt{c+d \text{Sin}[e+f x]}}{4 d^2 f \sqrt{a+b \text{Sin}[e+f x]}}-$$

$$\frac{b^2 \text{Cos}[e+f x] \sqrt{a+b \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}{2 d f}-\frac{1}{4 d^2 \sqrt{c+d} f}$$

$$(a+b)^{3/2} (3 b c-7 a d-2 b d) \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \text{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \text{Sin}[e+f x]}}\right], \frac{(a+b) (c-d)}{(a-b) (c+d)}\right]$$

$$\text{Sec}[e+f x] \sqrt{\frac{(b c-a d) (1-\text{Sin}[e+f x])}{(a+b) (c+d \text{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d) (1+\text{Sin}[e+f x])}{(a-b) (c+d \text{Sin}[e+f x])}} (c+d \text{Sin}[e+f x])$$

Result (type 4, 1864 leaves):

$$-\frac{b^2 \text{Cos}[e+f x] \sqrt{a+b \text{Sin}[e+f x]} \sqrt{c+d \text{Sin}[e+f x]}}{2 d f}+$$

$$\frac{1}{8 d f} \left(-\left(\left(4 (-b c+a d) \left(-b^3 c+8 a^3 d+11 a b^2 d\right) \sqrt{\frac{(c+d) \text{Cot}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \text{Csc}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2 (-b c+a d)}{(a+b) (-c+d)}\right]$$

$$\text{Sec}[e+f x] \text{Sin}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \text{Csc}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(-4\,a\,b^2\,c+24\,a^2\,b\,d+4\,b^3\,d\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\Big[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left(\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(3\,b^3\,c-9\,a\,b^2\,d\right)\,\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Bigg)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\,\left(\left(\left((a+b)\,c+a\,d\right)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}}{-c+d}}\ \mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{4}\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 781: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}}{(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 780 leaves, 7 steps):

$$-\left(\left(\sqrt{a+b}\ \left(4\,a\,b\,c\,d-2\,a^2\,d^2-b^2\,\left(3\,c^2-d^2\right)\right)\right.\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\ \sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a-b)\ (c+d)}{(a+b)\ (c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\ (1-\text{Sin}[e+f\,x])}{(c+d)\ (a+b\,\text{Sin}[e+f\,x])}}\ \sqrt{\frac{(b\,c-a\,d)\ (1+\text{Sin}[e+f\,x])}{(c-d)\ (a+b\,\text{Sin}[e+f\,x])}}\ (a+b\,\text{Sin}[e+f\,x])\right)\Big/$$

$$\left.\left(d^2\,\sqrt{c+d}\ (b\,c-a\,d)\ f\right)\right)-\frac{1}{\sqrt{a+b}\ d^3\,f}b\,\sqrt{c+d}\ (3\,b\,c-5\,a\,d)$$

$$\text{EllipticPi}\left[\frac{b\ (c+d)}{(a+b)\ d},\ \text{ArcSin}\left[\frac{\sqrt{a+b}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\ \sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a-b)\ (c+d)}{(a+b)\ (c-d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{-\frac{(b\,c-a\,d)\ (1-\text{Sin}[e+f\,x])}{(c+d)\ (a+b\,\text{Sin}[e+f\,x])}}$$

$$\sqrt{\frac{(b\,c-a\,d)\ (1+\text{Sin}[e+f\,x])}{(c-d)\ (a+b\,\text{Sin}[e+f\,x])}}\ (a+b\,\text{Sin}[e+f\,x])+$$

$$\frac{2\,(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{d\,\left(c^2-d^2\right)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}+$$

$$\frac{b\,\left(4\,a\,b\,c\,d-2\,a^2\,d^2-b^2\,\left(3\,c^2-d^2\right)\right)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d^2\,\left(c^2-d^2\right)\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-$$

$$\frac{1}{d^2\,(c+d)^{3/2}\,f}$$

$$(a+b)^{3/2}\,(2\,a\,d-b\,(3\,c+d))$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\ \sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a+b)\ (c-d)}{(a-b)\ (c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{\frac{(b\,c-a\,d)\ (1-\text{Sin}[e+f\,x])}{(a+b)\ (c+d\,\text{Sin}[e+f\,x])}}\ \sqrt{-\frac{(b\,c-a\,d)\ (1+\text{Sin}[e+f\,x])}{(a-b)\ (c+d\,\text{Sin}[e+f\,x])}}\ (c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 1976 leaves) :

$$-\left(\left(2\,\left(b^2\,c^2\,\text{Cos}[e+f\,x]-2\,a\,b\,c\,d\,\text{Cos}[e+f\,x]+a^2\,d^2\,\text{Cos}[e+f\,x]\right)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\right)\Big/\right.$$

$$\left.\left(d\,\left(-c^2+d^2\right)\,f\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)-\frac{1}{2\,(c-d)\,d\,(c+d)\,f}$$

$$\left(-\left(\left(4\left(-b c+a d\right)\left(-b^3 c^2-2 a^3 c d-2 a b^2 c d+4 a^2 b d^2+b^3 d^2\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\left(-b c+a d\right)}{(a+b)\left(-c+d\right)}\right]$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left.\left(\left(a+b\right)\left(c+d\right)\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$4\left(-b c+a d\right)\left(-4 a b^2 c^2+2 a^2 b c d-2 b^3 c d-2 a^3 d^2+6 a b^2 d^2\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\,\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\left(-b c+a d\right)}{(a+b)\left(-c+d\right)}\Big]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left(\left(a+b\right)\left(c+d\right)\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f x]}\ \sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)+$$

$$2\,\left(3 b^3 c^2-4 a b^2 c d+2 a^2 b d^2-b^3 d^2\right)\left(\frac{\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\ (a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b c+a d)}{(a-b)\,(c+d)}\right]\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{a+b\,\text{Sin}[e+f x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f x]}\ \sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}\ \sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}\right)-$$

$$
\begin{aligned}
&\frac{1}{b\,d}\,2\left(-b\,c+a\,d\right)\left(\left(\left(\left(a+b\right)c+a\,d\right)\sqrt{\frac{\left(c+d\right)\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}}{-c+d}}\;\mathrm{EllipticF}\Big[\right.\right.\\
&\quad\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(c+d\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\left(-b\,c+a\,d\right)}{\left(a+b\right)\left(-c+d\right)}\Big]\;\mathrm{Sec}[e+f\,x]\\
&\quad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{4}\sqrt{\frac{\left(c+d\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(a+b\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}\\
&\quad\left.\sqrt{\left(-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(c+d\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}\right)}\right)\Big/\\
&\quad\left(\left(a+b\right)\left(c+d\right)\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\;\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-\\
&\quad\left(\left(b\,c+a\,d\right)\sqrt{\frac{\left(c+d\right)\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{\left(a+b\right)d},\;\mathrm{ArcSin}\Big[\right.\\
&\quad\left.\frac{\sqrt{-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(c+d\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\left(-b\,c+a\,d\right)}{\left(a+b\right)\left(-c+d\right)}\Big]\;\mathrm{Sec}[e+f\,x]\\
&\quad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{4}\sqrt{\frac{\left(c+d\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(a+b\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}\\
&\quad\left.\sqrt{\left(-\frac{\left(a+b\right)\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^{2}\left(c+d\,\mathrm{Sin}[e+f\,x]\right)}{-b\,c+a\,d}\right)}\right)\Big/\\
&\quad\left.\left.\left(\left(a+b\right)d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\;\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)
\end{aligned}
$$

Problem 782: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + b \operatorname{Sin}[e + f x])^{5/2}}{(c + d \operatorname{Sin}[e + f x])^{5/2}} \, dx$$

Optimal (type 4, 737 leaves, 6 steps):

$$\frac{2 (b c - a d)^2 \operatorname{Cos}[e + f x] \sqrt{a + b \operatorname{Sin}[e + f x]}}{3 d (c^2 - d^2) f (c + d \operatorname{Sin}[e + f x])^{3/2}} + \left(2 (a - b) \sqrt{a + b} \left(3 b c^2 + 4 a c d - 7 b d^2\right) \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c + d} \sqrt{a + b \operatorname{Sin}[e + f x]}}{\sqrt{a + b} \sqrt{c + d \operatorname{Sin}[e + f x]}}\right], \frac{(a + b) (c - d)}{(a - b) (c + d)}\right] \operatorname{Sec}[e + f x] \sqrt{\frac{(b c - a d) (1 - \operatorname{Sin}[e + f x])}{(a + b) (c + d \operatorname{Sin}[e + f x])}} \sqrt{-\frac{(b c - a d) (1 + \operatorname{Sin}[e + f x])}{(a - b) (c + d \operatorname{Sin}[e + f x])}} (c + d \operatorname{Sin}[e + f x])\right) \Big/ \left(3 (c - d)^2 d^2 (c + d)^{3/2} f\right) - \left(2 \sqrt{a + b} \left(a^2 d^2 (3 c + d) + a b d \left(3 c^2 - 4 c d - 7 d^2\right) + b^2 \left(3 c^3 - 6 c^2 d - 2 c d^2 + 9 d^3\right)\right) \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c + d} \sqrt{a + b \operatorname{Sin}[e + f x]}}{\sqrt{a + b} \sqrt{c + d \operatorname{Sin}[e + f x]}}\right], \frac{(a + b) (c - d)}{(a - b) (c + d)}\right] \operatorname{Sec}[e + f x] \sqrt{\frac{(b c - a d) (1 - \operatorname{Sin}[e + f x])}{(a + b) (c + d \operatorname{Sin}[e + f x])}} \sqrt{-\frac{(b c - a d) (1 + \operatorname{Sin}[e + f x])}{(a - b) (c + d \operatorname{Sin}[e + f x])}} (c + d \operatorname{Sin}[e + f x])\right) \Big/ \left(3 (c - d)^2 d^3 (c + d)^{3/2} f\right) + \frac{1}{d^3 \sqrt{c + d} f} 2 b^2 \sqrt{a + b} \operatorname{EllipticPi}\left[\frac{(a + b) d}{b (c + d)}, \operatorname{ArcSin}\left[\frac{\sqrt{c + d} \sqrt{a + b \operatorname{Sin}[e + f x]}}{\sqrt{a + b} \sqrt{c + d \operatorname{Sin}[e + f x]}}\right], \frac{(a + b) (c - d)}{(a - b) (c + d)}\right] \operatorname{Sec}[e + f x] \sqrt{\frac{(b c - a d) (1 - \operatorname{Sin}[e + f x])}{(a + b) (c + d \operatorname{Sin}[e + f x])}} \sqrt{-\frac{(b c - a d) (1 + \operatorname{Sin}[e + f x])}{(a - b) (c + d \operatorname{Sin}[e + f x])}} (c + d \operatorname{Sin}[e + f x])$$

Result (type 4, 2139 leaves):

$$\frac{1}{f} \sqrt{a + b \operatorname{Sin}[e + f x]} \sqrt{c + d \operatorname{Sin}[e + f x]} \left(-\frac{2 \left(b^2 c^2 \operatorname{Cos}[e + f x] - 2 a b c d \operatorname{Cos}[e + f x] + a^2 d^2 \operatorname{Cos}[e + f x]\right)}{3 d \left(-c^2 + d^2\right) (c + d \operatorname{Sin}[e + f x])^2} - \right.$$
$$\left(2 \left(3 b^2 c^3 \operatorname{Cos}[e + f x] + a b c^2 d \operatorname{Cos}[e + f x] - 4 a^2 c d^2 \operatorname{Cos}[e + f x] - 7 b^2 c d^2 \operatorname{Cos}[e + f x] + \right.\right.$$

$$7\,a\,b\,d^3\,\text{Cos}[e+f\,x]\Big)\Big)\Big/\Big(3\,d\,\left(-c^2+d^2\right)^2\,(c+d\,\text{Sin}[e+f\,x])\Big)\Bigg)+\frac{1}{3\,(c-d)^2\,d\,(c+d)^2\,f}$$

$$\Bigg(-\Bigg(\Bigg(4\,(-b\,c+a\,d)\,\left(-b^3\,c^3+3\,a^3\,c^2\,d+2\,a\,b^2\,c^2\,d-8\,a^2\,b\,c\,d^2+b^3\,c\,d^2+a^3\,d^3+2\,a\,b^2\,d^3\right)$$

$$\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)-$$

$$4\,(-b\,c+a\,d)\,\left(-4\,a\,b^2\,c^3+3\,a^2\,b\,c^2\,d+b^3\,c^2\,d+4\,a^3\,c\,d^2-7\,a^2\,b\,d^3+3\,b^3\,d^3\right)$$

$$\Bigg(\Bigg(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\Bigg(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},$$

$$\text{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)\Bigg)+$$

$$2\,\left(3\,b^3\,c^3+a\,b^2\,c^2\,d-4\,a^2\,b\,c\,d^2-7\,b^3\,c\,d^2+7\,a\,b^2\,d^3\right)\,\Bigg(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+$$

$$\Bigg(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\Big],$$

$$\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\Big]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\Bigg)\Bigg/\Bigg(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}$$

$$\sqrt{a+b\,\text{Sin}[e+f\,x]}\ \sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\ \sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\ \Bigg) -$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\,\Bigg(\Bigg(\Bigg(((a+b)\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticF}\Big[$$

$$\text{ArcSin}\Bigg[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\ \text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\ \Bigg)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\right) -$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\ \text{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\ \text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\ \Bigg)\Big/$$

$$\left((a+b)\, d\, \sqrt{a+b\,\text{Sin}[e+f\,x]}\, \sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)\Bigg)\Bigg)$$

Problem 783: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^{5/2}}{\sqrt{a+b\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 772 leaves, 7 steps):

$$\frac{1}{4\,b^2\,(b\,c-a\,d)\,f}3\,\sqrt{a+b}\,(c-d)\,d\,\sqrt{c+d}\,(3\,b\,c-a\,d)$$
$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$
$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-$$
$$\frac{1}{4\,b^3\,\sqrt{a+b}\,f}\sqrt{c+d}\,\left(10\,a\,b\,c\,d-3\,a^2\,d^2-b^2\,(15\,c^2+4\,d^2)\right)$$
$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$
$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-$$
$$\frac{3\,d\,(3\,b\,c-a\,d)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{4\,b\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-$$
$$\frac{d^2\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,b\,f}+\frac{1}{4\,b^3\,\sqrt{c+d}\,f}$$
$$\sqrt{a+b}\,\left(3\,a^2\,d^2-a\,b\,d\,(7\,c+3\,d)+b^2\,(8\,c^2+9\,c\,d+2\,d^2)\right)$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]$$
$$\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 1864 leaves):

$$-\frac{d^2\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{2\,b\,f}+$$

$$\frac{1}{8\,b\,f}\left(-\left(\left(4\,(-b\,c+a\,d)\,\left(8\,b\,c^3+11\,b\,c\,d^2-a\,d^3\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\mathrm{Sec}[e+f\,x]\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Bigg/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(24\,b\,c^2\,d-4\,a\,c\,d^2+4\,b\,d^3\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\left.\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(-9\,b\,c\,d^2+3\,a\,d^3\right)\,\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$
\begin{aligned}
&\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\,\Bigg(\Bigg(\Bigg(\big((a+b)\,c+a\,d\big)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\Big[\\
&\quad\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]\\
&\quad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\\
&\quad\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/\\
&\quad\Big((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Big)-\\
&\quad\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[\\
&\quad\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]\\
&\quad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\\
&\quad\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/\\
&\quad\Big((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\Big)\Bigg)\Bigg)
\end{aligned}
$$

Problem 784: Humongous result has more than 200000 leaves.

$$\int \frac{(c+d\,\text{Sin}[e+f\,x])^{3/2}}{\sqrt{a+b\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 644 leaves, 6 steps):

$$\frac{1}{b\,(b\,c-a\,d)\,f}\sqrt{a+b}\,(c-d)\,d\,\sqrt{c+d}\;\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\Big],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\Big]\,\text{Sec}[e+f\,x]\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+\frac{1}{b^2\,\sqrt{a+b}\,f}\sqrt{c+d}\,(3\,b\,c-a\,d)\;\text{EllipticPi}\Big[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\Big[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\Big],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\Big]\,\text{Sec}[e+f\,x]\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])-\frac{d\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-\frac{1}{b^2\,\sqrt{c+d}\,f}\sqrt{a+b}\,(a\,d-b\,(2\,c+d))\;\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]\,\text{Sec}[e+f\,x]\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type ?, 222 963 leaves): Display of huge result suppressed!

Problem 785: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{a+b\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 198 leaves, 1 step):

$$\frac{1}{b\,\sqrt{c+d}\,f}2\,\sqrt{a+b}\;\text{EllipticPi}\Big[\frac{(a+b)\,d}{b\,(c+d)},\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]\,\text{Sec}[e+f\,x]\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])$$

Result (type 4, 578 leaves):

$$-\frac{1}{f}4\left(b c-a d\right)\left(\left(\sqrt{\frac{\left(a+b\right)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}}{-a+b}}\;\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}(a+b\,\text{Sin}[e+f x])}{b c-a d}}}{\sqrt{2}}\right],\frac{2\left(b c-a d\right)}{\left(-a+b\right)\left(c+d\right)}\right]\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{4}\sqrt{-\frac{\left(c+d\right)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}\left(a+b\,\text{Sin}[e+f x]\right)}{b c-a d}}\sqrt{\frac{\left(a+b\right)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}\left(c+d\,\text{Sin}[e+f x]\right)}{b c-a d}}\right)\Bigg/\left(\left(a+b\right)\sqrt{a+b\,\text{Sin}[e+f x]}\;\sqrt{c+d\,\text{Sin}[e+f x]}\right)-\left(d\sqrt{\frac{\left(a+b\right)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}}{-a+b}}\;\text{EllipticPi}\left[\frac{b c-a d}{b\left(c+d\right)},\text{ArcSin}\left[\frac{\sqrt{-\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}(a+b\,\text{Sin}[e+f x])}{b c-a d}}}{\sqrt{2}}\right],\frac{2\left(b c-a d\right)}{\left(-a+b\right)\left(c+d\right)}\right]\,\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{4}\sqrt{-\frac{\left(c+d\right)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}\left(a+b\,\text{Sin}[e+f x]\right)}{b c-a d}}\sqrt{\frac{\left(a+b\right)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^{2}\left(c+d\,\text{Sin}[e+f x]\right)}{b c-a d}}\right)\Bigg/\left(b\left(c+d\right)\sqrt{a+b\,\text{Sin}[e+f x]}\;\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)$$

Problem 787: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 405 leaves, 3 steps):

$$\left(2\,(a-b)\,\sqrt{a+b}\,d\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$
$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$
$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((c-d)\,\sqrt{c+d}\,(b\,c-a\,d)^2\,f\right)+$$
$$\left(2\,\sqrt{a+b}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$
$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$
$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((c-d)\,\sqrt{c+d}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 90 261 leaves): Display of huge result suppressed!

Problem 788: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\left(c+d\,\text{Sin}[e+f\,x]\right)^{5/2}}\,dx$$

Optimal (type 4, 521 leaves, 4 steps):

$$-\frac{2\,d^2\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{3\,(b\,c-a\,d)\,(c^2-d^2)\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}-$$

$$\left(4\,(a-b)\,\sqrt{a+b}\,d\,\left(2\,a\,c\,d-b\,(3\,c^2-d^2)\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\right.\right.$$

$$\left.\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)^3\,f\right)-$$

$$\left(2\,\sqrt{a+b}\,\left(a\,d\,(3\,c+d)-b\,(3\,c^2+3\,c\,d-2\,d^2)\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\right.\right.$$

$$\left.\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left(3\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)^2\,f\right)$$

Result (type 4, 2072 leaves):

$$\frac{1}{f}\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\,\left(-\frac{2\,d^2\,\text{Cos}[e+f\,x]}{3\,(b\,c-a\,d)\,(c^2-d^2)\,(c+d\,\text{Sin}[e+f\,x])^2}+\right.$$

$$\left.\frac{4\,\left(-3\,b\,c^2\,d^2\,\text{Cos}[e+f\,x]+2\,a\,c\,d^3\,\text{Cos}[e+f\,x]+b\,d^4\,\text{Cos}[e+f\,x]\right)}{3\,(b\,c-a\,d)^2\,(c^2-d^2)^2\,(c+d\,\text{Sin}[e+f\,x])}\right)+$$

$$\frac{1}{3\,(c-d)^2\,(c+d)^2\,(b\,c-a\,d)^2\,f}$$

$$\left(-\left(\left(4\,(-b\,c+a\,d)\,\left(3\,b^2\,c^4-6\,a\,b\,c^3\,d+3\,a^2\,c^2\,d^2-5\,b^2\,c^2\,d^2+2\,a\,b\,c\,d^3+a^2\,d^4+2\,b^2\,d^4\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$4\,(-b c+a d)\,\left(-6 b^2 c^3 d-2 a b c^2 d^2+4 a^2 c d^3+2 b^2 c d^3+2 a b d^4\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\;\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\;\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(6\,b^2\,c^2\,d^2-4\,a\,b\,c\,d^3-2\,b^2\,d^4\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$
$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$
$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\text{ArcSin}\Big[$$
$$\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f\,x]$$
$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$
$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$
$$\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)\Bigg)\Bigg)$$

Problem 789: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{5/2}}{(a+b\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 822 leaves, 7 steps):

$$\left((c-d)\,\sqrt{c+d}\,\left(2\,b^2\,c^2-4\,a\,b\,c\,d+3\,a^2\,d^2-b^2\,d^2\right)\right.$$
$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$
$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])\right)\Big/$$
$$\left((a-b)\,b^2\,\sqrt{a+b}\,(b\,c-a\,d)\,f\right)+\frac{1}{b^3\,\sqrt{a+b}\,f}d\,\sqrt{c+d}\,(5\,b\,c-3\,a\,d)$$
$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$
$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+$$
$$\frac{2\,(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{b\,\left(a^2-b^2\right)\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+$$
$$\frac{\left(4\,a\,b\,c\,d-3\,a^2\,d^2-b^2\,\left(2\,c^2-d^2\right)\right)\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{b\,\left(a^2-b^2\right)\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}-$$
$$\left(\sqrt{a+b}\,\left(3\,a^2\,d^2-2\,a\,b\,d\,(c+3\,d)-b^2\,\left(2\,c^2-6\,c\,d-d^2\right)\right)\right.$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$
$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$
$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((a-b)\,b^3\,\sqrt{c+d}\,f\right)$$

Result (type 4, 1975 leaves):

$$-\left(\left(2\,\left(b^2\,c^2\,\text{Cos}[e+f\,x]-2\,a\,b\,c\,d\,\text{Cos}[e+f\,x]+a^2\,d^2\,\text{Cos}[e+f\,x]\right)\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\right.$$
$$\left.\left(b\,\left(-a^2+b^2\right)\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\right)\right)+\frac{1}{2\,(a-b)\,b\,(a+b)\,f}$$
$$\left(-\left(\left(\left(4\,(-b\,c+a\,d)\,\left(2\,a\,b\,c^3-4\,b^2\,c^2\,d+2\,a\,b\,c\,d^2+a^2\,d^3-b^2\,d^3\right)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\,\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.\right.$$

$$\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(2\,b^2\,c^3-2\,a\,b\,c^2\,d+4\,a^2\,c\,d^2-6\,b^2\,c\,d^2+2\,a\,b\,d^3\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticF}\Big[\right.\right.$$

$$\text{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\Big[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\ \frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)+$$

$$2\,\left(-2 b^2 c^2 d+4 a b c d^2-3 a^2 d^3+b^2 d^3\right)\left(\frac{\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b c+a d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{a+b\,\text{Sin}[e+f x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}\right)-$$

$$\frac{1}{b d}\,2\,(-b c+a d)\left(\left(\left((a+b)\,c+a d\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\ \text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\ \text{ArcSin}\left[\right.\right.\right.$$

$$\left.\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\right)\Big/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 790: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\text{Sin}[e+f\,x])^{3/2}}{(a+b\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 600 leaves, 5 steps):

$$\left(2\,(c-d)\,\sqrt{c+d}\ \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]\right.$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])\right)\Big/$$

$$\left((a-b)\,b\,\sqrt{a+b}\,f\right)+\frac{1}{b^2\,\sqrt{a+b}\,f}2\,d\,\sqrt{c+d}\ \text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+$$

$$\left(2\,\sqrt{a+b}\,(b\,(c-2\,d)+a\,d)\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\ \frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((a-b)\,b^2\,\sqrt{c+d}\,f\right)$$

Result (type 4, 1866 leaves):

$$-\frac{2\,(-b\,c\,\text{Cos}[e+f\,x]+a\,d\,\text{Cos}[e+f\,x])\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(a^2-b^2)\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+$$

$$\frac{1}{(a-b)\,(a+b)\,f}\left(-\left(\left(\left(4\,(-b\,c+a\,d)\,(a\,c^2-b\,c\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(b\,c^2-b\,d^2\right)\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\Big[\right.\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\right.$$

$$\mathrm{ArcSin}\Big[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(-b\,c\,d+a\,d^2\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\text{ArcSin}\left[\right.\right.$$

$$\left.\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\left.\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 792: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\text{Sin}[e+f\,x])^{3/2}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 405 leaves, 3 steps):

$$\left(2\,b\,(c-d)\,\sqrt{c+d}\;\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\,\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\right.$$

$$\text{Sec}[e+f\,x]\,\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}$$

$$\left.(a+b\,\text{Sin}[e+f\,x])\right)\Big/\left((a-b)\,\sqrt{a+b}\,(b\,c-a\,d)^2\,f\right)+$$

$$\left(2\,\sqrt{a+b}\;\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\,\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\right.$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\Big/\left((a-b)\,\sqrt{c+d}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 90 261 leaves): Display of huge result suppressed!

Problem 793: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\text{Sin}[e+f\,x])^{3/2}\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 495 leaves, 4 steps):

$$\frac{2 b^2 \operatorname{Cos}[e+f x]}{(a^2-b^2)(b c-a d) f \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}}-$$

$$\left(2\left(a^2 d^2+b^2\left(c^2-2 d^2\right)\right) \operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \operatorname{Sin}[e+f x]}}\right], \frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x] \sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}} (c+d \operatorname{Sin}[e+f x])\right) \Big/ \left(\sqrt{a+b}\,(c-d) \sqrt{c+d}\,(b c-a d)^3 f\right)+$$

$$\left(2(b(c-2 d)-a d) \operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \operatorname{Sin}[e+f x]}}\right], \frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x] \sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}} (c+d \operatorname{Sin}[e+f x])\right) \Big/ \left(\sqrt{a+b}\,(c-d) \sqrt{c+d}\,(b c-a d)^2 f\right)$$

Result (type 4, 2052 leaves):

$$\frac{1}{f}\sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]} \left(\frac{2 b^3 \operatorname{Cos}[e+f x]}{(a^2-b^2)(-b c+a d)^2 (a+b \operatorname{Sin}[e+f x])}+\frac{2 d^3 \operatorname{Cos}[e+f x]}{(b c-a d)^2 (c^2-d^2)(c+d \operatorname{Sin}[e+f x])}\right)+$$

$$\frac{1}{(a-b)(a+b)(c-d)(c+d)(-b c+a d)^2 f}$$

$$\left(-\frac{1}{(a+b)(c+d) \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}} 4(-b c+a d)\left(a b^2 c^3-2 a^2 b c^2 d+\right.\right.$$

$$\left.2 b^3 c^2 d+a^3 c d^2-2 a b^2 c d^2+2 a^2 b d^3-2 b^3 d^3\right) \sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2(-b c+a d)}{(a+b)(-c+d)}\right]$$

$$\operatorname{Sec}[e+f x] \operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \operatorname{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\;-$$

$$4\,(-b\,c+a\,d)\,\left(b^3\,c^3+a\,b^2\,c^2\,d+a^2\,b\,c\,d^2-2\,b^3\,c\,d^2+a^3\,d^3-2\,a\,b^2\,d^3\right)$$

$$\Bigg(\Bigg(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticF}\Bigg[$$

$$\text{ArcSin}\Bigg[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]\;\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\;-$$

$$\Bigg(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\Bigg[\frac{-b\,c+a\,d}{(a+b)\,d},$$

$$\text{ArcSin}\Bigg[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]\;\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\Bigg)\Bigg/$$

$$\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg)\;+$$

$$2\left(-b^3c^2d-a^2bd^3+2b^3d^3\right)\left(\frac{\text{Cos}[e+fx]\sqrt{c+d\,\text{Sin}[e+fx]}}{d\sqrt{a+b\,\text{Sin}[e+fx]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+fx]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2(-bc+ad)}{(a-b)(c+d)}\right]\sqrt{c+d\,\text{Sin}[e+fx]}\right)\Bigg/\left(b\,d\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}{a+b\,\text{Sin}[e+fx]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+fx]}\sqrt{\frac{a+b\,\text{Sin}[e+fx]}{a+b}}\sqrt{\frac{(a+b)(c+d\,\text{Sin}[e+fx])}{(c+d)(a+b\,\text{Sin}[e+fx])}}\right)-$$

$$\frac{1}{b\,d}2(-bc+ad)\left(\left(\left((a+b)c+ad\right)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}{-c+d}}\,\text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2(c+d\,\text{Sin}[e+fx])}{-bc+ad}}}{\sqrt{2}}\right],\frac{2(-bc+ad)}{(a+b)(-c+d)}\right]\text{Sec}[e+fx]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2(a+b\,\text{Sin}[e+fx])}{-bc+ad}}$$

$$\left.\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2(c+d\,\text{Sin}[e+fx])}{-bc+ad}\right)}\right)\Bigg/$$

$$\left((a+b)(c+d)\sqrt{a+b\,\text{Sin}[e+fx]}\sqrt{c+d\,\text{Sin}[e+fx]}\right)-$$

$$\left((bc+ad)\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-bc+ad}{(a+b)\,d},\text{ArcSin}\left[\right.\right.\right.$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\ \mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\right)\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 794: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\mathrm{Sin}[e+f\,x])^{3/2}\,(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 681 leaves, 5 steps):

$$\frac{2 b^2 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(b c-a d) f \sqrt{a+b \operatorname{Sin}[e+f x]}\,(c+d \operatorname{Sin}[e+f x])^{3/2}}+$$

$$\frac{2 d \left(a^2 d^2+b^2\left(3 c^2-4 d^2\right)\right) \operatorname{Cos}[e+f x] \sqrt{a+b \operatorname{Sin}[e+f x]}}{3\left(a^2-b^2\right)(b c-a d)^2\left(c^2-d^2\right) f (c+d \operatorname{Sin}[e+f x])^{3/2}}+$$

$$\Bigg(2\left(4 a^3 c d^3-4 a b^2 c d^3-a^2 b d^2\left(9 c^2-5 d^2\right)-b^3\left(3 c^4-15 c^2 d^2+8 d^4\right)\right)$$

$$\operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b}\,\sqrt{c+d \operatorname{Sin}[e+f x]}}\right],\frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x]$$

$$\sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}}\,\sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}}\,(c+d \operatorname{Sin}[e+f x])\Bigg)\Bigg/$$

$$\left(3 \sqrt{a+b}\,(c-d)^2 (c+d)^{3/2} (b c-a d)^4 f\right)+$$

$$\Bigg(2\left(a^2 d^2 (3 c+d)-6 a b d\left(c^2-d^2\right)+b^2\left(3 c^3-9 c^2 d-6 c d^2+8 d^3\right)\right)$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b}\,\sqrt{c+d \operatorname{Sin}[e+f x]}}\right],\frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x]$$

$$\sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}}\,\sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}}\,(c+d \operatorname{Sin}[e+f x])\Bigg)\Bigg/$$

$$\left(3 \sqrt{a+b}\,(c-d)^2 (c+d)^{3/2} (b c-a d)^3 f\right)$$

Result (type 4, 2320 leaves):

$$\frac{1}{f}\sqrt{a+b \operatorname{Sin}[e+f x]}\,\sqrt{c+d \operatorname{Sin}[e+f x]}$$

$$\Bigg(-\frac{2 b^4 \operatorname{Cos}[e+f x]}{\left(a^2-b^2\right)(-b c+a d)^3 (a+b \operatorname{Sin}[e+f x])}+\frac{2 d^3 \operatorname{Cos}[e+f x]}{3 (b c-a d)^2\left(c^2-d^2\right)(c+d \operatorname{Sin}[e+f x])^2}-$$

$$\left(2\left(-9 b c^2 d^3 \operatorname{Cos}[e+f x]+4 a c d^4 \operatorname{Cos}[e+f x]+5 b d^5 \operatorname{Cos}[e+f x]\right)\right)\Big/$$

$$\left(3 (b c-a d)^3\left(c^2-d^2\right)^2 (c+d \operatorname{Sin}[e+f x])\right)\Bigg)+$$

$$\frac{1}{3 (a-b)(a+b)(c-d)^2 (c+d)^2 (-b c+a d)^3 f}$$

$$\Bigg(-\frac{1}{(a+b)(c+d)\sqrt{a+b \operatorname{Sin}[e+f x]}\,\sqrt{c+d \operatorname{Sin}[e+f x]}} 4 (-b c+a d)$$

$$\left(-3 a b^3 c^5+9 a^2 b^2 c^4 d-9 b^4 c^4 d-9 a^3 b c^3 d^2+15 a b^3 c^3 d^2+3 a^4 c^2 d^3-20 a^2 b^2 c^2 d^3+17 b^4\right.$$

$$c^2 d^3 + 5 a^3 b c d^4 - 8 a b^3 c d^4 + a^4 d^5 + 7 a^2 b^2 d^5 - 8 b^4 d^5\Big) \sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2(-b c+a d)}{(a+b)(-c+d)}\right]$$

$$\operatorname{Sec}[e+f x] \operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \operatorname{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}} -$$

$$4(-b c+a d)\Big(-3 b^4 c^5 - 3 a b^3 c^4 d - 9 a^2 b^2 c^3 d^2 + 15 b^4 c^3 d^2 - 5 a^3 b c^2 d^3 + 11 a b^3 c^2 d^3 +$$

$$4 a^4 c d^4 + a^2 b^2 c d^4 - 8 b^4 c d^4 + 5 a^3 b d^5 - 8 a b^3 d^5\Big) \Bigg(\Bigg(\sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2(-b c+a d)}{(a+b)(-c+d)}\right] \operatorname{Sec}[$$

$$e+f x] \operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \operatorname{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}\Bigg) \Big/$$

$$\left((a+b)(c+d) \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}\right) -$$

$$\Bigg(\sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}} \operatorname{EllipticPi}\left[\frac{-b c+a d}{(a+b) d},\right.$$

$$\left.\operatorname{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \operatorname{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2(-b c+a d)}{(a+b)(-c+d)}\right] \operatorname{Sec}[e+f x]$$

$$\operatorname{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \operatorname{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \operatorname{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(3\,b^4\,c^4\,d+9\,a^2\,b^2\,c^2\,d^3-15\,b^4\,c^2\,d^3-4\,a^3\,b\,c\,d^4+4\,a\,b^3\,c\,d^4-5\,a^2\,b^2\,d^5+8\,b^4\,d^5\right)$$

$$\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Big/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Big[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\Big[$$

$$\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Big],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Big]\;\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 795: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 736 leaves, 6 steps):

$$\left(2\,(c-d)\,\sqrt{c+d}\,\left(4\,a\,b\,c+3\,a^2\,d-7\,b^2\,d\right)\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\left.\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])\right)\bigg/$$

$$\left(3\,(a-b)^2\,b^2\,(a+b)^{3/2}\,f\right)+\frac{1}{b^3\,\sqrt{a+b}\,f}2\,d^2\,\sqrt{c+d}$$

$$\text{EllipticPi}\left[\frac{b\,(c+d)}{(a+b)\,d},\text{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\,\text{Sec}[e+f\,x]$$

$$\sqrt{-\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\,\sqrt{\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(c-d)\,(a+b\,\text{Sin}[e+f\,x])}}\,(a+b\,\text{Sin}[e+f\,x])+$$

$$\frac{2\,(b\,c-a\,d)^2\,\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{3\,b\,\left(a^2-b^2\right)\,f\,(a+b\,\text{Sin}[e+f\,x])^{3/2}}+$$

$$\left(2\,\left(3\,a^2\,b\,(c-2\,d)\,d+3\,a^3\,d^2+a\,b^2\,\left(3\,c^2-4\,c\,d-2\,d^2\right)+b^3\,\left(c^2-7\,c\,d+9\,d^2\right)\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}$$

$$\left.(c+d\,\text{Sin}[e+f\,x])\right)\bigg/\left(3\,(a-b)^2\,b^3\,\sqrt{a+b}\,\sqrt{c+d}\,f\right)$$

Result (type 4, 2142 leaves):

$$\frac{1}{f}\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}$$

$$\left(-\frac{2\,\left(b^2\,c^2\,\text{Cos}[e+f\,x]-2\,a\,b\,c\,d\,\text{Cos}[e+f\,x]+a^2\,d^2\,\text{Cos}[e+f\,x]\right)}{3\,b\,\left(-a^2+b^2\right)\,(a+b\,\text{Sin}[e+f\,x])^2}-\right.$$

$$\left(2\,\left(-4\,a\,b^2\,c^2\,\text{Cos}[e+f\,x]+a^2\,b\,c\,d\,\text{Cos}[e+f\,x]+7\,b^3\,c\,d\,\text{Cos}[e+f\,x]+3\,a^3\,d^2\,\text{Cos}[e+f\,x]-\right.\right.$$

$$\left.\left.\left.7\,a\,b^2\,d^2\,\text{Cos}[e+f\,x]\right)\right)\bigg/\left(3\,b\,\left(-a^2+b^2\right)^2\,(a+b\,\text{Sin}[e+f\,x])\right)\right)-\frac{1}{3\,(a-b)^2\,b\,(a+b)^2\,f}$$

$$\left(-\left(\left(4\left(-b c+a d\right)\left(-3 a^2 b c^3-b^3 c^3+8 a b^2 c^2 d-2 a^2 b c d^2-2 b^3 c d^2+a^3 d^3-a b^2 d^3\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\left(-b c+a d\right)}{(a+b)\left(-c+d\right)}\right]$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left.\left((a+b)\,(c+d)\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)-$$

$$4\left(-b c+a d\right)\left(-4 a b^2 c^3-3 a^2 b c^2 d+7 b^3 c^2 d+4 a^3 c d^2-a^2 b d^3-3 b^3 d^3\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\left(-b c+a d\right)}{(a+b)\left(-c+d\right)}\right]\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Big/$$

$$\left((a+b)\,(c+d)\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Big/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(4\,a\,b^2\,c^2\,d-a^2\,b\,c\,d^2-7\,b^3\,c\,d^2-3\,a^3\,d^3+7\,a\,b^2\,d^3\right)\,\left(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Big/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\right)-$$

$$
\begin{aligned}
&\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\Bigg(\Bigg(\Bigg(((a+b)\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\Bigg[\\
&\qquad\mathrm{ArcSin}\Bigg[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]\,\mathrm{Sec}[e+f\,x]\\
&\qquad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\\
&\qquad\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/\\
&\quad\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-\\
&\quad\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\Bigg[\frac{-b\,c+a\,d}{(a+b)\,d},\ \mathrm{ArcSin}\Bigg[\\
&\qquad\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\Bigg],\ \frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\Bigg]\,\mathrm{Sec}[e+f\,x]\\
&\qquad\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\\
&\qquad\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg)\Bigg/\\
&\quad\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg)\Bigg)
\end{aligned}
$$

Problem 796: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 497 leaves, 4 steps):

$$\left(8\,(c-d)\,\sqrt{c+d}\,(a\,c-b\,d)\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{a+b}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{\sqrt{c+d}\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}\right],\frac{(a-b)\,(c+d)}{(a+b)\,(c-d)}\right]\mathrm{Sec}[e+f\,x]\sqrt{-\frac{(b\,c-a\,d)\,(1-\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\sqrt{\frac{(b\,c-a\,d)\,(1+\mathrm{Sin}[e+f\,x])}{(c-d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\,(a+b\,\mathrm{Sin}[e+f\,x])\right)\Big/\left(3\,(a-b)^2\,(a+b)^{3/2}\,(b\,c-a\,d)\,f\right)+\frac{2\,(b\,c-a\,d)\,\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{3\,(a^2-b^2)\,f\,(a+b\,\mathrm{Sin}[e+f\,x])^{3/2}}+\left(2\,(c-d)\,(3\,a\,c+b\,c-a\,d-3\,b\,d)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{c+d}\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\right],\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\right]\mathrm{Sec}[e+f\,x]\sqrt{\frac{(b\,c-a\,d)\,(1-\mathrm{Sin}[e+f\,x])}{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}}\sqrt{-\frac{(b\,c-a\,d)\,(1+\mathrm{Sin}[e+f\,x])}{(a-b)\,(c+d\,\mathrm{Sin}[e+f\,x])}}\,(c+d\,\mathrm{Sin}[e+f\,x])\right)\Big/\left(3\,(a-b)^2\,\sqrt{a+b}\,\sqrt{c+d}\,(b\,c-a\,d)\,f\right)$$

Result (type 4, 1982 leaves):

$$\frac{1}{f}\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\left(-\frac{2\,(-b\,c\,\mathrm{Cos}[e+f\,x]+a\,d\,\mathrm{Cos}[e+f\,x])}{3\,(a^2-b^2)\,(a+b\,\mathrm{Sin}[e+f\,x])^2}-\frac{8\,(-a\,b\,c\,\mathrm{Cos}[e+f\,x]+b^2\,d\,\mathrm{Cos}[e+f\,x])}{3\,(a^2-b^2)^2\,(a+b\,\mathrm{Sin}[e+f\,x])}\right)+$$

$$\frac{1}{3\,(a-b)^2\,(a+b)^2\,f}\left(-\left(\left(4\,(-b\,c+a\,d)\,(3\,a^2\,c^2+b^2\,c^2-4\,a\,b\,c\,d+a^2\,d^2-b^2\,d^2)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.\right.$$

$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right) -$$

$$4\,(-b c+a d)\,\left(4 a b c^2+4 a^2 c d-4 b^2 c d-4 a b d^2\right)\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\text{Sec}[$$

$$e+f x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right) \Big/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right) -$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\left[\frac{-b c+a d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(-4\,a\,b\,c\,d+4\,b^2\,d^2\right)\,\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\,\left(\left(\left((a+b)\,c+a\,d\right)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\text{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 797: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,\text{Sin}[e+f\,x]}}{(a+b\,\text{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 489 leaves, 4 steps):

$$\left(2 (c-d) \sqrt{c+d} \left(4 a b c-3 a^2 d-b^2 d\right)\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b} \sqrt{c+d \,\text{Sin}[e+f x]}}{\sqrt{c+d} \sqrt{a+b \,\text{Sin}[e+f x]}}\right],\frac{(a-b) (c+d)}{(a+b) (c-d)}\right] \text{Sec}[e+f x]$$

$$\left.\sqrt{-\frac{(b c-a d) (1-\text{Sin}[e+f x])}{(c+d) (a+b \,\text{Sin}[e+f x])}} \sqrt{\frac{(b c-a d) (1+\text{Sin}[e+f x])}{(c-d) (a+b \,\text{Sin}[e+f x])}} (a+b \,\text{Sin}[e+f x])\right) \Big/$$

$$\left(3 (a-b)^2 (a+b)^{3/2} (b c-a d)^2 f\right)+\frac{2 b \,\text{Cos}[e+f x] \sqrt{c+d \,\text{Sin}[e+f x]}}{3 \left(a^2-b^2\right) f (a+b \,\text{Sin}[e+f x])^{3/2}}+$$

$$\left(2 (3 a+b) (c-d) \,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \,\text{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \,\text{Sin}[e+f x]}}\right],\frac{(a+b) (c-d)}{(a-b) (c+d)}\right] \text{Sec}[e+f x]\right.$$

$$\left.\sqrt{\frac{(b c-a d) (1-\text{Sin}[e+f x])}{(a+b) (c+d \,\text{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d) (1+\text{Sin}[e+f x])}{(a-b) (c+d \,\text{Sin}[e+f x])}} (c+d \,\text{Sin}[e+f x])\right) \Big/$$

$$\left(3 (a-b)^2 \sqrt{a+b} \sqrt{c+d} (b c-a d) f\right)$$

Result (type 4, 2037 leaves):

$$\frac{1}{f}\sqrt{a+b \,\text{Sin}[e+f x]} \sqrt{c+d \,\text{Sin}[e+f x]} \left(\frac{2 b \,\text{Cos}[e+f x]}{3 \left(a^2-b^2\right) (a+b \,\text{Sin}[e+f x])^2}+\right.$$

$$\left.\frac{2 \left(-4 a b^2 c \,\text{Cos}[e+f x]+3 a^2 b d \,\text{Cos}[e+f x]+b^3 d \,\text{Cos}[e+f x]\right)}{3 \left(a^2-b^2\right)^2 (-b c+a d) (a+b \,\text{Sin}[e+f x])}\right)+$$

$$\frac{1}{3 (a-b)^2 (a+b)^2 (-b c+a d) f}$$

$$\left(-\left(\left(4 (-b c+a d) \left(-3 a^2 b c^2-b^3 c^2+3 a^3 c d+a b^2 c d-a^2 b d^2+b^3 d^2\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d) \,\text{Cot}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}} \,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \,\text{Csc}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\frac{2 (-b c+a d)}{(a+b) (-c+d)}\Big] \text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \,\text{Csc}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(-4\,a\,b^2\,c^2-a^2\,b\,c\,d+b^3\,c\,d+3\,a^3\,d^2+a\,b^2\,d^2\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(4\,a\,b^2\,c\,d-3\,a^2\,b\,d^2-b^3\,d^2\right)\,\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\,\left(\left(\left((a+b)\,c+a\,d\right)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\left[\right.\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\Bigg((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.$$

$$\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\left.\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 798: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}\,dx$$

Optimal (type 4, 516 leaves, 4 steps):

$$\left(4 b (c-d) \sqrt{c+d} \left(2 a b c-3 a^2 d+b^2 d\right) \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{a+b} \sqrt{c+d \sin[e+f x]}}{\sqrt{c+d} \sqrt{a+b \sin[e+f x]}}\right], \frac{(a-b) (c+d)}{(a+b) (c-d)}\right] \sec[e+f x] \sqrt{-\frac{(b c-a d) (1-\sin[e+f x])}{(c+d) (a+b \sin[e+f x])}} \sqrt{\frac{(b c-a d) (1+\sin[e+f x])}{(c-d) (a+b \sin[e+f x])}} (a+b \sin[e+f x])\right) \Big/ \left(3 (a-b)^2 (a+b)^{3/2} (b c-a d)^3 f\right)+\frac{2 b^2 \cos[e+f x] \sqrt{c+d \sin[e+f x]}}{3 \left(a^2-b^2\right) (b c-a d) f (a+b \sin[e+f x])^{3/2}}+$$

$$\left(2 \left(3 a b (c-d)-3 a^2 d+b^2 (c+2 d)\right) \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \sin[e+f x]}}{\sqrt{a+b} \sqrt{c+d \sin[e+f x]}}\right], \frac{(a+b) (c-d)}{(a-b) (c+d)}\right] \sec[e+f x] \sqrt{\frac{(b c-a d) (1-\sin[e+f x])}{(a+b) (c+d \sin[e+f x])}} \sqrt{-\frac{(b c-a d) (1+\sin[e+f x])}{(a-b) (c+d \sin[e+f x])}} (c+d \sin[e+f x])\right) \Big/ \left(3 (a-b)^2 \sqrt{a+b} \sqrt{c+d} (b c-a d)^2 f\right)$$

Result (type 4, 2072 leaves):

$$\frac{1}{f}\sqrt{a+b \sin[e+f x]} \sqrt{c+d \sin[e+f x]} \left(-\frac{2 b^2 \cos[e+f x]}{3 \left(a^2-b^2\right) (-b c+a d) (a+b \sin[e+f x])^2}+\frac{4 \left(2 a b^3 c \cos[e+f x]-3 a^2 b^2 d \cos[e+f x]+b^4 d \cos[e+f x]\right)}{3 \left(a^2-b^2\right)^2 (-b c+a d)^2 (a+b \sin[e+f x])}\right)+$$

$$\frac{1}{3 (a-b)^2 (a+b)^2 (-b c+a d)^2 f}$$

$$\left(-\left(\left(4 (-b c+a d) \left(3 a^2 b^2 c^2+b^4 c^2-6 a^3 b c d+2 a b^3 c d+3 a^4 d^2-5 a^2 b^2 d^2+2 b^4 d^2\right)\right.\right.\right.$$

$$\sqrt{\frac{(c+d) \cot\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b) \csc\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (c+d \sin[e+f x])}{-b c+a d}}}{\sqrt{2}}\right], \frac{2 (-b c+a d)}{(a+b) (-c+d)}\right]$$

$$\sec[e+f x] \sin\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^4 \sqrt{\frac{(c+d) \csc\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]^2 (a+b \sin[e+f x])}{-b c+a d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\bigg/$$

$$\left.\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)-$$

$$4\,(-b\,c+a\,d)\,\left(4\,a\,b^3\,c^2-2\,a^2\,b^2\,c\,d+2\,b^4\,c\,d-6\,a^3\,b\,d^2+2\,a\,b^3\,d^2\right)$$

$$\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\left.\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\right/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)+$$

$$2\left(-4\,a\,b^3\,c\,d+6\,a^2\,b^2\,d^2-2\,b^4\,d^2\right)\left(\frac{\mathrm{Cos}[e+f\,x]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\mathrm{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\mathrm{Sin}[e+f\,x]}}\right.$$

$$\left.\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\mathrm{Sin}[e+f\,x])}{(c+d)\,(a+b\,\mathrm{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b\,c+a\,d)\left(\left(\left((a+b)\,c+a\,d\right)\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\mathrm{EllipticF}\right[\right.\right.$$

$$\mathrm{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\,\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 799: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}\,(c+d\,\mathrm{Sin}[e+f\,x])^{3/2}}\,dx$$

Optimal (type 4, 688 leaves, 5 steps):

$$\frac{2 b^2 \operatorname{Cos}[e+f x]}{3\left(a^2-b^2\right)(b c-a d) f(a+b \operatorname{Sin}[e+f x])^{3/2} \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$
$$\frac{8 b^2\left(a b c-2 a^2 d+b^2 d\right) \operatorname{Cos}[e+f x]}{3\left(a^2-b^2\right)^2(b c-a d)^2 f \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}}+$$
$$\left(2\left(3 a^4 d^3-b^4 d\left(5 c^2-8 d^2\right)+3 a^2 b^2 d\left(3 c^2-5 d^2\right)-4 a b^3 c\left(c^2-d^2\right)\right)\right.$$
$$\operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \operatorname{Sin}[e+f x]}}\right], \frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x]$$
$$\left.\sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}}(c+d \operatorname{Sin}[e+f x])\right) \Big/$$
$$\left(3 \sqrt{a+b}\left(a^2-b^2\right)(c-d) \sqrt{c+d}(b c-a d)^4 f\right)-$$
$$\left(2\left(3 a^2 b(2 c-3 d) d-3 a^3 d^2-3 a b^2\left(c^2-2 d^2\right)+b^3\left(c^2-6 c d+8 d^2\right)\right)\right.$$
$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\frac{\sqrt{c+d} \sqrt{a+b \operatorname{Sin}[e+f x]}}{\sqrt{a+b} \sqrt{c+d \operatorname{Sin}[e+f x]}}\right], \frac{(a+b)(c-d)}{(a-b)(c+d)}\right] \operatorname{Sec}[e+f x]$$
$$\left.\sqrt{\frac{(b c-a d)(1-\operatorname{Sin}[e+f x])}{(a+b)(c+d \operatorname{Sin}[e+f x])}} \sqrt{-\frac{(b c-a d)(1+\operatorname{Sin}[e+f x])}{(a-b)(c+d \operatorname{Sin}[e+f x])}}(c+d \operatorname{Sin}[e+f x])\right) \Big/$$
$$\left(3 \sqrt{a+b}\left(a^2-b^2\right)(c-d) \sqrt{c+d}(b c-a d)^3 f\right)$$

Result (type 4, 2322 leaves):

$$\frac{1}{f} \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}\left(\frac{2 b^3 \operatorname{Cos}[e+f x]}{3\left(a^2-b^2\right)(-b c+a d)^2(a+b \operatorname{Sin}[e+f x])^2}-\right.$$
$$\frac{2\left(4 a b^4 c \operatorname{Cos}[e+f x]-9 a^2 b^3 d \operatorname{Cos}[e+f x]+5 b^5 d \operatorname{Cos}[e+f x]\right)}{3\left(a^2-b^2\right)^2(-b c+a d)^3(a+b \operatorname{Sin}[e+f x])}-$$
$$\left.\frac{2 d^4 \operatorname{Cos}[e+f x]}{(b c-a d)^3\left(c^2-d^2\right)(c+d \operatorname{Sin}[e+f x])}\right)+\frac{1}{3(a-b)^2(a+b)^2(c-d)(c+d)(-b c+a d)^3 f}$$
$$\left(-\frac{1}{(a+b)(c+d) \sqrt{a+b \operatorname{Sin}[e+f x]} \sqrt{c+d \operatorname{Sin}[e+f x]}} 4(-b c+a d)\right.$$
$$\left(-3 a^2 b^3 c^4-b^5 c^4+9 a^3 b^2 c^3 d-5 a b^4 c^3 d-9 a^4 b c^2 d^2+20 a^2 b^3 c^2 d^2-7 b^5 c^2 d^2+3 a^5 c d^3-\right.$$
$$\left.15 a^3 b^2 c d^3+8 a b^4 c d^3+9 a^4 b d^4-17 a^2 b^3 d^4+8 b^5 d^4\right) \sqrt{\frac{(c+d) \operatorname{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\;-$$

$$4\,(-b\,c+a\,d)\,\left(-4\,a\,b^4\,c^4+5\,a^2\,b^3\,c^3\,d-5\,b^5\,c^3\,d+9\,a^3\,b^2\,c^2\,d^2-a\,b^4\,c^2\,d^2+3\,a^4\,b\,c\,d^3-\right.$$

$$\left.11\,a^2\,b^3\,c\,d^3+8\,b^5\,c\,d^3+3\,a^5\,d^4-15\,a^3\,b^2\,d^4+8\,a\,b^4\,d^4\right)\left(\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\text{Sec}[$$

$$e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}\right)\Bigg/$$

$$\left.\left(\left(a+b\right)\,d\,\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\right)+$$

$$2\,\left(4\,a\,b^4\,c^3\,d-9\,a^2\,b^3\,c^2\,d^2+5\,b^5\,c^2\,d^2-4\,a\,b^4\,c\,d^3-3\,a^4\,b\,d^4+15\,a^2\,b^3\,d^4-8\,b^5\,d^4\right)$$

$$\left(\frac{\text{Cos}[e+f x]\,\sqrt{c+d\,\text{Sin}[e+f x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f x]}}+\right.$$

$$\left(\sqrt{\frac{a-b}{a+b}}\,(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}}\right],\right.\right.$$

$$\left.\left.\frac{2\,(-b c+a d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f x]}\right)\Bigg/\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{a+b\,\text{Sin}[e+f x]}}\right.$$

$$\left.\sqrt{a+b\,\text{Sin}[e+f x]}\,\sqrt{\frac{a+b\,\text{Sin}[e+f x]}{a+b}}\,\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f x])}{(c+d)\,(a+b\,\text{Sin}[e+f x])}}\right)-$$

$$\frac{1}{b\,d}\,2\,(-b c+a d)\left(\left(\left((a+b)\,c+a d\right)\,\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2}{-c+d}}\,\text{EllipticF}\right[\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(c+d\,\text{Sin}[e+f x])}{-b c+a d}}}{\sqrt{2}}\right],\,\frac{2\,(-b c+a d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^4\,\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]^2\,(a+b\,\text{Sin}[e+f x])}{-b c+a d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left((a+b)\,(c+d)\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)-$$

$$\left((b\,c+a\,d)\,\sqrt{\frac{(c+d)\,\mathrm{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\mathrm{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\,\mathrm{ArcSin}\left[\right.\right.\right.$$

$$\left.\frac{\sqrt{-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\,\left.\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\mathrm{Sec}[e+f\,x]$$

$$\mathrm{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{\left(-\frac{(a+b)\,\mathrm{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\mathrm{Sin}[e+f\,x])}{-b\,c+a\,d}\right)}\Bigg/$$

$$\left.\left.\left.\left((a+b)\,d\,\sqrt{a+b\,\mathrm{Sin}[e+f\,x]}\,\sqrt{c+d\,\mathrm{Sin}[e+f\,x]}\right)\right)\right)\right)$$

Problem 800: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b\,\mathrm{Sin}[e+f\,x])^{5/2}\,(c+d\,\mathrm{Sin}[e+f\,x])^{5/2}}\,dx$$

Optimal (type 4, 941 leaves, 6 steps):

$$\frac{2\,b^2\,\text{Cos}[e+f\,x]}{3\,(a^2-b^2)\,(b\,c-a\,d)\,f\,(a+b\,\text{Sin}[e+f\,x])^{3/2}\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}+$$

$$\frac{4\,b^2\,(2\,a\,b\,c-5\,a^2\,d+3\,b^2\,d)\,\text{Cos}[e+f\,x]}{3\,(a^2-b^2)^2\,(b\,c-a\,d)^2\,f\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\,(c+d\,\text{Sin}[e+f\,x])^{3/2}}-$$

$$\Big(2\,d\,\big(a^4\,d^3+a^2\,b^2\,d\,(11\,c^2-13\,d^2)-b^4\,d\,(7\,c^2-8\,d^2)-4\,a\,b^3\,c\,(c^2-d^2)\big)\,\text{Cos}[e+f\,x]\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\Big)\Big/\Big(3\,(a^2-b^2)^2\,(b\,c-a\,d)^3\,(c^2-d^2)\,f\,(c+d\,\text{Sin}[e+f\,x])^{3/2}\Big)-$$

$$\Bigg(8\,\big(a^5\,c\,d^4-2\,a^3\,b^2\,c\,d^4+a\,b^4\,c\,(c^4-2\,c^2\,d^2+2\,d^4)+b^5\,d\,(2\,c^4-7\,c^2\,d^2+4\,d^4)-a^2\,b^3\,d\,(3\,c^4-12\,c^2\,d^2+7\,d^4)-a^4\,b\,(3\,c^2\,d^3-2\,d^5)\big)\,\text{EllipticE}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\,\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\Bigg)\Big/\Big(3\,\sqrt{a+b}\,(a^2-b^2)\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)^5\,f\Big)-$$

$$\Bigg(2\,\big(a^4\,d^3\,(3\,c+d)-9\,a^3\,b\,d^2\,(c^2-d^2)+a^2\,b^2\,d\,(9\,c^3-18\,c^2\,d-15\,c\,d^2+16\,d^3)+b^4\,(c^4-9\,c^3\,d+16\,c^2\,d^2+12\,c\,d^3-16\,d^4)-3\,a\,b^3\,(c^4-5\,c^2\,d^2+4\,d^4)\big)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{\sqrt{c+d}\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}{\sqrt{a+b}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}\Big],\,\frac{(a+b)\,(c-d)}{(a-b)\,(c+d)}\Big]\,\text{Sec}[e+f\,x]\,\sqrt{\frac{(b\,c-a\,d)\,(1-\text{Sin}[e+f\,x])}{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}}\,\sqrt{-\frac{(b\,c-a\,d)\,(1+\text{Sin}[e+f\,x])}{(a-b)\,(c+d\,\text{Sin}[e+f\,x])}}\,(c+d\,\text{Sin}[e+f\,x])\Bigg)\Big/\Big(3\,\sqrt{a+b}\,(a^2-b^2)\,(c-d)^2\,(c+d)^{3/2}\,(b\,c-a\,d)^4\,f\Big)$$

Result (type 4, 2639 leaves):

$$\frac{1}{f}\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\,\Bigg(-\frac{2\,b^4\,\text{Cos}[e+f\,x]}{3\,(a^2-b^2)\,(-b\,c+a\,d)^3\,(a+b\,\text{Sin}[e+f\,x])^2}+\frac{8\,(a\,b^5\,c\,\text{Cos}[e+f\,x]-3\,a^2\,b^4\,d\,\text{Cos}[e+f\,x]+2\,b^6\,d\,\text{Cos}[e+f\,x])}{3\,(a^2-b^2)^2\,(-b\,c+a\,d)^4\,(a+b\,\text{Sin}[e+f\,x])}-\frac{2\,d^4\,\text{Cos}[e+f\,x]}{3\,(b\,c-a\,d)^3\,(c^2-d^2)\,(c+d\,\text{Sin}[e+f\,x])^2}+\frac{8\,(-3\,b\,c^2\,d^4\,\text{Cos}[e+f\,x]+a\,c\,d^5\,\text{Cos}[e+f\,x]+2\,b\,d^6\,\text{Cos}[e+f\,x])}{3\,(b\,c-a\,d)^4\,(c^2-d^2)^2\,(c+d\,\text{Sin}[e+f\,x])}\Bigg)+$$

$$\frac{1}{3\,(a-b)^2\,(a+b)^2\,(c-d)^2\,(c+d)^2\,(-b\,c+a\,d)^4\,f}$$

$$\left(-\frac{1}{(a+b)\ (c+d)\ \sqrt{a+b\,\text{Sin}[e+f\,x]}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}}\right.$$

$$4\ (-b\,c+a\,d)\ \left(3\,a^2\,b^4\,c^6+b^6\,c^6-12\,a^3\,b^3\,c^5\,d+8\,a\,b^5\,c^5\,d+18\,a^4\,b^2\,c^4\,d^2-41\,a^2\,b^4\,c^4\,d^2+15\,b^6\,c^4\,d^2-12\,a^5\,b\,c^3\,d^3+48\,a^3\,b^3\,c^3\,d^3-28\,a\,b^5\,c^3\,d^3+3\,a^6\,c^2\,d^4-41\,a^4\,b^2\,c^2\,d^4+74\,a^2\,b^4\,c^2\,d^4-32\,b^6\,c^2\,d^4+8\,a^5\,b\,c\,d^5-28\,a^3\,b^3\,c\,d^5+16\,a\,b^5\,c\,d^5+a^6\,d^6+15\,a^4\,b^2\,d^6-32\,a^2\,b^4\,d^6+16\,b^6\,d^6\right)\ \sqrt{\frac{(c+d)\ \text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\ (-b\,c+a\,d)}{(a+b)\ (-c+d)}\right]$$

$$\text{Sec}[e+f\,x]\ \text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\ \sqrt{\frac{(c+d)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\sqrt{-\frac{(a+b)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\ -$$

$$4\ (-b\,c+a\,d)\ \left(4\,a\,b^5\,c^6-8\,a^2\,b^4\,c^5\,d+8\,b^6\,c^5\,d-12\,a^3\,b^3\,c^4\,d^2-12\,a^4\,b^2\,c^3\,d^3+40\,a^2\,b^4\,c^3\,d^3-28\,b^6\,c^3\,d^3-8\,a^5\,b\,c^2\,d^4+40\,a^3\,b^3\,c^2\,d^4-20\,a\,b^5\,c^2\,d^4+4\,a^6\,c\,d^5-20\,a^2\,b^4\,c\,d^5+16\,b^6\,c\,d^5+8\,a^5\,b\,d^6-28\,a^3\,b^3\,d^6+16\,a\,b^5\,d^6\right)\ \left(\left(\sqrt{\frac{(c+d)\ \text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\ \text{EllipticF}\left[\right.\right.\right.$$

$$\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\ \frac{2\ (-b\,c+a\,d)}{(a+b)\ (-c+d)}\right]\ \text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\ \sqrt{\frac{(c+d)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\ \text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\ (c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Bigg/$$

$$\left((a+b)\ (c+d)\ \sqrt{a+b\,\text{Sin}[e+f\,x]}\ \sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\ -$$

$$\left(\sqrt{\frac{(c+d)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\;\text{EllipticPi}\left[\frac{-b\,c+a\,d}{(a+b)\,d},\right.\right.$$

$$\left.\text{ArcSin}\left[\frac{\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}}{\sqrt{2}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a+b)\,(-c+d)}\right]\,\text{Sec}[e+f\,x]$$

$$\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{(c+d)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(a+b\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}$$

$$\left.\sqrt{-\frac{(a+b)\,\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,(c+d\,\text{Sin}[e+f\,x])}{-b\,c+a\,d}}\right)\Bigg/$$

$$\left.\left((a+b)\,d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}\;\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)+$$

$$2\,\left(-4\,a\,b^5\,c^5\,d+12\,a^2\,b^4\,c^4\,d^2-8\,b^6\,c^4\,d^2+8\,a\,b^5\,c^3\,d^3+12\,a^4\,b^2\,c^2\,d^4-48\,a^2\,b^4\,c^2\,d^4+\right.$$
$$\left.28\,b^6\,c^2\,d^4-4\,a^5\,b\,c\,d^5+8\,a^3\,b^3\,c\,d^5-8\,a\,b^5\,c\,d^5-8\,a^4\,b^2\,d^6+28\,a^2\,b^4\,d^6-16\,b^6\,d^6\right)$$

$$\left(\frac{\text{Cos}[e+f\,x]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}}{d\,\sqrt{a+b\,\text{Sin}[e+f\,x]}}+\left(\sqrt{\frac{a-b}{a+b}}\;(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\,\text{EllipticE}\left[\right.\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{\frac{a-b}{a+b}}\;\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]}{\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}}\right],\;\frac{2\,(-b\,c+a\,d)}{(a-b)\,(c+d)}\right]\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\Bigg/$$

$$\left(b\,d\,\sqrt{\frac{(a+b)\,\text{Cos}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{a+b\,\text{Sin}[e+f\,x]}}\;\sqrt{a+b\,\text{Sin}[e+f\,x]}\right.$$

$$\left.\sqrt{\frac{a+b\,\text{Sin}[e+f\,x]}{a+b}}\;\sqrt{\frac{(a+b)\,(c+d\,\text{Sin}[e+f\,x])}{(c+d)\,(a+b\,\text{Sin}[e+f\,x])}}\right)-$$

$$\frac{1}{b\,d}2\left(-b\,c+a\,d\right)\left(\left(\left(\left(a+b\right)c+a\,d\right)\sqrt{\frac{\left(c+d\right)\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{-\frac{\left(a+b\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\left(-b\,c+a\,d\right)}{\left(a+b\right)\left(-c+d\right)}\right]\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{\left(c+d\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(a+b\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}\,\sqrt{\left(-\frac{\left(a+b\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}\right)}\right)\Big/\left(\left(a+b\right)\left(c+d\right)\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)-\left(\left(b\,c+a\,d\right)\sqrt{\frac{\left(c+d\right)\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2}{-c+d}}\,\text{EllipticPi}\left[\frac{-b\,c+a\,d}{\left(a+b\right)d},\text{ArcSin}\left[\frac{\sqrt{-\frac{\left(a+b\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}}{\sqrt{2}}\right],\frac{2\left(-b\,c+a\,d\right)}{\left(a+b\right)\left(-c+d\right)}\right]\text{Sec}[e+f\,x]\,\text{Sin}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^4\sqrt{\frac{\left(c+d\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(a+b\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}}\,\sqrt{\left(-\frac{\left(a+b\right)\text{Csc}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\left(c+d\,\text{Sin}[e+f\,x]\right)}{-b\,c+a\,d}\right)}\right)\Big/\left(\left(a+b\right)d\sqrt{a+b\,\text{Sin}[e+f\,x]}\,\sqrt{c+d\,\text{Sin}[e+f\,x]}\right)\right)$$

Problem 802: Unable to integrate problem.

$$\int (a+b\,\mathrm{Sin}[e+f\,x])^m\,(c+d\,\mathrm{Sin}[e+f\,x])^2\,dx$$

Optimal (type 6, 311 leaves, 8 steps):

$$-\frac{d^2\,\mathrm{Cos}[e+f\,x]\,(a+b\,\mathrm{Sin}[e+f\,x])^{1+m}}{b\,f\,(2+m)}+$$
$$\left(\sqrt{2}\,(a+b)\,d\,(a\,d-2\,b\,c\,(2+m))\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-m,\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sin}[e+f\,x]),\frac{b\,(1-\mathrm{Sin}[e+f\,x])}{a+b}\right]\mathrm{Cos}[e+f\,x]\,(a+b\,\mathrm{Sin}[e+f\,x])^m\left(\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}\right)^{-m}\right)\Big/$$
$$\left(b^2\,f\,(2+m)\,\sqrt{1+\mathrm{Sin}[e+f\,x]}\right)-\left(\sqrt{2}\,\left(a\,d\,(a\,d-2\,b\,c\,(2+m))+b^2\,\left(d^2\,(1+m)+c^2\,(2+m)\right)\right)\right.$$
$$\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-m,\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Sin}[e+f\,x]),\frac{b\,(1-\mathrm{Sin}[e+f\,x])}{a+b}\right]\mathrm{Cos}[e+f\,x]$$
$$\left.(a+b\,\mathrm{Sin}[e+f\,x])^m\left(\frac{a+b\,\mathrm{Sin}[e+f\,x]}{a+b}\right)^{-m}\right)\Big/\left(b^2\,f\,(2+m)\,\sqrt{1+\mathrm{Sin}[e+f\,x]}\right)$$

Result (type 8, 27 leaves):

$$\int (a+b\,\mathrm{Sin}[e+f\,x])^m\,(c+d\,\mathrm{Sin}[e+f\,x])^2\,dx$$

Problem 814: Unable to integrate problem.

$$\int (d\,\mathrm{Csc}[e+f\,x])^n\,(a+a\,\mathrm{Sin}[e+f\,x])^3\,dx$$

Optimal (type 5, 272 leaves, 8 steps):

$$\frac{a^3\,d^3\,(1-2\,n)\,\mathrm{Cot}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{-3+n}}{f\,(1-n)\,(2-n)}+$$
$$\frac{d^3\,\mathrm{Cot}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{-3+n}\,(a^3+a^3\,\mathrm{Csc}[e+f\,x])}{f\,(1-n)}+$$
$$\left(a^3\,d^3\,(5-4\,n)\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{-3+n}\right.$$
$$\left.\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{3-n}{2},\frac{5-n}{2},\mathrm{Sin}[e+f\,x]^2\right]\right)\Big/$$
$$\left(f\,(1-n)\,(3-n)\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)+\left(a^3\,d^4\,(11-4\,n)\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{-4+n}\right.$$
$$\left.\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{4-n}{2},\frac{6-n}{2},\mathrm{Sin}[e+f\,x]^2\right]\right)\Big/\left(f\,(2-n)\,(4-n)\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)$$

Result (type 9, 28 213 leaves): Display of huge result suppressed!

Problem 816: Result unnecessarily involves imaginary or complex numbers.

$$\int (d\,\text{Csc}[e+f\,x])^n\,(a+a\,\text{Sin}[e+f\,x])\,dx$$

Optimal (type 5, 149 leaves, 6 steps):

$$\left(a\,d\,\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^{-1+n}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Sin}[e+f\,x]^2\right]\right)\Big/\left(f\,(1-n)\,\sqrt{\text{Cos}[e+f\,x]^2}\right)+\left(a\,d^2\,\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^{-2+n}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2-n}{2},\frac{4-n}{2},\text{Sin}[e+f\,x]^2\right]\right)\Big/\left(f\,(2-n)\,\sqrt{\text{Cos}[e+f\,x]^2}\right)$$

Result (type 5, 278 leaves):

$$\frac{1}{f\,(-1+n)\,n\,(1+n)\,\left(\text{Cos}\left[\frac{1}{2}(e+f\,x)\right]+\text{Sin}\left[\frac{1}{2}(e+f\,x)\right]\right)^2}2^{-1+n}\,a\,e^{-i\,(e+f\,n\,x)}\,\left(1-e^{2\,i\,(e+f\,x)}\right)^n\left(\frac{i\,e^{i\,(e+f\,x)}}{-1+e^{2\,i\,(e+f\,x)}}\right)^n\text{Csc}[e+f\,x]^{-1-n}\,(d\,\text{Csc}[e+f\,x])^n\,(1+\text{Csc}[e+f\,x])\left(e^{i\,f\,(-1+n)\,x}\,n\,(1+n)\,\text{Hypergeometric2F1}\left[\frac{1}{2}(-1+n),n,\frac{1+n}{2},e^{2\,i\,(e+f\,x)}\right]-e^{i\,e}\,(-1+n)\left(2\,i\,e^{i\,f\,n\,x}\,(1+n)\,\text{Hypergeometric2F1}\left[\frac{n}{2},n,\frac{2+n}{2},e^{2\,i\,(e+f\,x)}\right]+e^{i\,(e+f\,(1+n)\,x)}\,n\,\text{Hypergeometric2F1}\left[n,\frac{1+n}{2},\frac{3+n}{2},e^{2\,i\,(e+f\,x)}\right]\right)\right)$$

Problem 817: Unable to integrate problem.

$$\int \frac{(d\,\text{Csc}[e+f\,x])^n}{a+a\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 5, 171 leaves, 7 steps):

$$-\frac{\text{Cot}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^n}{f\,(a+a\,\text{Csc}[e+f\,x])}+\left(d\,n\,\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^{-1+n}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1-n}{2},\frac{3-n}{2},\text{Sin}[e+f\,x]^2\right]\right)\Big/\left(a\,f\,(1-n)\,\sqrt{\text{Cos}[e+f\,x]^2}\right)+\left(\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},-\frac{n}{2},\frac{2-n}{2},\text{Sin}[e+f\,x]^2\right]\right)\Big/\left(a\,f\,\sqrt{\text{Cos}[e+f\,x]^2}\right)$$

Result (type 8, 25 leaves):

$$\int \frac{(d\,\mathrm{Csc}[e+f\,x])^n}{a+a\,\mathrm{Sin}[e+f\,x]}\,dx$$

Problem 818: Unable to integrate problem.

$$\int \frac{(d\,\mathrm{Csc}[e+f\,x])^n}{(a+a\,\mathrm{Sin}[e+f\,x])^2}\,dx$$

Optimal (type 5, 231 leaves, 8 steps):

$$-\frac{2\,n\,\mathrm{Cot}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{2+n}}{3\,a^2\,d^2\,f\,(1+\mathrm{Csc}[e+f\,x])}+\frac{\mathrm{Cot}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{2+n}}{3\,d^2\,f\,(a+a\,\mathrm{Csc}[e+f\,x])^2}+$$
$$\left(2\,n\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{2+n}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}(-2-n),-\frac{n}{2},\mathrm{Sin}[e+f\,x]^2\right]\right)\Big/$$
$$\left(3\,a^2\,d^2\,f\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)-\left((1+2\,n)\,\mathrm{Cos}[e+f\,x]\,(d\,\mathrm{Csc}[e+f\,x])^{1+n}\right.$$
$$\left.\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}(-1-n),\frac{1-n}{2},\mathrm{Sin}[e+f\,x]^2\right]\right)\Big/\left(3\,a^2\,d\,f\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)$$

Result (type 8, 25 leaves):

$$\int \frac{(d\,\mathrm{Csc}[e+f\,x])^n}{(a+a\,\mathrm{Sin}[e+f\,x])^2}\,dx$$

Problem 819: Result more than twice size of optimal antiderivative.

$$\int \left(c\,(d\,\mathrm{Sin}[e+f\,x])^p\right)^n\,(a+a\,\mathrm{Sin}[e+f\,x])^m\,dx$$

Optimal (type 6, 113 leaves, 5 steps):

$$-\frac{1}{f}2^{\frac{1}{2}+m}\,\mathrm{AppellF1}\left[\frac{1}{2},-n\,p,\frac{1}{2}-m,\frac{3}{2},1-\mathrm{Sin}[e+f\,x],\frac{1}{2}(1-\mathrm{Sin}[e+f\,x])\right]\mathrm{Cos}[e+f\,x]$$
$$\mathrm{Sin}[e+f\,x]^{-n\,p}\left(c\,(d\,\mathrm{Sin}[e+f\,x])^p\right)^n\,(1+\mathrm{Sin}[e+f\,x])^{-\frac{1}{2}-m}\,(a+a\,\mathrm{Sin}[e+f\,x])^m$$

Result (type 6, 2967 leaves):

$$-\left(\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},-n\,p,1+m+n\,p,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.\right.$$
$$\mathrm{Cos}[e+f\,x]\left(\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\mathrm{Sin}[e+f\,x]^{n\,p}$$
$$\left.\left(c\,(d\,\mathrm{Sin}[e+f\,x])^p\right)^n\,(a+a\,\mathrm{Sin}[e+f\,x])^m\right)\Big/$$
$$\left(f\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},-n\,p,1+m+n\,p,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.\right.$$
$$2\left((1+m+n\,p)\,\mathrm{AppellF1}\left[\frac{3}{2},-n\,p,2+m+n\,p,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$
$$-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+n\,p\,\mathrm{AppellF1}\left[\frac{3}{2},1-n\,p,1+m+n\,p,\frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)$$

$$\Bigg(-\Bigg(\Bigg(3\,n\,p\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Cos}[e+f\,x]^2\,\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}$$

$$\text{Sin}[e+f\,x]^{-1+n\,p}\Bigg)\Bigg/\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$2\,\Bigg(\left(1+m+n\,p\right)\,\text{AppellF1}\left[\frac{3}{2},\,-n\,p,\,2+m+n\,p,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+n\,p\,\text{AppellF1}\left[\frac{3}{2},\,1-n\,p,\,1+m+n\,p,\,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)\Bigg)+$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\,\text{Sin}[e+f\,x]^{1+n\,p}\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$2\,\Bigg(\left(1+m+n\,p\right)\,\text{AppellF1}\left[\frac{3}{2},\,-n\,p,\,2+m+n\,p,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+n\,p\,\text{AppellF1}\left[\frac{3}{2},\,1-n\,p,\,1+m+n\,p,\,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)-$$

$$\Bigg(3\,m\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Cos}[e+f\,x]\,\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\,\text{Sin}[e+f\,x]^{n\,p}\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$

$$2\,\Bigg(\left(1+m+n\,p\right)\,\text{AppellF1}\left[\frac{3}{2},\,-n\,p,\,2+m+n\,p,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+n\,p\,\text{AppellF1}\left[\frac{3}{2},\,1-n\,p,\,1+m+n\,p,\,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)+$$

$$\Bigg(3\,\text{Cos}[e+f\,x]\,\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\,\text{Sin}[e+f\,x]^{n\,p}$$

$$\Bigg(-\frac{1}{3}\left(1+m+n\,p\right)\,\text{AppellF1}\left[\frac{3}{2},\,-n\,p,\,2+m+n\,p,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-$$

$$\frac{1}{3}\,n\,p\,\text{AppellF1}\left[\frac{3}{2},1-n\,p,1+m+n\,p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)\right)\Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n\,p,1+m+n\,p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-\right.$$

$$2\left(\left(1+m+n\,p\right)\text{AppellF1}\left[\frac{3}{2},-n\,p,2+m+n\,p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+n\,p\,\text{AppellF1}\left[\frac{3}{2},1-n\,p,1+m+n\,p,\frac{5}{2},\right.$$

$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)-$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-n\,p,1+m+n\,p,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right.$$

$$\text{Cos}[e+f\,x]\left(\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right)^{-m}\text{Sin}[e+f\,x]^{n\,p}$$

$$\left(-2\left(\left(1+m+n\,p\right)\text{AppellF1}\left[\frac{3}{2},-n\,p,2+m+n\,p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]+n\,p\,\text{AppellF1}\left[\frac{3}{2},1-n\,p,1+m+n\,p,\frac{5}{2},\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+3\left(-\frac{1}{3}\left(1+m+n\,p\right)\text{AppellF1}\left[\frac{3}{2},-n\,p,2+m+n\,p,\right.\right.$$

$$\left.\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{1}{3}\,n\,p\,\text{AppellF1}\left[\frac{3}{2},\right.$$

$$\left.1-n\,p,1+m+n\,p,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)-2\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left(\left(1+m+n\,p\right)\left(-\frac{3}{5}\left(2+m+n\,p\right)\text{AppellF1}\left[\frac{5}{2},-n\,p,3+m+n\,p,\frac{7}{2},\right.\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]-\frac{3}{5}\,n\,p\,\text{AppellF1}\left[\frac{5}{2},1-n\,p,2+m+n\,p,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\right)+n\,p\left(-\frac{3}{5}\left(1+m+n\,p\right)\text{AppellF1}\left[\frac{5}{2},1-n\,p,\right.\right.$$

$$\left.2+m+n\,p,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]+\frac{3}{5}\left(1-n\,p\right)\text{AppellF1}\left[\frac{5}{2},\right.$$

$$2-n\,p,\,1+m+n\,p,\,\frac{7}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]$$
$$\mathrm{Sec}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$
$$\Bigg(3\,\mathrm{AppellF1}\left[\frac{1}{2},\,-n\,p,\,1+m+n\,p,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\right]-$$
$$2\,\Bigg(\left(1+m+n\,p\right)\mathrm{AppellF1}\Big[\frac{3}{2},\,-n\,p,\,2+m+n\,p,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]+n\,p\,\mathrm{AppellF1}\Big[\frac{3}{2},\,1-n\,p,\,1+m+n\,p,\,\frac{5}{2},\,\mathrm{Tan}\Big[$$
$$\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\Big]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f\,x\right)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Problem 820: Unable to integrate problem.

$$\int\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n\,\left(a+a\,\mathrm{Sin}[e+f\,x]\right)^3\,dx$$

Optimal (type 5, 299 leaves, 7 steps):

$$-\frac{a^3\,(7+2\,n\,p)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e+f\,x]\,\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n}{f\,(2+n\,p)\,(3+n\,p)}+$$
$$\Bigg(a^3\,(5+4\,n\,p)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+n\,p),\,\frac{1}{2}\,(3+n\,p),\,\mathrm{Sin}[e+f\,x]^2\right]$$
$$\mathrm{Sin}[e+f\,x]\,\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n\Bigg)\Bigg/\left(f\,(1+n\,p)\,(2+n\,p)\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)+$$
$$\Bigg(a^3\,(11+4\,n\,p)\,\mathrm{Cos}[e+f\,x]\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(2+n\,p),\,\frac{1}{2}\,(4+n\,p),\,\mathrm{Sin}[e+f\,x]^2\right]$$
$$\mathrm{Sin}[e+f\,x]^2\,\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n\Bigg)\Bigg/\left(f\,(2+n\,p)\,(3+n\,p)\,\sqrt{\mathrm{Cos}[e+f\,x]^2}\right)-$$
$$\frac{\mathrm{Cos}[e+f\,x]\,\mathrm{Sin}[e+f\,x]\,\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n\,\left(a^3+a^3\,\mathrm{Sin}[e+f\,x]\right)}{f\,(3+n\,p)}$$

Result (type 9, 26 224 leaves): Display of huge result suppressed!

Problem 822: Result unnecessarily involves imaginary or complex numbers.

$$\int\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^p\right)^n\,\left(a+a\,\mathrm{Sin}[e+f\,x]\right)\,dx$$

Optimal (type 5, 163 leaves, 4 steps):

$$\left(a \operatorname{Cos}[e+f x] \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}(1+n p), \frac{1}{2}(3+n p), \operatorname{Sin}[e+f x]^2\right] \operatorname{Sin}[e+f x]\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n\right) \Big/ \left(f(1+n p) \sqrt{\operatorname{Cos}[e+f x]^2}\right)+\left(a \operatorname{Cos}[e+f x] \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}(2+n p), \frac{1}{2}(4+n p), \operatorname{Sin}[e+f x]^2\right] \operatorname{Sin}[e+f x]^2\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n\right) \Big/ \left(f(2+n p) \sqrt{\operatorname{Cos}[e+f x]^2}\right)$$

Result (type 5, 307 leaves):

$$\frac{1}{f n p(-1+n p)(1+n p)\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)^2} 2^{-1-n p} a e^{-i(e+f x)}\left(1-e^{2 i(e+f x)}\right)^{-n p}\left(-i e^{-i(e+f x)}\left(-1+e^{2 i(e+f x)}\right)\right)^{n p} \left(2 i e^{i(e+f x)}\left(-1+n^2 p^2\right) \operatorname{Hypergeometric2F1}\left[-n p,-\frac{n p}{2}, 1-\frac{n p}{2}, e^{2 i(e+f x)}\right]+n p(1-n p) \operatorname{Hypergeometric2F1}\left[-n p, \frac{1}{2}(-1-n p), \frac{1}{2}(1-n p), e^{2 i(e+f x)}\right]+e^{2 i(e+f x)} n p(1+n p) \operatorname{Hypergeometric2F1}\left[-n p, \frac{1}{2}(1-n p), \frac{1}{2}(3-n p), e^{2 i(e+f x)}\right]\right) \operatorname{Sin}[e+f x]^{-n p}\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n(1+\operatorname{Sin}[e+f x])$$

Problem 823: Unable to integrate problem.

$$\int \frac{\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n}{a+a \operatorname{Sin}[e+f x]} \, dx$$

Optimal (type 5, 189 leaves, 5 steps):

$$\left(\operatorname{Cos}[e+f x] \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{n p}{2}, \frac{1}{2}(2+n p), \operatorname{Sin}[e+f x]^2\right]\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n\right) \Big/ \left(a f \sqrt{\operatorname{Cos}[e+f x]^2}\right)-\left(n p \operatorname{Cos}[e+f x] \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{2}(1+n p), \frac{1}{2}(3+n p), \operatorname{Sin}[e+f x]^2\right] \operatorname{Sin}[e+f x]\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n\right) \Big/ \left(a f(1+n p) \sqrt{\operatorname{Cos}[e+f x]^2}\right)-\frac{\operatorname{Cos}[e+f x]\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n}{f(a+a \operatorname{Sin}[e+f x])}$$

Result (type 8, 29 leaves):

$$\int \frac{\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n}{a+a \operatorname{Sin}[e+f x]} \, dx$$

Problem 824: Unable to integrate problem.

$$\int \frac{\left(c\left(d \operatorname{Sin}[e+f x]\right)^p\right)^n}{(a+a \operatorname{Sin}[e+f x])^2} \, dx$$

Optimal (type 5, 288 leaves, 6 steps):

$$-\left(\left(n\,p\,(1-2\,n\,p)\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+n\,p),\,\frac{1}{2}\,(3+n\,p),\,\text{Sin}[e+f\,x]^2\right]\right.\right.$$
$$\left.\left.\text{Sin}[e+f\,x]\,\left(c\,\left(d\,\text{Sin}[e+f\,x]\right)^p\right)^n\right)\Big/\left(3\,a^2\,f\,(1+n\,p)\,\sqrt{\text{Cos}[e+f\,x]^2}\right)\right)+$$
$$\left(2\,\left(1-n^2\,p^2\right)\,\text{Cos}[e+f\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(2+n\,p),\,\frac{1}{2}\,(4+n\,p),\,\text{Sin}[e+f\,x]^2\right]\right.$$
$$\left.\text{Sin}[e+f\,x]^2\,\left(c\,\left(d\,\text{Sin}[e+f\,x]\right)^p\right)^n\right)\Big/\left(3\,a^2\,f\,(2+n\,p)\,\sqrt{\text{Cos}[e+f\,x]^2}\right)+$$
$$\frac{2\,(1-n\,p)\,\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]\,\left(c\,\left(d\,\text{Sin}[e+f\,x]\right)^p\right)^n}{3\,a^2\,f\,(1+\text{Sin}[e+f\,x])}+$$
$$\frac{\text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]\,\left(c\,\left(d\,\text{Sin}[e+f\,x]\right)^p\right)^n}{3\,f\,(a+a\,\text{Sin}[e+f\,x])^2}$$

Result (type 8, 29 leaves):

$$\int\frac{\left(c\,\left(d\,\text{Sin}[e+f\,x]\right)^p\right)^n}{(a+a\,\text{Sin}[e+f\,x])^2}\,dx$$

Problem 828: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\text{Csc}[e+f\,x])^n}{a+b\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 6, 204 leaves, 7 steps):

$$\frac{1}{\left(a^2-b^2\right)\,d\,f}b\,\text{AppellF1}\left[\frac{1}{2},\,\frac{n}{2},\,1,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\right]$$
$$\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^{1+n}\,\text{Sin}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{n/2}-$$
$$\frac{1}{\left(a^2-b^2\right)\,d\,f}a\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1+n}{2},\,1,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\right]$$
$$\text{Cos}[e+f\,x]\,(d\,\text{Csc}[e+f\,x])^{1+n}\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1+n}{2}}$$

Result (type 6, 7063 leaves):

$$\left((d\,\text{Csc}[e+f\,x])^n\,\text{Tan}[e+f\,x]\,\left(\text{Cot}[e+f\,x]\,\sqrt{1+\text{Tan}[e+f\,x]^2}\right)^n\right.$$
$$\left(\left(a^3\,(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},\,-\frac{n}{2},\,1,\,\frac{3-n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]\right)\Big/\right.$$
$$\left((-1+n)\right.$$
$$\left(-a^2\,(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},\,-\frac{n}{2},\,1,\,\frac{3-n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+\right.$$
$$\left(a^2\,n\,\text{AppellF1}\left[\frac{3-n}{2},\,1-\frac{n}{2},\,1,\,\frac{5-n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+\right.$$
$$2\,\left(-a^2+b^2\right)\,\text{AppellF1}\left[\frac{3-n}{2},\,-\frac{n}{2},\,2,\,\frac{5-n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\right.$$

$$\left.\left.\left.\operatorname{Tan}[e+f x]^2\right]\right) \operatorname{Tan}[e+f x]^2\right) \left(-b^2 \operatorname{Tan}[e+f x]^2 + a^2 \left(1+\operatorname{Tan}[e+f x]^2\right)\right)\right) +$$

$$\frac{1}{b\,(-2+n)\,\left(b^2 \operatorname{Tan}[e+f x]^2 - a^2\left(1+\operatorname{Tan}[e+f x]^2\right)\right)} \operatorname{Tan}[e+f x]$$

$$\left(-\left(\left(a^2\left(a^2-b^2\right)(-4+n)\operatorname{AppellF1}\left[1-\frac{n}{2}, \frac{1}{2}(-1-n), 1, 2-\right.\right.\right.\right.$$

$$\left.\left.\frac{n}{2}, -\operatorname{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right)\operatorname{Tan}[e+f x]^2}{a^2}\right] \sqrt{1+\operatorname{Tan}[e+f x]^2}\right) \Big/$$

$$\left(-a^2(-4+n)\operatorname{AppellF1}\left[1-\frac{n}{2}, \frac{1}{2}(-1-n), 1, 2-\frac{n}{2}, -\operatorname{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right] + \left(-2\left(a^2-b^2\right)\operatorname{AppellF1}\left[2-\frac{n}{2}, \frac{1}{2}(-1-n), 2, 3-\frac{n}{2},\right.\right.$$

$$\left.-\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right] + a^2(1+n)\operatorname{AppellF1}\left[2-\frac{n}{2},\right.$$

$$\left.\left.\left.\frac{1-n}{2}, 1, 3-\frac{n}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right]\right)\operatorname{Tan}[e+f x]^2\right)\right) -$$

$$\operatorname{Hypergeometric2F1}\left[\frac{1}{2}-\frac{n}{2}, 1-\frac{n}{2}, 2-\frac{n}{2}, -\operatorname{Tan}[e+f x]^2\right]\left(1+\operatorname{Tan}[e+f x]^2\right)^{-n/2}$$

$$\left.\left.\left.\left(-b^2\operatorname{Tan}[e+f x]^2 + a^2\left(1+\operatorname{Tan}[e+f x]^2\right)\right)\right)\right)\right) \Big/$$

$$\left(f\,(a+b\operatorname{Sin}[e+f x])\left(\operatorname{Sec}[e+f x]^2\left(\operatorname{Cot}[e+f x]\sqrt{1+\operatorname{Tan}[e+f x]^2}\right)^n\right.\right.$$

$$\left(\left(a^3(-3+n)\operatorname{AppellF1}\left[\frac{1-n}{2}, -\frac{n}{2}, 1, \frac{3-n}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right]\right) \Big/\right.$$

$$\left((-1+n)\right.$$

$$\left(-a^2(-3+n)\operatorname{AppellF1}\left[\frac{1-n}{2}, -\frac{n}{2}, 1, \frac{3-n}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right] +\right.$$

$$\left(a^2\, n\operatorname{AppellF1}\left[\frac{3-n}{2}, 1-\frac{n}{2}, 1, \frac{5-n}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\operatorname{Tan}[e+f x]^2\right] +\right.$$

$$2\left(-a^2+b^2\right)\operatorname{AppellF1}\left[\frac{3-n}{2}, -\frac{n}{2}, 2, \frac{5-n}{2}, -\operatorname{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\right.$$

$$\left.\left.\left.\operatorname{Tan}[e+f x]^2\right]\right)\operatorname{Tan}[e+f x]^2\right)\left(-b^2\operatorname{Tan}[e+f x]^2 + a^2\left(1+\operatorname{Tan}[e+f x]^2\right)\right)\right) +$$

$$\frac{1}{b\,(-2+n)\,\left(b^2\operatorname{Tan}[e+f x]^2 - a^2\left(1+\operatorname{Tan}[e+f x]^2\right)\right)}\operatorname{Tan}[e+f x]$$

$$\left(-\left(\left(a^2\left(a^2-b^2\right)(-4+n)\operatorname{AppellF1}\left[1-\frac{n}{2}, \frac{1}{2}(-1-n), 1, 2-\frac{n}{2}, -\operatorname{Tan}[e+f x]^2,\right.\right.\right.\right.$$

$$\left.\left.\frac{\left(-a^2+b^2\right)\operatorname{Tan}[e+f x]^2}{a^2}\right]\sqrt{1+\operatorname{Tan}[e+f x]^2}\right) \Big/ \left(-a^2(-4+n)\operatorname{AppellF1}\right[$$

$$1-\frac{n}{2},\ \frac{1}{2}\left(-1-n\right),\ 1,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Big(-2\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}\left(-1-n\right),\ 2,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\left(1+n\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1-n}{2},\ 1,$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)\Big)-$$

$$\text{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},\ 1-\frac{n}{2},\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2\Big]\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Big)\Big)+$$

$$n\,\text{Tan}[e+f x]\left(\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)^{-1+n}\left(\frac{\text{Sec}[e+f x]^2}{\sqrt{1+\text{Tan}[e+f x]^2}}-\right.$$

$$\left.\text{Csc}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]^2}\right)$$

$$\Big(\Big(a^3\left(-3+n\right)\text{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\Big/$$

$$\Big(\left(-1+n\right)$$

$$\Big(-a^2\left(-3+n\right)\text{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Big(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$2\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},\ -\frac{n}{2},\ 2,\ \frac{5-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)$$

$$\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Big)+$$

$$\frac{1}{b\left(-2+n\right)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)}\text{Tan}[e+f x]$$

$$\Big(-\Big(\Big(a^2\left(a^2-b^2\right)\left(-4+n\right)\text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}\left(-1-n\right),\ 1,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\sqrt{1+\text{Tan}[e+f x]^2}\Big)\Big/\Big(-a^2\left(-4+n\right)\text{AppellF1}\Big[$$

$$1-\frac{n}{2},\ \frac{1}{2}\left(-1-n\right),\ 1,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Big(-2\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}\left(-1-n\right),\ 2,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\left(1+n\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1-n}{2},\ 1,$$

$$3-\frac{n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\ \mathrm{Tan}[e+f\,x]^2\Big)\Bigg)-$$

$$\mathrm{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},\ 1-\frac{n}{2},\ 2-\frac{n}{2},\ -\mathrm{Tan}[e+f\,x]^2\Big]\ \left(1+\mathrm{Tan}[e+f\,x]^2\right)^{-n/2}$$

$$\left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)\Bigg)\Bigg)+$$

$$\mathrm{Tan}[e+f\,x]\ \left(\mathrm{Cot}[e+f\,x]\ \sqrt{1+\mathrm{Tan}[e+f\,x]^2}\right)^n$$

$$\Bigg(-\Bigg(\Bigg(a^3\ (-3+n)\ \mathrm{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\left(2\,a^2\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]-2\,b^2\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\right)\Bigg)\Bigg/$$

$$\Bigg((-1+n)\ \Bigg(-a^2\ (-3+n)\ \mathrm{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+\Bigg(a^2\,n\,\mathrm{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5-n}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+2\left(-a^2+b^2\right)$$

$$\mathrm{AppellF1}\Big[\frac{3-n}{2},\ -\frac{n}{2},\ 2,\ \frac{5-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)$$

$$\mathrm{Tan}[e+f\,x]^2\Bigg)\ \left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)^2\Bigg)\Bigg)+$$

$$\Bigg(a^3\ (-3+n)\ \Bigg(\frac{1}{3-n}(1-n)\ n\,\mathrm{AppellF1}\Big[1+\frac{1-n}{2},\ 1-\frac{n}{2},\ 1,\ 1+\frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\ \mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]+\frac{1}{3-n}$$

$$2\left(-1+\frac{b^2}{a^2}\right)(1-n)\ \mathrm{AppellF1}\Big[1+\frac{1-n}{2},\ -\frac{n}{2},\ 2,\ 1+\frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\ \mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg/\ \Bigg((-1+n)$$

$$\Bigg(-a^2\ (-3+n)\ \mathrm{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$\Bigg(a^2\,n\,\mathrm{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$2\left(-a^2+b^2\right)\mathrm{AppellF1}\Big[\frac{3-n}{2},\ -\frac{n}{2},\ 2,\ \frac{5-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)$$

$$\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\ \mathrm{Tan}[e+f\,x]^2\Bigg)\ \left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)\Bigg)-$$

$$\Bigg(a^3\ (-3+n)\ \mathrm{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\Bigg(2\ \Bigg(a^2\,n\,\mathrm{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5-n}{2},\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-$$

$$a^2(-3+n)\left(\frac{1}{3-n}(1-n)\,n\,\text{AppellF1}\left[1+\frac{1-n}{2},1-\frac{n}{2},1,1+\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\right.$$

$$\left.\frac{1}{3-n}2\left(-1+\frac{b^2}{a^2}\right)(1-n)\,\text{AppellF1}\left[1+\frac{1-n}{2},-\frac{n}{2},2,1+\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+$$

$$\text{Tan}[e+f x]^2\left(a^2\,n\left(\frac{1}{5-n}2\left(-1+\frac{b^2}{a^2}\right)(3-n)\,\text{AppellF1}\left[1+\frac{3-n}{2},1-\frac{n}{2},2,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\right.\right.$$

$$\left.\text{Tan}[e+f x]-\frac{1}{5-n}2(3-n)\left(1-\frac{n}{2}\right)\text{AppellF1}\left[1+\frac{3-n}{2},2-\frac{n}{2},1,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+$$

$$2\left(-a^2+b^2\right)\left(\frac{1}{5-n}(3-n)\,n\,\text{AppellF1}\left[1+\frac{3-n}{2},1-\frac{n}{2},2,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\right.$$

$$\left.\left.\left.\left.\frac{1}{5-n}4\left(-1+\frac{b^2}{a^2}\right)(3-n)\,\text{AppellF1}\left[1+\frac{3-n}{2},-\frac{n}{2},3,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\right)\right)\Big/$$

$$\left((-1+n)\left(-a^2(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(a^2\,n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)^2\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)-$$

$$\frac{1}{b(-2+n)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}\text{Tan}[e+f x]\left(-2a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+2b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)$$

$$\Bigg(-\Bigg(\Bigg(a^2\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),1,2-\frac{n}{2},-\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Bigg/\Bigg(-a^2(-4+n)\,\text{AppellF1}\Big[$$

$$1-\frac{n}{2},\frac{1}{2}(-1-n),1,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-2\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\frac{1}{2}(-1-n),2,3-\frac{n}{2},-\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1-n}{2},1,$$

$$3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)-$$

$$\text{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},1-\frac{n}{2},2-\frac{n}{2},-\text{Tan}[e+f x]^2\Big]\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+$$

$$\frac{1}{b(-2+n)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)}\text{Sec}[e+f x]^2$$

$$\Bigg(-\Bigg(\Bigg(a^2\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),1,2-\frac{n}{2},-\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Bigg/\Bigg(-a^2(-4+n)\,\text{AppellF1}\Big[$$

$$1-\frac{n}{2},\frac{1}{2}(-1-n),1,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-2\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\frac{1}{2}(-1-n),2,3-\frac{n}{2},-\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1-n}{2},1,$$

$$3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)-$$

$$\text{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},1-\frac{n}{2},2-\frac{n}{2},-\text{Tan}[e+f x]^2\Big]\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)+$$

$$\frac{1}{b(-2+n)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)}\text{Tan}[e+f x]$$

$$\Bigg(-\text{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},1-\frac{n}{2},2-\frac{n}{2},-\text{Tan}[e+f x]^2\Big]$$

$$\left(2a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-2b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)$$

$$\left(1+\text{Tan}[e+f x]^2\right)^{-n/2}-\Bigg(a^2\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),1,$$

$$2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\Bigg/$$

$$\Bigg(\sqrt{1+\text{Tan}[e+f x]^2}\ \Bigg(-a^2\ (-4+n)\ \text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 1,$$

$$2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-2\ \left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 2,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\ (1+n)\ \text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1-n}{2},\ 1,$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\ \text{Tan}[e+f x]^2\Bigg)\Bigg)-$$

$$\Bigg(a^2\ \left(a^2-b^2\right)\ (-4+n)\ \Bigg(-\frac{1}{2-\frac{n}{2}}(-1-n)\ \left(1-\frac{n}{2}\right)\text{AppellF1}\Big[2-\frac{n}{2},\ 1+\frac{1}{2}\ (-1-n),\ 1,$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2\left(2-\frac{n}{2}\right)}2\ \left(-a^2+b^2\right)\ \left(1-\frac{n}{2}\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 2,$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\ \sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Bigg/$$

$$\Bigg(-a^2\ (-4+n)\ \text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 1,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(-2\ \left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 2,\ 3-\frac{n}{2},$$

$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\ (1+n)\ \text{AppellF1}\Big[2-\frac{n}{2},$$

$$\frac{1-n}{2},\ 1,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\ \text{Tan}[e+f x]^2\Bigg)+$$

$$n\,\text{Hypergeometric2F1}\Big[\frac{1}{2}-\frac{n}{2},\ 1-\frac{n}{2},\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2\Big]\ \text{Sec}[e+f x]^2$$

$$\text{Tan}[e+f x]\ \left(1+\text{Tan}[e+f x]^2\right)^{-1-\frac{n}{2}}\ \left(-b^2\,\text{Tan}[e+f x]^2+a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)-$$

$$2\ \left(1-\frac{n}{2}\right)\text{Csc}[e+f x]\ \text{Sec}[e+f x]\ \left(1+\text{Tan}[e+f x]^2\right)^{-n/2}$$

$$\left(-b^2\,\text{Tan}[e+f x]^2+a^2\ \left(1+\text{Tan}[e+f x]^2\right)\right)\ \Bigg(-\text{Hypergeometric2F1}\Big[$$

$$\frac{1}{2}-\frac{n}{2},\ 1-\frac{n}{2},\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2\Big]+\left(1+\text{Tan}[e+f x]^2\right)^{-\frac{1}{2}+\frac{n}{2}}\Bigg)+$$

$$\Bigg(a^2\ \left(a^2-b^2\right)\ (-4+n)\ \text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}\ (-1-n),\ 1,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\,\mathrm{Tan}[e+f\,x]^2}{a^2}\Big]\,\sqrt{1+\mathrm{Tan}[e+f\,x]^2}$$

$$\Bigg(2\,\Bigg(-2\,\left(a^2-b^2\right)\,\mathrm{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,2,\,3-\frac{n}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]+a^2\,\left(1+n\right)\,\mathrm{AppellF1}\Big[2-\frac{n}{2},\,\frac{1-n}{2},\,1,\,3-\frac{n}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]-$$

$$a^2\,\left(-4+n\right)\,\Bigg(-\frac{1}{2-\frac{n}{2}}\left(-1-n\right)\,\left(1-\frac{n}{2}\right)\,\mathrm{AppellF1}\Big[2-\frac{n}{2},\,1+\frac{1}{2}\,\left(-1-n\right),\,1,\,3-\frac{n}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]+$$

$$\frac{1}{2-\frac{n}{2}}2\,\left(-1+\frac{b^2}{a^2}\right)\,\left(1-\frac{n}{2}\right)\,\mathrm{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,2,\,3-\frac{n}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)+$$

$$\mathrm{Tan}[e+f\,x]^2\,\Bigg(-2\,\left(a^2-b^2\right)\,\Bigg(-\frac{1}{3-\frac{n}{2}}\left(-1-n\right)\,\left(2-\frac{n}{2}\right)\,\mathrm{AppellF1}\Big[3-\frac{n}{2},$$

$$1+\frac{1}{2}\,\left(-1-n\right),\,2,\,4-\frac{n}{2},\,-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]+\frac{1}{3-\frac{n}{2}}4\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2-\frac{n}{2}\right)$$

$$\mathrm{AppellF1}\Big[3-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,3,\,4-\frac{n}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)+$$

$$a^2\,\left(1+n\right)\,\Bigg(-\frac{1}{3-\frac{n}{2}}\left(1-n\right)\,\left(2-\frac{n}{2}\right)\,\mathrm{AppellF1}\Big[3-\frac{n}{2},\,1+\frac{1-n}{2},\,1,\,4-\frac{n}{2},$$

$$-\mathrm{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]+$$

$$\frac{1}{3-\frac{n}{2}}2\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2-\frac{n}{2}\right)\,\mathrm{AppellF1}\Big[3-\frac{n}{2},\,\frac{1-n}{2},\,2,\,4-\frac{n}{2},\,-\mathrm{Tan}[e+$$

$$f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]\,\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(-a^2\,\left(-4+n\right)\,\mathrm{AppellF1}\Big[1-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,1,\,2-\frac{n}{2},\,-\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$\left(-2\left(a^2-b^2\right)\text{AppellF1}\left[2-\frac{n}{2},\frac{1}{2}(-1-n),2,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2(1+n)\text{AppellF1}\left[2-\frac{n}{2},\frac{1-n}{2},1,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Tan}[e+f x]^2\right)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 829: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\text{Csc}[e+f x])^n}{(a+b\,\text{Sin}[e+f x])^2}\,dx$$

Optimal (type 6, 321 leaves, 10 steps):

$$-\frac{1}{\left(a^2-b^2\right)^2 d^2 f}b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1+n),2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{2+n}\,\text{Sin}[e+f x]^3\left(\text{Sin}[e+f x]^2\right)^{\frac{1}{2}(-1+n)}-\frac{1}{\left(a^2-b^2\right)^2 d^2 f}a^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1+n}{2},2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{2+n}\,\text{Sin}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{\frac{1+n}{2}}+\frac{1}{\left(a^2-b^2\right)^2 d^2 f}2\,a\,b\,\text{AppellF1}\left[\frac{1}{2},\frac{n}{2},2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{2+n}\left(\text{Sin}[e+f x]^2\right)^{\frac{2+n}{2}}$$

Result (type 6, 8880 leaves):

$$\Bigg(a^2\,(d\,\text{Csc}[e+f x])^n\,\text{Tan}[e+f x]\left(\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)^n\Bigg(-\Bigg(\Bigg(\left(a^2+b^2\right)(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\Bigg)\Bigg/\Bigg((-1+n)\Bigg(-a^2(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\Bigg(a^2\,n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\Bigg)\text{Tan}[e+f x]^2\Bigg)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)\Bigg)+$$

$$\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}2\,a\,b\Bigg(-\Bigg(\Bigg(a\,b\,(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},\right.$$

$$-\frac{n}{2},\,2,\,\frac{3-n}{2},\,-\text{Tan}[e+f x]^2,\,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\Big)\Big/$$

$$\Bigg(\left(-1+n\right)\Bigg(a^2\left(-3+n\right)\text{AppellF1}\Big[\frac{1-n}{2},\,-\frac{n}{2},\,2,\,\frac{3-n}{2},\,-\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},\,1-\frac{n}{2},\,2,\,\frac{5-n}{2},$$

$$-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+4\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},$$

$$-\frac{n}{2},\,3,\,\frac{5-n}{2},\,-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)-$$

$$\Bigg(\left(a^2-b^2\right)\left(-4+n\right)\text{AppellF1}\Big[1-\frac{n}{2},\,\frac{1}{2}\left(-1-n\right),\,2,\,2-\frac{n}{2},\,-\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg(\left(-2+n\right)\Bigg(a^2\left(-4+n\right)\text{AppellF1}\Big[1-\frac{n}{2},\,\frac{1}{2}\left(-1-n\right),\,2,\,2-\frac{n}{2},\,-\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(4\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\left(-1-n\right),\,3,\,3-\frac{n}{2},$$

$$-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2\left(1+n\right)\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1-n}{2},$$

$$2,\,3-\frac{n}{2},\,-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(\left(-a^2+b^2\right)f\left(a+b\,\text{Sin}[e+f x]\right)^2\Bigg(\frac{1}{-a^2+b^2}a^2\,\text{Sec}[e+f x]^2\left(\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)^n$$

$$\Bigg(-\Bigg(\Bigg(\left(a^2+b^2\right)\left(-3+n\right)\text{AppellF1}\Big[\frac{1-n}{2},\,-\frac{n}{2},\,1,\,\frac{3-n}{2},\,-\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Big/\Bigg(\left(-1+n\right)\Bigg(-a^2\left(-3+n\right)\text{AppellF1}\Big[\frac{1-n}{2},\,-\frac{n}{2},\,1,$$

$$\frac{3-n}{2},\,-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},$$

$$1-\frac{n}{2},\,1,\,\frac{5-n}{2},\,-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+2\left(-a^2+b^2\right)$$

$$\text{AppellF1}\Big[\frac{3-n}{2},\,-\frac{n}{2},\,2,\,\frac{5-n}{2},\,-\text{Tan}[e+f x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f x]^2\Bigg)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Bigg)\Bigg)+$$

$$\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}2\,a\,b\Bigg(-\Bigg(\Bigg(a\,b\left(-3+n\right)\text{AppellF1}\Big[$$

$$\frac{1-n}{2},\,-\frac{n}{2},\,2,\,\frac{3-n}{2},\,-\text{Tan}[e+f x]^2,\,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Big/$$

$$\Bigg(\Big(-1+n\Big)\Bigg(a^2\,(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]-\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},1-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]+4\,\big(-a^2+b^2\big)\,\text{AppellF1}\Big[\frac{3-n}{2},-\frac{n}{2},3,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(\big(a^2-b^2\big)\,(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}\big(-1-n\big),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\frac{\big(-a^2+b^2\big)\,\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Tan}[e+f x]\,\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Bigg/$$

$$\Bigg(\Big(-2+n\Big)\Bigg(a^2\,(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}\big(-1-n\big),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]+\Bigg(4\,\big(a^2-b^2\big)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1}{2}\big(-1-n\big),3,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]-a^2\,\big(1+n\big)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1-n}{2},2,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{-a^2+b^2}\,a^2\,n\,\text{Tan}[e+f x]\,\Big(\text{Cot}[e+f x]\,\sqrt{1+\text{Tan}[e+f x]^2}\Big)^{-1+n}\left(\frac{\text{Sec}[e+f x]^2}{\sqrt{1+\text{Tan}[e+f x]^2}}-\text{Csc}[e+f x]^2\,\sqrt{1+\text{Tan}[e+f x]^2}\right)$$

$$\Bigg(-\Bigg(\Bigg(\Big(a^2+b^2\Big)\,\big(-3+n\big)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\frac{\big(-a^2+b^2\big)\,\text{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Bigg/\Bigg(\big(-1+n\big)\Bigg(-a^2\,\big(-3+n\big)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]+\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]+2\,\big(-a^2+b^2\big)\,\text{AppellF1}\Big[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\Big(-1+\frac{b^2}{a^2}\Big)\text{Tan}[e+f x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f x]^2\Big)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\Big)\Big)+$$

$$\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}\,2\,a\,b\,\Bigg(-\Bigg(\Bigg(a\,b\,(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Big/$$

$$\Bigg((-1+n)\Bigg(a^2\,(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},1-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+4\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},-\frac{n}{2},3,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Tan}[e+f x]\,\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg((-2+n)\Bigg(a^2\,(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(4\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\frac{1}{2}(-1-n),3,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2\,(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1-n}{2},2,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{-a^2+b^2}\,a^2\,\text{Tan}[e+f x]\left(\text{Cot}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)^n\Bigg(\Bigg(\Bigg(\left(a^2+b^2\right)(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$

$$\left(2\,a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-2\,b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\Bigg)\Big/$$

$$\Bigg((-1+n)\Bigg(-a^2\,(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+2\left(-a^2+b^2\right)$$

$$\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\Bigg)$$

$$\left.\text{Tan}[e+f x]^2\right)\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2\Bigg)-$$

$$\Bigg(\left(a^2+b^2\right)(-3+n)\left(\frac{1}{3-n}(1-n)\,n\,\text{AppellF1}\left[1+\frac{1-n}{2},1-\frac{n}{2},1,1+\frac{3-n}{2},\right.\right.$$

$$\left.-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2(3-n)}2\left(-a^2+b^2\right)(1-n)\,\text{AppellF1}\left[1+\frac{1-n}{2},-\frac{n}{2},2,1+\frac{3-n}{2},\right.$$

$$\left.\left.-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\Bigg)\Big/$$

$$\Bigg((-1+n)\left(-a^2(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(a^2\,n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},\right.$$

$$\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\Bigg)\left(-b^2\,\text{Tan}[e+f x]^2+\right.$$

$$\left.\left.a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)-\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^3}$$

$$4\,a\,b\left(-2\,a^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+2\,b^2\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)$$

$$\Bigg(-\Bigg(\Bigg(a\,b\,(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},\right.$$

$$\left.-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\Bigg)\Big/$$

$$\Bigg((-1+n)\left(a^2(-3+n)\,\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\right.\right.$$

$$\left.\text{Tan}[e+f x]^2\right]-\left(a^2\,n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+4\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},3,\right.$$

$$\left.\left.\left.\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\Bigg)\Bigg)-$$

$$\Bigg(\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\left[1-\frac{n}{2},\frac{1}{2}(-1-n),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\right.$$

$$\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg((-2+n)\left(a^2(-4+n)\,\text{AppellF1}\left[1-\frac{n}{2},\frac{1}{2}(-1-n),2,2-\frac{n}{2},\right.\right.$$

$$
\begin{aligned}
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\\
&\Bigg(4\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 3,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\\
&\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1-n}{2},\ 2,\\
&3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)\Bigg)+\\
&\Bigg(\left(a^2+b^2\right)(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 1,\ \frac{3-n}{2},\ -\text{Tan}[e+f x]^2,\\
&\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\\
&\Bigg(2\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 1,\ \frac{5-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\\
&2\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},\ -\frac{n}{2},\ 2,\ \frac{5-n}{2},\ -\text{Tan}[e+f x]^2,\\
&\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\\
&a^2(-3+n)\Bigg(\frac{1}{3-n}(1-n)\,n\,\text{AppellF1}\Big[1+\frac{1-n}{2},\ 1-\frac{n}{2},\ 1,\ 1+\frac{3-n}{2},\\
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\\
&\frac{1}{3-n}2\left(-1+\frac{b^2}{a^2}\right)(1-n)\,\text{AppellF1}\Big[1+\frac{1-n}{2},\ -\frac{n}{2},\ 2,\ 1+\frac{3-n}{2},\\
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)+\\
&\text{Tan}[e+f x]^2\Bigg(a^2\,n\Bigg(\frac{1}{5-n}2\left(-1+\frac{b^2}{a^2}\right)(3-n)\,\text{AppellF1}\Big[1+\frac{3-n}{2},\ 1-\frac{n}{2},\\
&2,\ 1+\frac{5-n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\\
&\text{Tan}[e+f x]-\frac{1}{5-n}2(3-n)\left(1-\frac{n}{2}\right)\text{AppellF1}\Big[1+\frac{3-n}{2},\ 2-\frac{n}{2},\ 1,\ 1+\frac{5-n}{2},\\
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)+\\
&2\left(-a^2+b^2\right)\Bigg(\frac{1}{5-n}(3-n)\,n\,\text{AppellF1}\Big[1+\frac{3-n}{2},\ 1-\frac{n}{2},\ 2,\ 1+\frac{5-n}{2},\\
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\\
&\frac{1}{5-n}4\left(-1+\frac{b^2}{a^2}\right)(3-n)\,\text{AppellF1}\Big[1+\frac{3-n}{2},\ -\frac{n}{2},\ 3,\ 1+\frac{5-n}{2},\\
&-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/
\end{aligned}
$$

$$\left(\left(-1+n\right)\left(-a^2\left(-3+n\right)\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},1,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\right.\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+$$

$$\left(a^2 n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},1,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\right.$$

$$2\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\right.$$

$$\left.\left.\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)^2\left(-b^2\,\text{Tan}[e+f x]^2+\right.$$

$$\left.\left.a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)+\frac{1}{\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}$$

$$2\,a\,b\left(-\left(\left(\left(a\,b\left(-3+n\right)\left(\frac{1}{3-n}\left(1-n\right)n\,\text{AppellF1}\left[1+\frac{1-n}{2},1-\frac{n}{2},2,1+\frac{3-n}{2},\right.\right.\right.\right.\right.\right.$$

$$\left.-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2\left(3-n\right)}4\left(-a^2+b^2\right)\left(1-n\right)\text{AppellF1}\left[1+\frac{1-n}{2},-\frac{n}{2},3,1+\frac{3-n}{2},\right.$$

$$\left.\left.\left.-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\Big/$$

$$\left(\left(-1+n\right)\left(a^2\left(-3+n\right)\text{AppellF1}\left[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\right.\right.\right.$$

$$\left.\text{Tan}[e+f x]^2\right]-\left(a^2 n\,\text{AppellF1}\left[\frac{3-n}{2},1-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+4\left(-a^2+b^2\right)\text{AppellF1}\left[\frac{3-n}{2},-\frac{n}{2},3,\right.$$

$$\left.\left.\left.\left.\left.\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)\right)\right)-$$

$$\left(\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\left[1-\frac{n}{2},\frac{1}{2}\left(-1-n\right),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]^2\right)\Big/$$

$$\left(\left(-2+n\right)\sqrt{1+\text{Tan}[e+f x]^2}\left(a^2(-4+n)\,\text{AppellF1}\left[1-\frac{n}{2},\frac{1}{2}\left(-1-n\right),\right.\right.\right.$$

$$\left.2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+$$

$$\left(4\left(a^2-b^2\right)\text{AppellF1}\left[2-\frac{n}{2},\frac{1}{2}\left(-1-n\right),3,3-\frac{n}{2},-\text{Tan}[e+f x]^2,\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]-a^2\left(1+n\right)\text{AppellF1}\left[2-\frac{n}{2},\frac{1-n}{2},2,\right.$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)\Big)-$$

$$\Big(\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 2,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Sec}[e+f x]^2\sqrt{1+\text{Tan}[e+f x]^2}\Big)\Big/$$

$$\Big((-2+n)\Big(a^2(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 2,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+\Big(4\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 3,$$

$$3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(1+n)\,\text{AppellF1}\Big[$$

$$2-\frac{n}{2},\ \frac{1-n}{2},\ 2,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)$$

$$\text{Tan}[e+f x]^2\Big)\Big)-\Big(\left(a^2-b^2\right)(-4+n)\,\text{Tan}[e+f x]$$

$$\Big(-\frac{1}{2-\frac{n}{2}}(-1-n)\left(1-\frac{n}{2}\right)\text{AppellF1}\Big[2-\frac{n}{2},\ 1+\frac{1}{2}(-1-n),\ 2,\ 3-\frac{n}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{a^2\left(2-\frac{n}{2}\right)}4\left(-a^2+b^2\right)\left(1-\frac{n}{2}\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 3,\ 3-\frac{n}{2},$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\Big)$$

$$\sqrt{1+\text{Tan}[e+f x]^2}\Big)\Big/\Big((-2+n)\Big(a^2(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},$$

$$\frac{1}{2}(-1-n),\ 2,\ 2-\frac{n}{2},\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Big(4\left(a^2-b^2\right)\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1}{2}(-1-n),\ 3,\ 3-\frac{n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\ \frac{1-n}{2},\ 2,\ 3-\frac{n}{2},$$

$$-\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)\Big)+\Big(a\,b\,(-3+n)$$

$$\text{AppellF1}\Big[\frac{1-n}{2},\ -\frac{n}{2},\ 2,\ \frac{3-n}{2},\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$

$$\Big(-2\Big(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},\ 1-\frac{n}{2},\ 2,\ \frac{5-n}{2},\ -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+4\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},-\frac{n}{2},3,\frac{5-n}{2},$$

$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$a^2(-3+n)\left(\frac{1}{3-n}(1-n)\,n\,\text{AppellF1}\Big[1+\frac{1-n}{2},1-\frac{n}{2},2,1+\frac{3-n}{2},\right.$$

$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+$$

$$\frac{1}{3-n}4\left(-1+\frac{b^2}{a^2}\right)(1-n)\,\text{AppellF1}\Big[1+\frac{1-n}{2},-\frac{n}{2},3,1+\frac{3-n}{2},$$

$$\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)-$$

$$\text{Tan}[e+f x]^2\left(a^2\,n\left(\frac{1}{5-n}4\left(-1+\frac{b^2}{a^2}\right)(3-n)\,\text{AppellF1}\Big[1+\frac{3-n}{2},\right.\right.$$

$$1-\frac{n}{2},3,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]$$

$$\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{1}{5-n}2(3-n)\left(1-\frac{n}{2}\right)$$

$$\text{AppellF1}\Big[1+\frac{3-n}{2},2-\frac{n}{2},2,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+4\left(-a^2+b^2\right)$$

$$\left(\frac{1}{5-n}(3-n)\,n\,\text{AppellF1}\Big[1+\frac{3-n}{2},1-\frac{n}{2},3,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+\frac{1}{5-n}6\left(-1+\frac{b^2}{a^2}\right)$$

$$(3-n)\,\text{AppellF1}\Big[1+\frac{3-n}{2},-\frac{n}{2},4,1+\frac{5-n}{2},-\text{Tan}[e+f x]^2,$$

$$\left.\left.\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\right)\Bigg)\Bigg/\Bigg((-1+n)$$

$$\left(a^2(-3+n)\,\text{AppellF1}\Big[\frac{1-n}{2},-\frac{n}{2},2,\frac{3-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\right.$$

$$\text{Tan}[e+f x]^2\Big]-\Bigg(a^2\,n\,\text{AppellF1}\Big[\frac{3-n}{2},1-\frac{n}{2},2,\frac{5-n}{2},-\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+4\left(-a^2+b^2\right)\text{AppellF1}\Big[\frac{3-n}{2},-\frac{n}{2},3,$$

$$\left.\frac{5-n}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\right)^2\Bigg)+$$

$$\Bigg(\left(a^2-b^2\right)(-4+n)\,\text{AppellF1}\Big[1-\frac{n}{2},\frac{1}{2}(-1-n),2,2-\frac{n}{2},-\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}$$

$$\Bigg(2\,\Bigg(4\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,3,\,3-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]-a^2\,\left(1+n\right)\,\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1-n}{2},\,2,\,3-\frac{n}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+$$

$$a^2\,\left(-4+n\right)\,\Bigg(-\frac{1}{2-\frac{n}{2}}\left(-1-n\right)\,\left(1-\frac{n}{2}\right)\,\text{AppellF1}\Big[2-\frac{n}{2},\,1+\frac{1}{2}\,\left(-1-n\right),\,2,\,3-\frac{n}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+$$

$$\frac{1}{2-\frac{n}{2}}4\,\left(-1+\frac{b^2}{a^2}\right)\,\left(1-\frac{n}{2}\right)\,\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,3,\,3-\frac{n}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)+$$

$$\text{Tan}[e+f\,x]^2\,\Bigg(4\,\left(a^2-b^2\right)\,\Bigg(-\frac{1}{3-\frac{n}{2}}\left(-1-n\right)\,\left(2-\frac{n}{2}\right)\,\text{AppellF1}\Big[3-\frac{n}{2},$$

$$1+\frac{1}{2}\,\left(-1-n\right),\,3,\,4-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+\frac{1}{3-\frac{n}{2}}6\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2-\frac{n}{2}\right)\,\text{AppellF1}\Big[3-\frac{n}{2},$$

$$\frac{1}{2}\,\left(-1-n\right),\,4,\,4-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)-a^2\,\left(1+n\right)\,\Bigg(-\frac{1}{3-\frac{n}{2}}\left(1-n\right)$$

$$\left(2-\frac{n}{2}\right)\,\text{AppellF1}\Big[3-\frac{n}{2},\,1+\frac{1-n}{2},\,2,\,4-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+\frac{1}{3-\frac{n}{2}}$$

$$4\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2-\frac{n}{2}\right)\,\text{AppellF1}\Big[3-\frac{n}{2},\,\frac{1-n}{2},\,3,\,4-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(-2+n\right)\,\Bigg(a^2\,\left(-4+n\right)\,\text{AppellF1}\Big[1-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,2,\,2-\frac{n}{2},$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]+$$

$$\Bigg(4\,\left(a^2-b^2\right)\,\text{AppellF1}\Big[2-\frac{n}{2},\,\frac{1}{2}\,\left(-1-n\right),\,3,\,3-\frac{n}{2},\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-a^2\,(1+n)\,\text{AppellF1}\Big[2-\frac{n}{2},\frac{1-n}{2},2,3-\frac{n}{2},$$
$$-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\,\text{Tan}[e+f x]^2\Big)^2\Big)\Big)\Big)\Big)\Big)$$

Problem 830: Result more than twice size of optimal antiderivative.

$$\int\frac{(d\,\text{Csc}[e+f x])^n}{(a+b\,\text{Sin}[e+f x])^3}\,dx$$

Optimal (type 6, 432 leaves, 12 steps):

$$-\frac{1}{\left(a^2-b^2\right)^3 d^3 f}3\,a\,b^2\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}(-1+n),3,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{3+n}\,\text{Sin}[e+f x]^4\left(\text{Sin}[e+f x]^2\right)^{\frac{1}{2}(-1+n)}+$$
$$\frac{1}{\left(a^2-b^2\right)^3 d^3 f}b^3\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}(-2+n),3,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{3+n}\,\text{Sin}[e+f x]^3\left(\text{Sin}[e+f x]^2\right)^{n/2}+$$
$$\frac{1}{\left(a^2-b^2\right)^3 d^3 f}3\,a^2\,b\,\text{AppellF1}\Big[\frac{1}{2},\frac{n}{2},3,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{3+n}\,\text{Sin}[e+f x]^3\left(\text{Sin}[e+f x]^2\right)^{n/2}-$$
$$\frac{1}{\left(a^2-b^2\right)^3 d^3 f}a^3\,\text{AppellF1}\Big[\frac{1}{2},\frac{1+n}{2},3,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cos}[e+f x]\,(d\,\text{Csc}[e+f x])^{3+n}\left(\text{Sin}[e+f x]^2\right)^{\frac{3+n}{2}}$$

Result (type 6, 21 714 leaves): Display of huge result suppressed!

Problem 835: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(c\,(d\,\text{Sin}[e+f x])^p\right)^n}{a+b\,\text{Sin}[e+f x]}\,dx$$

Optimal (type 6, 204 leaves, 6 steps):

$$\frac{1}{\left(a^2-b^2\right) f}b\,\text{AppellF1}\Big[\frac{1}{2},-\frac{n\,p}{2},1,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cos}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{-\frac{n p}{2}}\left(c\,(d\,\text{Sin}[e+f x])^p\right)^n-\frac{1}{\left(a^2-b^2\right) f}$$
$$a\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}(1-n\,p),1,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\Big]$$
$$\text{Cot}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{\frac{1}{2}(1-n\,p)}\left(c\,(d\,\text{Sin}[e+f x])^p\right)^n$$

Result (type 6, 7184 leaves):

$$\left(\left(c\,\left(d\,\mathrm{Sin}[e+f\,x]\right)^{p}\right)^{n}\,\mathrm{Tan}[e+f\,x]\,\left(\frac{\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^{2}}}\right)^{n\,p}\right.$$
$$\left(-\frac{1}{2\,b+b\,n\,p}\mathrm{Hypergeometric2F1}\left[\frac{1}{2}+\frac{n\,p}{2},\,1+\frac{n\,p}{2},\,2+\frac{n\,p}{2},\,-\mathrm{Tan}[e+f\,x]^{2}\right]\,\mathrm{Tan}[e+f\,x]\right.$$
$$\left(1+\mathrm{Tan}[e+f\,x]^{2}\right)^{\frac{n\,p}{2}}-\left(a^{2}\,\left(a^{2}-b^{2}\right)\,(4+n\,p)\,\mathrm{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,1,\,2+\frac{n\,p}{2},\right.\right.$$
$$\left.\left.-\mathrm{Tan}[e+f\,x]^{2},\,\frac{\left(-a^{2}+b^{2}\right)\,\mathrm{Tan}[e+f\,x]^{2}}{a^{2}}\right]\,\mathrm{Tan}[e+f\,x]\,\sqrt{1+\mathrm{Tan}[e+f\,x]^{2}}\right)\Big/$$
$$\left(b\,\left(2+n\,p\right)\,\left(a^{2}\,(4+n\,p)\,\mathrm{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,1,\,2+\frac{n\,p}{2},\,-\mathrm{Tan}[e+f\,x]^{2},\right.\right.\right.$$
$$\left.\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]+\left(-2\,\left(a^{2}-b^{2}\right)\,\mathrm{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,3+\right.\right.$$
$$\left.\frac{n\,p}{2},\,-\mathrm{Tan}[e+f\,x]^{2},\,\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]+a^{2}\,\left(1-n\,p\right)\,\mathrm{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\right.$$
$$\left.\left.\left(1+n\,p\right),\,1,\,3+\frac{n\,p}{2},\,-\mathrm{Tan}[e+f\,x]^{2},\,\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]\right)\,\mathrm{Tan}[e+f\,x]^{2}\right)$$
$$\left.\left.\left(b^{2}\,\mathrm{Tan}[e+f\,x]^{2}-a^{2}\,\left(1+\mathrm{Tan}[e+f\,x]^{2}\right)\right)\right)-\left(a^{3}\,\left(3+n\,p\right)\,\mathrm{AppellF1}\left[\frac{1}{2}\,\left(1+n\,p\right),\right.\right.$$
$$\left.\left.\frac{n\,p}{2},\,1,\,\frac{1}{2}\,\left(3+n\,p\right),\,-\mathrm{Tan}[e+f\,x]^{2},\,\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]\right)\Big/$$
$$\left(\left(1+n\,p\right)\,\left(-a^{2}\,\left(3+n\,p\right)\,\mathrm{AppellF1}\left[\frac{1}{2}\,\left(1+n\,p\right),\,\frac{n\,p}{2},\,1,\,\frac{1}{2}\,\left(3+n\,p\right),\,-\mathrm{Tan}[e+f\,x]^{2},\right.\right.\right.$$
$$\left.\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]+\left(2\,\left(a^{2}-b^{2}\right)\,\mathrm{AppellF1}\left[\frac{1}{2}\,\left(3+n\,p\right),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}\right.\right.$$
$$\left.(5+n\,p),\,-\mathrm{Tan}[e+f\,x]^{2},\,\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]+a^{2}\,n\,p\,\mathrm{AppellF1}\left[\frac{1}{2}\right.$$
$$\left.\left.\left(3+n\,p\right),\,1+\frac{n\,p}{2},\,1,\,\frac{1}{2}\,(5+n\,p),\,-\mathrm{Tan}[e+f\,x]^{2},\,\left(-1+\frac{b^{2}}{a^{2}}\right)\,\mathrm{Tan}[e+f\,x]^{2}\right]\right)$$
$$\left.\left.\left.\left.\left.\mathrm{Tan}[e+f\,x]^{2}\right)\,\left(-b^{2}\,\mathrm{Tan}[e+f\,x]^{2}+a^{2}\,\left(1+\mathrm{Tan}[e+f\,x]^{2}\right)\right)\right)\right)\right)\right)\Big/$$
$$\left(f\,\left(a+b\,\mathrm{Sin}[e+f\,x]\right)\,\left(\mathrm{Sec}[e+f\,x]^{2}\,\left(\frac{\mathrm{Tan}[e+f\,x]}{\sqrt{1+\mathrm{Tan}[e+f\,x]^{2}}}\right)^{n\,p}\right.\right.$$
$$\left(-\frac{1}{2\,b+b\,n\,p}\mathrm{Hypergeometric2F1}\left[\frac{1}{2}+\frac{n\,p}{2},\,1+\frac{n\,p}{2},\,2+\frac{n\,p}{2},\,-\mathrm{Tan}[e+f\,x]^{2}\right]\,\mathrm{Tan}[e+f\,x]\right.$$
$$\left(1+\mathrm{Tan}[e+f\,x]^{2}\right)^{\frac{n\,p}{2}}-\left(a^{2}\,\left(a^{2}-b^{2}\right)\,(4+n\,p)\,\mathrm{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,1,\,2+\frac{n\,p}{2},\right.\right.$$
$$\left.\left.-\mathrm{Tan}[e+f\,x]^{2},\,\frac{\left(-a^{2}+b^{2}\right)\,\mathrm{Tan}[e+f\,x]^{2}}{a^{2}}\right]\,\mathrm{Tan}[e+f\,x]\,\sqrt{1+\mathrm{Tan}[e+f\,x]^{2}}\right)\Big/$$

$$\left(b\,(2+n\,p)\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\,(-1+n\,p),1,2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\,\left(a^2-b^2\right)\text{AppellF1}\left[2+\frac{n\,p}{2},\frac{1}{2}\,(-1+n\,p),2,\right.\right.$$
$$\left.3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,(1-n\,p)\,\text{AppellF1}\Big[$$
$$\left.\left.2+\frac{n\,p}{2},\frac{1}{2}\,(1+n\,p),1,3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)$$
$$\left.\left.\text{Tan}[e+f\,x]^2\right)\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)-\left(a^3\,(3+n\,p)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{2}\,(1+n\,p),\frac{n\,p}{2},1,\frac{1}{2}\,(3+n\,p),-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)\Big/$$
$$\left((1+n\,p)\,\left(-a^2\,(3+n\,p)\,\text{AppellF1}\left[\frac{1}{2}\,(1+n\,p),\frac{n\,p}{2},1,\frac{1}{2}\,(3+n\,p),-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(2\,\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2}\,(3+n\,p),\frac{n\,p}{2},2,\frac{1}{2}\,(5+n\,p),\right.\right.$$
$$\left.-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,n\,p\,\text{AppellF1}\left[\frac{1}{2}\,(3+n\,p),1+\frac{n\,p}{2},\right.$$
$$\left.\left.1,\frac{1}{2}\,(5+n\,p),-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)\text{Tan}[e+f\,x]^2\Big)$$
$$\left.\left.\left(-b^2\,\text{Tan}[e+f\,x]^2+a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)\right)+n\,p\,\text{Tan}[e+f\,x]$$
$$\left(\frac{\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)^{-1+n\,p}\left(-\frac{\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2}{\left(1+\text{Tan}[e+f\,x]^2\right)^{3/2}}+\frac{\text{Sec}[e+f\,x]^2}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)$$
$$\left(-\frac{1}{2\,b+b\,n\,p}\text{Hypergeometric2F1}\left[\frac{1}{2}+\frac{n\,p}{2},1+\frac{n\,p}{2},2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2\right]\right.$$
$$\text{Tan}[e+f\,x]\,\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{n\,p}{2}}-$$
$$\left(a^2\,\left(a^2-b^2\right)\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\,(-1+n\,p),1,2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\right.\right.$$
$$\left.\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Tan}[e+f\,x]\,\sqrt{1+\text{Tan}[e+f\,x]^2}\right)\Big/$$
$$\left(b\,(2+n\,p)\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\,(-1+n\,p),1,2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\,\left(a^2-b^2\right)\text{AppellF1}\left[2+\frac{n\,p}{2},\frac{1}{2}\,(-1+n\,p),2,\right.\right.$$
$$\left.3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,(1-n\,p)\,\text{AppellF1}\Big[$$
$$\left.\left.2+\frac{n\,p}{2},\frac{1}{2}\,(1+n\,p),1,3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)$$
$$\left.\left.\text{Tan}[e+f\,x]^2\right)\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)-\left(a^3\,(3+n\,p)\right.$$

$$\text{AppellF1}\left[\frac{1}{2}\left(1+n\,p\right),\frac{n\,p}{2},1,\frac{1}{2}\left(3+n\,p\right),-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\Bigg/$$

$$\left(\left(1+n\,p\right)\left(-a^2\left(3+n\,p\right)\text{AppellF1}\left[\frac{1}{2}\left(1+n\,p\right),\frac{n\,p}{2},1,\frac{1}{2}\left(3+n\,p\right),-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2}\left(3+n\,p\right),\frac{n\,p}{2},2,\frac{1}{2}\left(5+n\,p\right),\right.\right.$$

$$\left.-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,n\,p\,\text{AppellF1}\left[\frac{1}{2}\left(3+n\,p\right),1+\frac{n\,p}{2},\right.$$

$$\left.\left.1,\frac{1}{2}\left(5+n\,p\right),-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)\text{Tan}[e+f\,x]^2\right)$$

$$\left.\left.\left(-b^2\,\text{Tan}[e+f\,x]^2+a^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)\right)+\text{Tan}[e+f\,x]\left(\frac{\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)^{n\,p}$$

$$\left(-\frac{1}{2\,b+b\,n\,p}\text{Hypergeometric2F1}\left[\frac{1}{2}+\frac{n\,p}{2},1+\frac{n\,p}{2},2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2\right]\right.$$

$$\text{Sec}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{n\,p}{2}}-\frac{1}{2\,b+b\,n\,p}$$

$$n\,p\,\text{Hypergeometric2F1}\left[\frac{1}{2}+\frac{n\,p}{2},1+\frac{n\,p}{2},2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2\right]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\left(1+\text{Tan}[e+f\,x]^2\right)^{-1+\frac{n\,p}{2}}+$$

$$\left(a^2\left(a^2-b^2\right)\left(4+n\,p\right)\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\left(-1+n\,p\right),1,2+\frac{n\,p}{2},\right.\right.$$

$$\left.-\text{Tan}[e+f\,x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Tan}[e+f\,x]$$

$$\left.\left(-2\,a^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+2\,b^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\sqrt{1+\text{Tan}[e+f\,x]^2}\right)\Bigg/$$

$$\left(b\left(2+n\,p\right)\left(a^2\left(4+n\,p\right)\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\left(-1+n\,p\right),1,2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\left(a^2-b^2\right)\text{AppellF1}\left[2+\frac{n\,p}{2},\frac{1}{2}\left(-1+n\,p\right),2,\right.\right.$$

$$\left.3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\left(1-n\,p\right)\text{AppellF1}\left[\right.$$

$$\left.\left.2+\frac{n\,p}{2},\frac{1}{2}\left(1+n\,p\right),1,3+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)$$

$$\left.\left.\text{Tan}[e+f\,x]^2\right)\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\right)-$$

$$\left(a^2\left(a^2-b^2\right)\left(4+n\,p\right)\text{AppellF1}\left[1+\frac{n\,p}{2},\frac{1}{2}\left(-1+n\,p\right),1,2+\frac{n\,p}{2},-\text{Tan}[e+f\,x]^2,\right.\right.$$

$$\left.\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]^2\right)\Bigg/$$

$$\left(b\,(2+n\,p)\,\sqrt{1+\text{Tan}[e+f\,x]^2}\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,1,\,2+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\,(a^2-b^2)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,(1-n\,p)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(1+n\,p),\,1,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)\text{Tan}[e+f\,x]^2\right)\,\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)-$$

$$\left(a^2\,(a^2-b^2)\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,1,\,2+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{(-a^2+b^2)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Sec}[e+f\,x]^2\,\sqrt{1+\text{Tan}[e+f\,x]^2}\right)\Big/$$

$$\left(b\,(2+n\,p)\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,1,\,2+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\,(a^2-b^2)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,(1-n\,p)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(1+n\,p),\,1,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]\right)\text{Tan}[e+f\,x]^2\right)\,\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\right)-\left(a^2\,(a^2-b^2)\,(4+n\,p)\,\text{Tan}[e+f\,x]\right.$$

$$\left(\frac{1}{a^2\,\left(2+\frac{n\,p}{2}\right)}2\,(-a^2+b^2)\,\left(1+\frac{n\,p}{2}\right)\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{(-a^2+b^2)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{2+\frac{n\,p}{2}}\left(1+\frac{n\,p}{2}\right)\,(-1+n\,p)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,1+\frac{1}{2}\,(-1+n\,p),\,1,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\frac{(-a^2+b^2)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\left.\sqrt{1+\text{Tan}[e+f\,x]^2}\right)\Big/$$

$$\left(b\,(2+n\,p)\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,1,\,2+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+\left(-2\,(a^2-b^2)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,(-1+n\,p),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\right]+a^2\,(1-n\,p)\,\text{AppellF1}\left[\right.\right.\right.\right.$$

$$2+\frac{n\,p}{2},\ \frac{1}{2}\left(1+n\,p\right),\ 1,\ 3+\frac{n\,p}{2},\ -\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)+$$

$$\Bigg(a^3\left(3+n\,p\right)\text{AppellF1}\Big[\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(3+n\,p\right),\ -\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)$$

$$\text{Tan}[e+f\,x]^2\Big]\left(2\,a^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-2\,b^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\Bigg)\Bigg/$$

$$\Bigg(\left(1+n\,p\right)\Bigg(-a^2\left(3+n\,p\right)\text{AppellF1}\Big[\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(3+n\,p\right),\ -\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+\Bigg(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ \frac{n\,p}{2},\ 2,\ \frac{1}{2}\left(5+n\,p\right),$$

$$-\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),$$

$$1+\frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(5+n\,p\right),\ -\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)\left(-b^2\,\text{Tan}[e+f\,x]^2+a^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)^2\Bigg)-$$

$$\Bigg(a^3\left(3+n\,p\right)\Bigg(\frac{1}{3+n\,p}2\left(-1+\frac{b^2}{a^2}\right)\left(1+n\,p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 2,\ 1+$$

$$\frac{1}{2}\left(3+n\,p\right),\ -\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-$$

$$\frac{1}{3+n\,p}n\,p\left(1+n\,p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n\,p\right),\ 1+\frac{n\,p}{2},\ 1,\ 1+\frac{1}{2}\left(3+n\,p\right),$$

$$-\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(\left(1+n\,p\right)\Bigg(-a^2\left(3+n\,p\right)\text{AppellF1}\Big[\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(3+n\,p\right),\ -\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+\Bigg(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ \frac{n\,p}{2},\ 2,\ \frac{1}{2}\left(5+n\,p\right),$$

$$-\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ 1+\frac{n\,p}{2},$$

$$1,\ \frac{1}{2}\left(5+n\,p\right),\ -\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)\text{Tan}[e+f\,x]^2\Bigg)$$

$$\left(-b^2\,\text{Tan}[e+f\,x]^2+a^2\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)-\frac{1}{2\,b+b\,n\,p}2\left(1+\frac{n\,p}{2}\right)\text{Sec}[e+f\,x]^2$$

$$\left(1+\text{Tan}[e+f\,x]^2\right)^{\frac{n\,p}{2}}\Bigg(-\text{Hypergeometric2F1}\Big[\frac{1}{2}+\frac{n\,p}{2},\ 1+\frac{n\,p}{2},\ 2+\frac{n\,p}{2},\ -\text{Tan}[e+f\,x]^2\Big]+$$

$$\left(1+\text{Tan}[e+f\,x]^2\right)^{-\frac{1}{2}-\frac{n\,p}{2}}\Bigg)+$$

$$\Bigg(a^2\left(a^2-b^2\right)\left(4+n\,p\right)\text{AppellF1}\Big[1+\frac{n\,p}{2},\ \frac{1}{2}\left(-1+n\,p\right),\ 1,\ 2+\frac{n\,p}{2},\ -\text{Tan}[e+f\,x]^2,$$

$$\frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\Big] \text{Tan}[e+f x] \sqrt{1+\text{Tan}[e+f x]^2}$$

$$\Bigg(2 \Bigg(-2 \left(a^2-b^2\right) \text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2} \left(-1+n p\right), 2, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] + a^2 \left(1-n p\right) \text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2} \left(1+n p\right), 1, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big]\Bigg) \text{Sec}[e+f x]^2 \text{Tan}[e+f x] +$$

$$a^2 (4+n p) \Bigg(\frac{1}{2+\frac{n p}{2}} 2 \left(-1+\frac{b^2}{a^2}\right) \left(1+\frac{n p}{2}\right) \text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2} \left(-1+n p\right), 2, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] \text{Sec}[e+f x]^2 \text{Tan}[e+f x] -$$

$$\frac{1}{2+\frac{n p}{2}} \left(1+\frac{n p}{2}\right) \left(-1+n p\right) \text{AppellF1}\Big[2+\frac{n p}{2}, 1+\frac{1}{2} \left(-1+n p\right), 1, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\Bigg) +$$

$$\text{Tan}[e+f x]^2 \Bigg(-2 \left(a^2-b^2\right) \Bigg(\frac{1}{3+\frac{n p}{2}} 4 \left(-1+\frac{b^2}{a^2}\right) \left(2+\frac{n p}{2}\right) \text{AppellF1}\Big[3+\frac{n p}{2}, \frac{1}{2} \left(-1+n p\right), 3, 4+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big]$$

$$\text{Sec}[e+f x]^2 \text{Tan}[e+f x] - \frac{1}{3+\frac{n p}{2}} \left(2+\frac{n p}{2}\right) \left(-1+n p\right)$$

$$\text{AppellF1}\Big[3+\frac{n p}{2}, 1+\frac{1}{2} \left(-1+n p\right), 2, 4+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\Bigg) + a^2 \left(1-n p\right)$$

$$\Bigg(\frac{1}{3+\frac{n p}{2}} 2 \left(-1+\frac{b^2}{a^2}\right) \left(2+\frac{n p}{2}\right) \text{AppellF1}\Big[3+\frac{n p}{2}, \frac{1}{2} \left(1+n p\right), 2, 4+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] \text{Sec}[e+f x]^2 \text{Tan}[e+f x] - \frac{1}{3+\frac{n p}{2}}$$

$$\left(2+\frac{n p}{2}\right) \left(1+n p\right) \text{AppellF1}\Big[3+\frac{n p}{2}, 1+\frac{1}{2} \left(1+n p\right), 1, 4+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\Bigg)\Bigg)\Bigg)\Bigg) \Big/$$

$$\Bigg(b \left(2+n p\right) \Bigg(a^2 (4+n p) \text{AppellF1}\Big[1+\frac{n p}{2}, \frac{1}{2} \left(-1+n p\right), 1, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\Big] + \Bigg(-2 \left(a^2-b^2\right) \text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2} \left(-1+n p\right), 2,$$

$$3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,(1-n\,p)\,\text{AppellF1}\Big[$$

$$2+\frac{n\,p}{2},\,\frac{1}{2}\,(1+n\,p),\,1,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)$$

$$\text{Tan}[e+f\,x]^2\Bigg)^2\,\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,\left(1+\text{Tan}[e+f\,x]^2\right)\right)\Bigg)+$$

$$\Bigg(a^3\,(3+n\,p)\,\text{AppellF1}\Big[\frac{1}{2}\,(1+n\,p),\,\frac{n\,p}{2},\,1,\,\frac{1}{2}\,(3+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]$$

$$\Bigg(2\,\Bigg(2\,\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}\,(3+n\,p),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}\,(5+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}\,(3+n\,p),\,1+\frac{n\,p}{2},\,1,\,\frac{1}{2}\,(5+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-$$

$$a^2\,(3+n\,p)\,\Bigg(\frac{1}{3+n\,p}2\,\left(-1+\frac{b^2}{a^2}\right)\,(1+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}\,(1+n\,p),\,\frac{n\,p}{2},\,2,$$

$$1+\frac{1}{2}\,(3+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+$$

$$f\,x]-\frac{1}{3+n\,p}n\,p\,(1+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}\,(1+n\,p),\,1+\frac{n\,p}{2},\,1,\,1+\frac{1}{2}\,(3+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)+$$

$$\text{Tan}[e+f\,x]^2\,\Bigg(2\,\left(a^2-b^2\right)\,\Bigg(\frac{1}{5+n\,p}4\,\left(-1+\frac{b^2}{a^2}\right)\,(3+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}\,(3+n\,p),$$

$$\frac{n\,p}{2},\,3,\,1+\frac{1}{2}\,(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{5+n\,p}n\,p\,(3+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}\,(3+n\,p),$$

$$1+\frac{n\,p}{2},\,2,\,1+\frac{1}{2}\,(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)+a^2\,n\,p\,\Bigg(\frac{1}{5+n\,p}2\,\left(-1+\frac{b^2}{a^2}\right)\,(3+n\,p)$$

$$\text{AppellF1}\Big[1+\frac{1}{2}\,(3+n\,p),\,1+\frac{n\,p}{2},\,2,\,1+\frac{1}{2}\,(5+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{5+n\,p}$$

$$2\,\left(1+\frac{n\,p}{2}\right)\,(3+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}\,(3+n\,p),\,2+\frac{n\,p}{2},\,1,\,1+\frac{1}{2}\,(5+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left((1+n p)\left(-a^2 (3+n p)\,\text{AppellF1}\left[\frac{1}{2}(1+n p),\frac{n p}{2},1,\frac{1}{2}(3+n p),-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2}(3+n p),\frac{n p}{2},2,\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+a^2 n p\,\text{AppellF1}\left[\frac{1}{2}(3+n p),1+\frac{n p}{2},1,\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)^2\left(-b^2\,\text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\Bigg)\Bigg)$$

Problem 836: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(c\left(d\,\text{Sin}[e+f x]\right)^p\right)^n}{\left(a+b\,\text{Sin}[e+f x]\right)^2}\,dx$$

Optimal (type 6, 322 leaves, 11 steps):

$$\frac{1}{\left(a^2-b^2\right)^2 f}2\,a\,b\,\text{AppellF1}\left[\frac{1}{2},-\frac{n p}{2},2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cos}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{-\frac{n p}{2}}\left(c\left(d\,\text{Sin}[e+f x]\right)^p\right)^n-\frac{1}{\left(a^2-b^2\right)^2 f}b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(-1-n p),2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cos}[e+f x]\,\text{Sin}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{\frac{1}{2}(-1-n p)}\left(c\left(d\,\text{Sin}[e+f x]\right)^p\right)^n-\frac{1}{\left(a^2-b^2\right)^2 f}a^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}(1-n p),2,\frac{3}{2},\text{Cos}[e+f x]^2,-\frac{b^2\,\text{Cos}[e+f x]^2}{a^2-b^2}\right]\text{Cot}[e+f x]\left(\text{Sin}[e+f x]^2\right)^{\frac{1}{2}(1-n p)}\left(c\left(d\,\text{Sin}[e+f x]\right)^p\right)^n$$

Result (type 6, 9486 leaves):

$$\left(a^2\left(c\left(d\,\text{Sin}[e+f x]\right)^p\right)^n\text{Tan}[e+f x]\left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^{n p}\left(\left(2\,a\,b\left(a^2-b^2\right)(4+n p)\,\text{AppellF1}\left[1+\frac{n p}{2},\frac{1}{2}(-1+n p),2,2+\frac{n p}{2},-\text{Tan}[e+f x]^2,\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\right)\Big/\left((2+n p)\left(a^2(4+n p)\,\text{AppellF1}\left[1+\frac{n p}{2},\frac{1}{2}(-1+n p),2,2+\frac{n p}{2},-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(-4\left(a^2-b^2\right)\text{AppellF1}\left[2+\frac{n p}{2},\frac{1}{2}(-1+n p),3,3+\right.\right.\right.\right.\right.$$

$$\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,(1-n\,p)\,\text{AppellF1}\Big[2+\frac{n\,p}{2},\,\frac{1}{2}$$

$$(1+n\,p),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Big)\,\text{Tan}[e+f\,x]^2\Big)\Big)+$$

$$\frac{1}{1+n\,p}(3+n\,p)\Bigg(\Bigg(2\,a^2\,b^2\,\text{AppellF1}\Big[\frac{1}{2}(1+n\,p),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}(3+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\frac{(-a^2+b^2)\,\text{Tan}[e+f\,x]^2}{a^2}\Big]\Bigg)\Bigg/$$

$$\Bigg(a^2\,(3+n\,p)\,\text{AppellF1}\Big[\frac{1}{2}(1+n\,p),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}(3+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]-\Bigg(4\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,\frac{n\,p}{2},\,3,\,\frac{1}{2}(5+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,1+\frac{n\,p}{2},$$

$$2,\,\frac{1}{2}(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)+$$

$$\Bigg((a^2+b^2)\,\text{AppellF1}\Big[\frac{1}{2}(1+n\,p),\,\frac{n\,p}{2},\,1,\,\frac{1}{2}(3+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\frac{(-a^2+b^2)\,\text{Tan}[e+f\,x]^2}{a^2}\Big]\left(-b^2\,\text{Tan}[e+f\,x]^2+a^2\,(1+\text{Tan}[e+f\,x]^2)\right)\Bigg)\Bigg/$$

$$\Bigg(-a^2\,(3+n\,p)\,\text{AppellF1}\Big[\frac{1}{2}(1+n\,p),\,\frac{n\,p}{2},\,1,\,\frac{1}{2}(3+n\,p),\,-\text{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+\Bigg(2\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}(5+n\,p),$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,1+\frac{n\,p}{2},$$

$$1,\,\frac{1}{2}(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg((-a^2+b^2)\,f\,(a+b\,\text{Sin}[e+f\,x])^2\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,(1+\text{Tan}[e+f\,x]^2)\right)^2$$

$$\Bigg(-\frac{1}{(-a^2+b^2)\left(b^2\,\text{Tan}[e+f\,x]^2-a^2\,(1+\text{Tan}[e+f\,x]^2)\right)^3}$$

$$2\,a^2\,\text{Tan}[e+f\,x]\left(-2\,a^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+2\,b^2\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)$$

$$\left(\frac{\text{Tan}[e+f\,x]}{\sqrt{1+\text{Tan}[e+f\,x]^2}}\right)^{n\,p}$$

$$\Bigg(\Bigg(2\,a\,b\,(a^2-b^2)\,(4+n\,p)\,\text{AppellF1}\Big[1+\frac{n\,p}{2},\,\frac{1}{2}(-1+n\,p),\,2,\,2+\frac{n\,p}{2},$$

$$-\mathrm{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]\ \mathrm{Tan}[e+f x]\ \sqrt{1+\mathrm{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg(\left(2+n p\right)\ \Bigg(a^2\ (4+n p)\ \mathrm{AppellF1}\Big[1+\frac{n p}{2},\ \frac{1}{2}\left(-1+n p\right),\ 2,\ 2+\frac{n p}{2},$$

$$-\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-4\left(a^2-b^2\right)\mathrm{AppellF1}\Big[2+\frac{n p}{2},\ \frac{1}{2}\left(-1+n p\right),\ 3,\ 3+\frac{n p}{2},\ -\mathrm{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+a^2\left(1-n p\right)\mathrm{AppellF1}\Big[2+\frac{n p}{2},\ \frac{1}{2}\left(1+n p\right),$$

$$2,\ 3+\frac{n p}{2},\ -\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]\Bigg)\mathrm{Tan}[e+f x]^2\Bigg)\Bigg)+$$

$$\frac{1}{1+n p}\left(3+n p\right)\Bigg(\Bigg(2\,a^2\,b^2\,\mathrm{AppellF1}\Big[\frac{1}{2}\left(1+n p\right),\ \frac{n p}{2},\ 2,\ \frac{1}{2}\left(3+n p\right),$$

$$-\mathrm{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Big/\Bigg(a^2\left(3+n p\right)\mathrm{AppellF1}\Big[$$

$$\frac{1}{2}\left(1+n p\right),\ \frac{n p}{2},\ 2,\ \frac{1}{2}\left(3+n p\right),\ -\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]-$$

$$\Bigg(4\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ \frac{n p}{2},\ 3,\ \frac{1}{2}\left(5+n p\right),\ -\mathrm{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+a^2\,n\,p\,\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ 1+\frac{n p}{2},\ 2,$$

$$\frac{1}{2}\left(5+n p\right),\ -\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]\Bigg)\mathrm{Tan}[e+f x]^2\Bigg)+$$

$$\Bigg(\left(a^2+b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(1+n p\right),\ \frac{n p}{2},\ 1,\ \frac{1}{2}\left(3+n p\right),\ -\mathrm{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f x]^2}{a^2}\Big]\ \left(-b^2\,\mathrm{Tan}[e+f x]^2+a^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)\Bigg)\Big/$$

$$\Bigg(-a^2\left(3+n p\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(1+n p\right),\ \frac{n p}{2},\ 1,\ \frac{1}{2}\left(3+n p\right),$$

$$-\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+$$

$$\Bigg(2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ \frac{n p}{2},\ 2,\ \frac{1}{2}\left(5+n p\right),\ -\mathrm{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]+a^2\,n\,p\,\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ 1+\frac{n p}{2},\ 1,$$

$$\frac{1}{2}\left(5+n p\right),\ -\mathrm{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f x]^2\Big]\Bigg)\mathrm{Tan}[e+f x]^2\Bigg)\Bigg)+$$

$$\frac{1}{\left(-a^2+b^2\right)\left(b^2\,\mathrm{Tan}[e+f x]^2-a^2\left(1+\mathrm{Tan}[e+f x]^2\right)\right)^2}\,a^2\,\mathrm{Sec}[e+f x]^2$$

$$\left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^{n p}$$

$$\left(\left(2 a b \left(a^2-b^2\right) (4+n p) \text{AppellF1}\left[1+\frac{n p}{2}, \frac{1}{2} (-1+n p), 2, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \text{Tan}[e+f x] \sqrt{1+\text{Tan}[e+f x]^2}\right) \Big/ \right.$$

$$\left(\left(2+n p\right) \left(a^2 (4+n p) \text{AppellF1}\left[1+\frac{n p}{2}, \frac{1}{2} (-1+n p), 2, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(-4 \left(a^2-b^2\right) \text{AppellF1}\left[2+\frac{n p}{2}, \frac{1}{2} (-1+n p), 3, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 (1-n p) \text{AppellF1}\left[2+\frac{n p}{2}, \frac{1}{2} (1+n p), 2, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right)\right) +$$

$$\frac{1}{1+n p} (3+n p) \left(\left(2 a^2 b^2 \text{AppellF1}\left[\frac{1}{2} (1+n p), \frac{n p}{2}, 2, \frac{1}{2} (3+n p), -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right]\right) \Big/ \left(a^2 (3+n p) \text{AppellF1}\left[\frac{1}{2} (1+n p), \frac{n p}{2}, 2, \frac{1}{2} (3+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] - \left(4 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2} (3+n p), \frac{n p}{2}, 3, \frac{1}{2} (5+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 n p \text{AppellF1}\left[\frac{1}{2} (3+n p), 1+\frac{n p}{2}, 2, \frac{1}{2} (5+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right) +\right.$$

$$\left(\left(a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2} (1+n p), \frac{n p}{2}, 1, \frac{1}{2} (3+n p), -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \left(-b^2 \text{Tan}[e+f x]^2+a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) \Big/$$

$$\left(-a^2 (3+n p) \text{AppellF1}\left[\frac{1}{2} (1+n p), \frac{n p}{2}, 1, \frac{1}{2} (3+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2} (3+n p), \frac{n p}{2}, 2, \frac{1}{2} (5+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 n p \text{AppellF1}\left[\frac{1}{2} (3+n p), 1+\frac{n p}{2}, 1,\right.\right.\right.$$

$$\frac{1}{2}(5+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Big)\text{Tan}[e+f x]^2\Big)\Big)\Big)+$$

$$\frac{1}{\left(-a^2+b^2\right)\left(b^2\,\text{Tan}[e+f x]^2-a^2\left(1+\text{Tan}[e+f x]^2\right)\right)^2}$$

$$a^2\, n\, p\, \text{Tan}[e+f x]\left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^{-1+n p}$$

$$\left(-\frac{\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]^2}{\left(1+\text{Tan}[e+f x]^2\right)^{3/2}}+\frac{\text{Sec}[e+f x]^2}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)$$

$$\Bigg(\Bigg(2\,a\,b\left(a^2-b^2\right)(4+n p)\,\text{AppellF1}\Big[1+\frac{n p}{2}, \frac{1}{2}(-1+n p), 2, 2+\frac{n p}{2},$$

$$-\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\,\text{Tan}[e+f x]\sqrt{1+\text{Tan}[e+f x]^2}\Bigg)\Big/$$

$$\Bigg((2+n p)\Bigg(a^2(4+n p)\,\text{AppellF1}\Big[1+\frac{n p}{2}, \frac{1}{2}(-1+n p), 2, 2+\frac{n p}{2},$$

$$-\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\Bigg(-4\left(a^2-b^2\right)\text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2}(-1+n p), 3, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2(1-n p)\,\text{AppellF1}\Big[2+\frac{n p}{2}, \frac{1}{2}(1+n p),$$

$$2, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)\Bigg)+$$

$$\frac{1}{1+n p}(3+n p)\Bigg(\Bigg(2\,a^2\,b^2\,\text{AppellF1}\Big[\frac{1}{2}(1+n p), \frac{n p}{2}, 2, \frac{1}{2}(3+n p),$$

$$-\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\Bigg)\Big/\Bigg(a^2(3+n p)\,\text{AppellF1}\Big[$$

$$\frac{1}{2}(1+n p), \frac{n p}{2}, 2, \frac{1}{2}(3+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-$$

$$\Bigg(4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}(3+n p), \frac{n p}{2}, 3, \frac{1}{2}(5+n p), -\text{Tan}[e+f x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}(3+n p), 1+\frac{n p}{2}, 2,$$

$$\frac{1}{2}(5+n p), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\Bigg)\text{Tan}[e+f x]^2\Bigg)+$$

$$\left(\left(a^2+b^2\right) \text{AppellF1}\left[\frac{1}{2}\left(1+n p\right), \frac{n p}{2}, 1, \frac{1}{2}\left(3+n p\right), -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \left(-b^2 \text{Tan}[e+f x]^2+a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)\right) \Big/ \left(-a^2 \left(3+n p\right) \text{AppellF1}\left[\frac{1}{2}\left(1+n p\right), \frac{n p}{2}, 1, \frac{1}{2}\left(3+n p\right), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(2 \left(a^2-b^2\right) \text{AppellF1}\left[\frac{1}{2}\left(3+n p\right), \frac{n p}{2}, 2, \frac{1}{2}\left(5+n p\right), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 n p \,\text{AppellF1}\left[\frac{1}{2}\left(3+n p\right), 1+\frac{n p}{2}, 1, \frac{1}{2}\left(5+n p\right), -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right)\right) +$$

$$\frac{1}{\left(-a^2+b^2\right) \left(b^2 \text{Tan}[e+f x]^2-a^2 \left(1+\text{Tan}[e+f x]^2\right)\right)^2} a^2 \,\text{Tan}[e+f x] \left(\frac{\text{Tan}[e+f x]}{\sqrt{1+\text{Tan}[e+f x]^2}}\right)^{n p}$$

$$\left(\left(2 a b \left(a^2-b^2\right) (4+n p) \text{AppellF1}\left[1+\frac{n p}{2}, \frac{1}{2}\left(-1+n p\right), 2, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \text{Sec}[e+f x]^2 \,\text{Tan}[e+f x]^2\right) \Big/ \left(\left(2+n p\right) \sqrt{1+\text{Tan}[e+f x]^2} \left(a^2 (4+n p) \text{AppellF1}\left[1+\frac{n p}{2}, \frac{1}{2}\left(-1+n p\right), 2, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + \left(-4 \left(a^2-b^2\right) \text{AppellF1}\left[2+\frac{n p}{2}, \frac{1}{2}\left(-1+n p\right), 3, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right] + a^2 \left(1-n p\right) \text{AppellF1}\left[2+\frac{n p}{2}, \frac{1}{2}\left(1+n p\right), 2, 3+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \left(-1+\frac{b^2}{a^2}\right) \text{Tan}[e+f x]^2\right]\right) \text{Tan}[e+f x]^2\right)\right) +$$

$$\left(2 a b \left(a^2-b^2\right) (4+n p) \text{AppellF1}\left[1+\frac{n p}{2}, \frac{1}{2}\left(-1+n p\right), 2, 2+\frac{n p}{2}, -\text{Tan}[e+f x]^2, \frac{\left(-a^2+b^2\right) \text{Tan}[e+f x]^2}{a^2}\right] \text{Sec}[e+f x]^2 \sqrt{1+\text{Tan}[e+f x]^2}\right) \Big/$$

$$\left(\left(2+n\,p\right)\left(a^2\,\left(4+n\,p\right)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,2+\frac{n\,p}{2},\right.\right.\right.$$
$$\left.-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+$$
$$\left(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+a^2\,\left(1-n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(1+n\,p\right),\right.$$
$$\left.\left.\left.\left.2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]\right)\,\text{Tan}[e+f\,x]^2\right)\right)+$$
$$\left(2\,a\,b\,\left(a^2-b^2\right)\,\left(4+n\,p\right)\,\text{Tan}[e+f\,x]\,\left(\frac{1}{a^2\,\left(2+\frac{n\,p}{2}\right)}4\,\left(-a^2+b^2\right)\,\left(1+\frac{n\,p}{2}\right)\right.\right.$$
$$\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.$$
$$\left.\frac{\left(-a^2+b^2\right)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{2+\frac{n\,p}{2}}$$
$$\left(1+\frac{n\,p}{2}\right)\,\left(-1+n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,1+\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.$$
$$\left.\left.\left.\frac{\left(-a^2+b^2\right)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\,\sqrt{1+\text{Tan}[e+f\,x]^2}\right)\Big/$$
$$\left(\left(2+n\,p\right)\left(a^2\,\left(4+n\,p\right)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,2+\frac{n\,p}{2},\right.\right.\right.$$
$$\left.-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+$$
$$\left(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+a^2\,\left(1-n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(1+n\,p\right),\right.$$
$$\left.\left.\left.\left.2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]\right)\,\text{Tan}[e+f\,x]^2\right)\right)-$$
$$\left(2\,a\,b\,\left(a^2-b^2\right)\,\left(4+n\,p\right)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,2+\frac{n\,p}{2},\right.\right.$$
$$\left.-\text{Tan}[e+f\,x]^2,\,\frac{\left(-a^2+b^2\right)\,\text{Tan}[e+f\,x]^2}{a^2}\right]\,\text{Tan}[e+f\,x]\,\sqrt{1+\text{Tan}[e+f\,x]^2}$$
$$\left(2\,\left(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]+a^2\,\left(1-n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(1+n\,p\right),\,2,\right.$$
$$\left.\left.3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\right]\right)\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]+$$

$$a^2\,(4+n\,p)\,\left(\frac{1}{2+\frac{n\,p}{2}}4\,\left(-1+\frac{b^2}{a^2}\right)\,\left(1+\frac{n\,p}{2}\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\right.\right.$$

$$3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,-$$

$$\frac{1}{2+\frac{n\,p}{2}}\left(1+\frac{n\,p}{2}\right)\,\left(-1+n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,1+\frac{1}{2}\,\left(-1+n\,p\right),\,2,\right.$$

$$\left.3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\,+$$

$$\text{Tan}[e+f\,x]^2\,\left(-4\,\left(a^2-b^2\right)\,\left(\frac{1}{3+\frac{n\,p}{2}}6\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2+\frac{n\,p}{2}\right)\,\text{AppellF1}\left[3+\frac{n\,p}{2},\right.\right.\right.$$

$$\frac{1}{2}\,\left(-1+n\,p\right),\,4,\,4+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]$$

$$\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,-\,\frac{1}{3+\frac{n\,p}{2}}\left(2+\frac{n\,p}{2}\right)\,\left(-1+n\,p\right)$$

$$\text{AppellF1}\left[3+\frac{n\,p}{2},\,1+\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,4+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.$$

$$\left.\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\,+\,a^2\,\left(1-n\,p\right)$$

$$\left(\frac{1}{3+\frac{n\,p}{2}}4\,\left(-1+\frac{b^2}{a^2}\right)\,\left(2+\frac{n\,p}{2}\right)\,\text{AppellF1}\left[3+\frac{n\,p}{2},\,\frac{1}{2}\,\left(1+n\,p\right),\,3,\,4+\frac{n\,p}{2},\right.\right.$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\,-$$

$$\frac{1}{3+\frac{n\,p}{2}}\left(2+\frac{n\,p}{2}\right)\,\left(1+n\,p\right)\,\text{AppellF1}\left[3+\frac{n\,p}{2},\,1+\frac{1}{2}\,\left(1+n\,p\right),\,2,\,4+\frac{n\,p}{2},\right.$$

$$\left.\left.\left.\left.\left.-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,\text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(2+n\,p\right)\,\left(a^2\,(4+n\,p)\,\text{AppellF1}\left[1+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,2,\,2+\frac{n\,p}{2},\right.\right.\right.$$

$$-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,+$$

$$\left(-4\,\left(a^2-b^2\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(-1+n\,p\right),\,3,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\right.\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\,+\,a^2\,\left(1-n\,p\right)\,\text{AppellF1}\left[2+\frac{n\,p}{2},\,\frac{1}{2}\,\left(1+n\,p\right),\right.$$

$$\left.\left.2,\,3+\frac{n\,p}{2},\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\,\text{Tan}[e+f\,x]^2\Big]\right)\,\text{Tan}[e+f\,x]^2\right)^2\right)\,+$$

$$\frac{1}{1+n\,p}\,\left(3+n\,p\right)\,\left(\left(\left(a^2+b^2\right)\,\text{AppellF1}\left[\frac{1}{2}\,\left(1+n\,p\right),\,\frac{n\,p}{2},\,1,\,\frac{1}{2}\,\left(3+n\,p\right),\right.\right.\right.$$

$$-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \left(2 a^2 \text{Sec}[e+f x]^2 \text{Tan}[e+f x]-\right.$$

$$\left.\left.2 b^2 \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\right)\right)\Big/\left(-a^2\left(3+n p\right)\text{AppellF1}\Big[\frac{1}{2}\left(1+n p\right),\right.$$

$$\frac{n p}{2},\ 1,\ \frac{1}{2}\left(3+n p\right),\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+$$

$$\left(2\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ \frac{n p}{2},\ 2,\ \frac{1}{2}\left(5+n p\right),\ -\text{Tan}[e+f x]^2,\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2 n p\,\text{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ 1+\frac{n p}{2},\ 1,$$

$$\left.\frac{1}{2}\left(5+n p\right),\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\right)\text{Tan}[e+f x]^2\Big)+$$

$$\left(2 a^2 b^2\left(\frac{1}{a^2\left(3+n p\right)}4\left(-a^2+b^2\right)\left(1+n p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n p\right),\ \frac{n p}{2},\right.\right.$$

$$3,\ 1+\frac{1}{2}\left(3+n p\right),\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2$$

$$\text{Tan}[e+f x]-\frac{1}{3+n p}n p\left(1+n p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n p\right),\ 1+\frac{n p}{2},$$

$$2,\ 1+\frac{1}{2}\left(3+n p\right),\ -\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]$$

$$\left.\left.\text{Sec}[e+f x]^2 \text{Tan}[e+f x]\right)\right)\Big/\left(a^2\left(3+n p\right)\text{AppellF1}\Big[\frac{1}{2}\left(1+n p\right),\right.$$

$$\frac{n p}{2},\ 2,\ \frac{1}{2}\left(3+n p\right),\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]-$$

$$\left(4\left(a^2-b^2\right)\text{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ \frac{n p}{2},\ 3,\ \frac{1}{2}\left(5+n p\right),\ -\text{Tan}[e+f x]^2,\right.$$

$$\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]+a^2 n p\,\text{AppellF1}\Big[\frac{1}{2}\left(3+n p\right),\ 1+\frac{n p}{2},\ 2,$$

$$\left.\frac{1}{2}\left(5+n p\right),\ -\text{Tan}[e+f x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\Big]\right)\text{Tan}[e+f x]^2\Big)+$$

$$\left(\left(a^2+b^2\right)\left(\frac{1}{a^2\left(3+n p\right)}2\left(-a^2+b^2\right)\left(1+n p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n p\right),\right.\right.$$

$$\frac{n p}{2},\ 2,\ 1+\frac{1}{2}\left(3+n p\right),\ -\text{Tan}[e+f x]^2,$$

$$\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2 \text{Tan}[e+f x]-\frac{1}{3+n p}$$

$$n p\left(1+n p\right)\text{AppellF1}\Big[1+\frac{1}{2}\left(1+n p\right),\ 1+\frac{n p}{2},\ 1,\ 1+\frac{1}{2}\left(3+n p\right),$$

$$\left.-\text{Tan}[e+f x]^2,\ \frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\Big]\ \text{Sec}[e+f x]^2 \text{Tan}[e+f x]\right)$$

$$\left.\left(-b^2 \text{Tan}[e+f x]^2+a^2\left(1+\text{Tan}[e+f x]^2\right)\right)\right)\Big/\left(-a^2\left(3+n p\right)\text{AppellF1}\Big[\right.$$

$$\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(3+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+$$

$$\Bigg(2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ \frac{n\,p}{2},\ 2,\ \frac{1}{2}\left(5+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ 1+\frac{n\,p}{2},\ 1,$$

$$\frac{1}{2}\left(5+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\mathrm{Tan}[e+f\,x]^2\Bigg)-$$

$$\Bigg(\left(a^2+b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(1+n\,p\right),\ \frac{n\,p}{2},\ 1,\ \frac{1}{2}\left(3+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\frac{\left(-a^2+b^2\right)\mathrm{Tan}[e+f\,x]^2}{a^2}\Big]\left(-b^2\,\mathrm{Tan}[e+f\,x]^2+a^2\left(1+\mathrm{Tan}[e+f\,x]^2\right)\right)$$

$$\Bigg(2\Bigg(2\left(a^2-b^2\right)\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ \frac{n\,p}{2},\ 2,\ \frac{1}{2}\left(5+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,$$

$$\left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]+a^2\,n\,p\,\mathrm{AppellF1}\Big[\frac{1}{2}\left(3+n\,p\right),\ 1+\frac{n\,p}{2},\ 1,$$

$$\frac{1}{2}\left(5+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\Bigg)\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[$$

$$e+f\,x]-a^2\left(3+n\,p\right)\Bigg(\frac{1}{3+n\,p}2\left(-1+\frac{b^2}{a^2}\right)\left(1+n\,p\right)\mathrm{AppellF1}\Big[1+\frac{1}{2}\left(1+n\,p\right),$$

$$\frac{n\,p}{2},\ 2,\ 1+\frac{1}{2}\left(3+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]-\frac{1}{3+n\,p}n\,p\left(1+n\,p\right)\mathrm{AppellF1}\Big[1+\frac{1}{2}\left(1+n\,p\right),$$

$$1+\frac{n\,p}{2},\ 1,\ 1+\frac{1}{2}\left(3+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)+\mathrm{Tan}[e+f\,x]^2\Bigg(2\left(a^2-b^2\right)\Bigg(\frac{1}{5+n\,p}$$

$$4\left(-1+\frac{b^2}{a^2}\right)\left(3+n\,p\right)\mathrm{AppellF1}\Big[1+\frac{1}{2}\left(3+n\,p\right),\ \frac{n\,p}{2},\ 3,\ 1+\frac{1}{2}\left(5+n\,p\right),$$

$$-\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]-$$

$$\frac{1}{5+n\,p}n\,p\left(3+n\,p\right)\mathrm{AppellF1}\Big[1+\frac{1}{2}\left(3+n\,p\right),\ 1+\frac{n\,p}{2},\ 2,\ 1+\frac{1}{2}\left(5+n\,p\right),$$

$$-\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]\Bigg)+$$

$$a^2\,n\,p\Bigg(\frac{1}{5+n\,p}2\left(-1+\frac{b^2}{a^2}\right)\left(3+n\,p\right)\mathrm{AppellF1}\Big[1+\frac{1}{2}\left(3+n\,p\right),$$

$$1+\frac{n\,p}{2},\ 2,\ 1+\frac{1}{2}\left(5+n\,p\right),\ -\mathrm{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\mathrm{Tan}[e+f\,x]^2\Big]$$

$$\mathrm{Sec}[e+f\,x]^2\,\mathrm{Tan}[e+f\,x]-\frac{1}{5+n\,p}2\left(1+\frac{n\,p}{2}\right)\left(3+n\,p\right)$$

$$\text{AppellF1}\left[1+\frac{1}{2}\left(3+n p\right),2+\frac{n p}{2},1,1+\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\right.$$
$$\left.\left.\left.\left.\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)\right)\right)\right)\Big/$$
$$\left(-a^2\left(3+n p\right)\text{AppellF1}\left[\frac{1}{2}\left(1+n p\right),\frac{n p}{2},1,\frac{1}{2}\left(3+n p\right),-\text{Tan}[e+f x]^2,\right.\right.$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+\left(2\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2}\left(3+n p\right),\frac{n p}{2},\right.\right.$$
$$\left.2,\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+$$
$$a^2\,n\,p\,\text{AppellF1}\left[\frac{1}{2}\left(3+n p\right),1+\frac{n p}{2},1,\frac{1}{2}(5+n p),\right.$$
$$\left.\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Tan}[e+f x]^2\right)^2-$$
$$\left(2\,a^2\,b^2\,\text{AppellF1}\left[\frac{1}{2}\left(1+n p\right),\frac{n p}{2},2,\frac{1}{2}\left(3+n p\right),-\text{Tan}[e+f x]^2,\right.\right.$$
$$\left.\frac{\left(-a^2+b^2\right)\text{Tan}[e+f x]^2}{a^2}\right]\left(-2\left(4\left(a^2-b^2\right)\text{AppellF1}\left[\frac{1}{2}\left(3+n p\right),\frac{n p}{2},\right.\right.\right.$$
$$\left.3,\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]+$$
$$a^2\,n\,p\,\text{AppellF1}\left[\frac{1}{2}\left(3+n p\right),1+\frac{n p}{2},2,\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,\right.$$
$$\left.\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\right)\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]+a^2\left(3+n p\right)\left(\frac{1}{3+n p}\right.$$
$$4\left(-1+\frac{b^2}{a^2}\right)\left(1+n p\right)\text{AppellF1}\left[1+\frac{1}{2}\left(1+n p\right),\frac{n p}{2},3,1+\frac{1}{2}\left(3+n p\right),\right.$$
$$\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-$$
$$\frac{1}{3+n p}n\,p\left(1+n p\right)\text{AppellF1}\left[1+\frac{1}{2}\left(1+n p\right),1+\frac{n p}{2},2,1+\frac{1}{2}\left(3+n p\right),\right.$$
$$\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)-$$
$$\text{Tan}[e+f x]^2\left(4\left(a^2-b^2\right)\left(\frac{1}{5+n p}6\left(-1+\frac{b^2}{a^2}\right)\left(3+n p\right)\text{AppellF1}\right[\right.\right.$$
$$1+\frac{1}{2}\left(3+n p\right),\frac{n p}{2},4,1+\frac{1}{2}(5+n p),-\text{Tan}[e+f x]^2,$$
$$\left.\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]-\frac{1}{5+n p}$$
$$n\,p\left(3+n p\right)\text{AppellF1}\left[1+\frac{1}{2}\left(3+n p\right),1+\frac{n p}{2},3,1+\frac{1}{2}(5+n p),\right.$$
$$\left.\left.-\text{Tan}[e+f x]^2,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f x]^2\right]\text{Sec}[e+f x]^2\,\text{Tan}[e+f x]\right)+$$

$$a^2\,n\,p\left(\frac{1}{5+n\,p}4\left(-1+\frac{b^2}{a^2}\right)(3+n\,p)\,\text{AppellF1}\Big[1+\frac{1}{2}(3+n\,p),\ 1+\frac{n\,p}{2},\,3,\,1+\frac{1}{2}(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]-\frac{1}{5+n\,p}2\left(1+\frac{n\,p}{2}\right)(3+n\,p)\ \text{AppellF1}\Big[1+\frac{1}{2}(3+n\,p),\,2+\frac{n\,p}{2},\,2,\,1+\frac{1}{2}(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\ \text{Sec}[e+f\,x]^2\,\text{Tan}[e+f\,x]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(a^2\,(3+n\,p)\,\text{AppellF1}\Big[\frac{1}{2}(1+n\,p),\,\frac{n\,p}{2},\,2,\,\frac{1}{2}(3+n\,p),\,-\text{Tan}[e+f\,x]^2,\ \left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]-\Bigg(4\,(a^2-b^2)\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,\frac{n\,p}{2},\ 3,\,\frac{1}{2}(5+n\,p),\,-\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]+ a^2\,n\,p\,\text{AppellF1}\Big[\frac{1}{2}(3+n\,p),\,1+\frac{n\,p}{2},\,2,\,\frac{1}{2}(5+n\,p),\ -\text{Tan}[e+f\,x]^2,\,\left(-1+\frac{b^2}{a^2}\right)\text{Tan}[e+f\,x]^2\Big]\Bigg)\,\text{Tan}[e+f\,x]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Problem 837: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(c\,(d\,\text{Sin}[e+f\,x])^p\right)^n}{(a+b\,\text{Sin}[e+f\,x])^3}\,dx$$

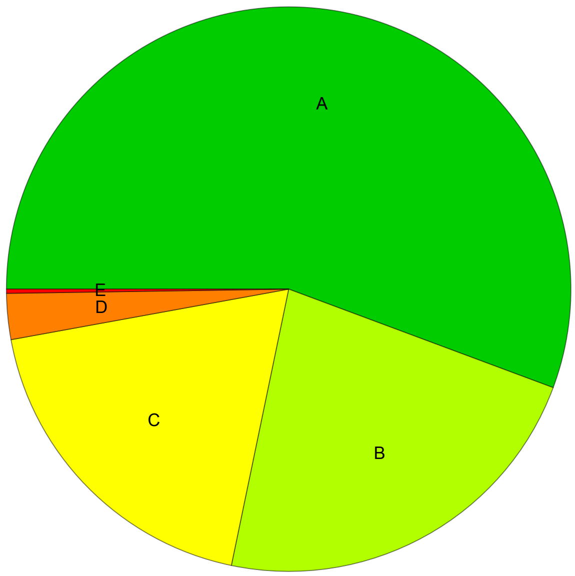
Optimal (type 6, 428 leaves, 14 steps):

$$\frac{1}{(a^2-b^2)^3\,f}3\,a^2\,b\,\text{AppellF1}\Big[\frac{1}{2},\,-\frac{n\,p}{2},\,3,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Cos}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{-\frac{n\,p}{2}}\left(c\,(d\,\text{Sin}[e+f\,x])^p\right)^n+\frac{1}{(a^2-b^2)^3\,f}\ b^3\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}(-2-n\,p),\,3,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Cos}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{-\frac{n\,p}{2}}\left(c\,(d\,\text{Sin}[e+f\,x])^p\right)^n-\frac{1}{(a^2-b^2)^3\,f}\ 3\,a\,b^2\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}(-1-n\,p),\,3,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Cos}[e+f\,x]\,\text{Sin}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1}{2}(-1-n\,p)}\left(c\,(d\,\text{Sin}[e+f\,x])^p\right)^n-\ \frac{1}{(a^2-b^2)^3\,f}a^3\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{1}{2}(1-n\,p),\,3,\,\frac{3}{2},\,\text{Cos}[e+f\,x]^2,\,-\frac{b^2\,\text{Cos}[e+f\,x]^2}{a^2-b^2}\Big]\ \text{Cot}[e+f\,x]\,\left(\text{Sin}[e+f\,x]^2\right)^{\frac{1}{2}(1-n\,p)}\left(c\,(d\,\text{Sin}[e+f\,x])^p\right)^n$$

Result (type 6, 22 711 leaves) : Display of huge result suppressed!

Summary of Integration Test Results

837 integration problems



A - 466 optimal antiderivatives

B - 189 more than twice size of optimal antiderivatives

C - 158 unnecessarily complex antiderivatives

D - 22 unable to integrate problems

E - 2 integration timeouts