Mathematica 11.3 Integration Test Results

Test results for the 950 problems in "4.7.7 Trig functions.m"

Problem 31: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 213 leaves, 8 steps):

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

Result (type 4, 172 leaves):

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

Problem 34: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\sqrt{b-\frac{a}{x^2}}\;\text{Sin}[x]}{\sqrt{a-b\,x^2}}\,dx$$

Optimal (type 4, 28 leaves, 3 steps):

$$\frac{\sqrt{b-\frac{a}{x^2}}\;x\,\text{SinIntegral}[x]}{\sqrt{a-b\,x^2}}$$

Result (type 4, 46 leaves):

$$\frac{i \sqrt{b-\frac{a}{x^2}}\, x\, \left(\text{ExpIntegralEi}[-i x]-\text{ExpIntegralEi}[i x]\right)}{2 \sqrt{a-b x^2}}$$

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

$$\int \frac{1}{x\, (1+\text{Sin}[\text{Log}[x]])}\, dx$$

Optimal (type 3, 12 leaves, 2 steps):

$$-\frac{\text{Cos}[\text{Log}[x]]}{1+\text{Sin}[\text{Log}[x]]}$$

Result (type 3, 26 leaves):

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

Problem 36: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sin}\left[\frac{a+b x}{c+d x}\right] dx$$

Optimal (type 4, 100 leaves, 5 steps):

$$\frac{(b c-a d)\, \text{Cos}\left[\frac{b}{d}\right]\, \text{CosIntegral}\left[\frac{b c-a d}{d\, (c+d x)}\right]}{d^2}+\frac{(c+d x)\, \text{Sin}\left[\frac{a+b x}{c+d x}\right]}{d}+\frac{(b c-a d)\, \text{Sin}\left[\frac{b}{d}\right]\, \text{SinIntegral}\left[\frac{b c-a d}{d\, (c+d x)}\right]}{d^2}$$

Result (type 4, 918 leaves):

$$\frac{1}{2\,d}\left(b\,c^2-a\,c\,d\right)\left(\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}-\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}\right)-$$

$$\frac{1}{2\,d}\left(-b\,c^2+a\,c\,d\right)\left(\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}-\right.$$

$$\left.\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}\right)-\frac{1}{2\,d}\,i\,\left(b\,c^2-a\,c\,d\right)$$

$$\left(\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}-\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}\right)-$$

$$\frac{1}{2\,d}\,i\,\left(-b\,c^2+a\,c\,d\right)$$

$$\left(\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}-\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,\left(b\,c-a\,d\right)}\right)+$$

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

$$\left(-b\,c+a\,d\right)\left(\text{Cos}\left[\frac{b}{d}\right]\,\text{CosIntegral}\left[\frac{-b\,c+a\,d}{d\,\left(c+d\,x\right)}\right]-\text{Sin}\left[\frac{b}{d}\right]\,\text{SinIntegral}\left[\frac{-b\,c+a\,d}{d\,\left(c+d\,x\right)}\right]\right)$$

Problem 37: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{\left(b\,c-a\,d\right)\,\text{CosIntegral}\left[\frac{2\,(b\,c-a\,d)}{d\,(c+d\,x)}\right]\,\text{Sin}\left[\frac{2\,b}{d}\right]}{d^2}+$$

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

Result (type 4, 401 leaves) :

$$-\frac{1}{d}\left(-b c^2+a c d\right)\left(\frac{e^{-\frac{2 i (2 b c+a d+b d x)}{d (c+d x)}}\left(-1+e^{\frac{4 i b}{d}}\right)\left(-e^{\frac{4 i a}{c+d x}}+e^{\frac{4 i b c}{d (c+d x)}}\right)}{8 (b c-a d)}-\frac{e^{-\frac{2 i (2 b c+a d+b d x)}{d (c+d x)}}\left(1+e^{\frac{4 i b}{d}}\right)\left(e^{\frac{4 i a}{c+d x}}+e^{\frac{4 i b c}{d (c+d x)}}\right)}{8 (b c-a d)}\right)-$$

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

$$\left(d^2 x+2 b c \operatorname{CosIntegral}\left[\frac{2 (-b c+a d)}{d (c+d x)}\right] \operatorname{Sin}\left[\frac{2 b}{d}\right]-2 a d \operatorname{CosIntegral}\left[\frac{2 (-b c+a d)}{d (c+d x)}\right] \operatorname{Sin}\left[\frac{2 b}{d}\right]+\right.$$

$$\left.2 b c \operatorname{Cos}\left[\frac{2 b}{d}\right] \operatorname{SinIntegral}\left[\frac{2 (-b c+a d)}{d (c+d x)}\right]-2 a d \operatorname{Cos}\left[\frac{2 b}{d}\right] \operatorname{SinIntegral}\left[\frac{2 (-b c+a d)}{d (c+d x)}\right]\right)$$

Problem 38: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \operatorname{Sin}\left[\frac{a+b x}{c+d x}\right]^3 dx$$

Optimal (type 4, 194 leaves, 9 steps) :

$$\frac{3 (b c-a d) \operatorname{Cos}\left[\frac{b}{d}\right] \operatorname{CosIntegral}\left[\frac{b c-a d}{d (c+d x)}\right]}{4 d^2}-\frac{3 (b c-a d) \operatorname{Cos}\left[\frac{3 b}{d}\right] \operatorname{CosIntegral}\left[\frac{3 (b c-a d)}{d (c+d x)}\right]}{4 d^2}+\frac{(c+d x) \operatorname{Sin}\left[\frac{a+b x}{c+d x}\right]^3}{d}+$$

$$\frac{3 (b c-a d) \operatorname{Sin}\left[\frac{b}{d}\right] \operatorname{SinIntegral}\left[\frac{b c-a d}{d (c+d x)}\right]}{4 d^2}-\frac{3 (b c-a d) \operatorname{Sin}\left[\frac{3 b}{d}\right] \operatorname{SinIntegral}\left[\frac{3 (b c-a d)}{d (c+d x)}\right]}{4 d^2}$$

Result (type 4, 657 leaves) :

$$-\frac{1}{4\,d}3\left(-b\,c^2+a\,c\,d\right)\left(\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,(b\,c-a\,d)}-\frac{i\,e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,(b\,c-a\,d)}\right)+$$

$$\frac{1}{4\,d}3\left(-b\,c^2+a\,c\,d\right)\left(\frac{i\,e^{-\frac{3\,i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{6\,i\,b}{d}}\right)\left(-e^{\frac{6\,i\,a}{c+d\,x}}+e^{\frac{6\,i\,b\,c}{d\,(c+d\,x)}}\right)}{12\,(b\,c-a\,d)}-\right.$$

$$\left.\frac{i\,e^{-\frac{3\,i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{6\,i\,b}{d}}\right)\left(e^{\frac{6\,i\,a}{c+d\,x}}+e^{\frac{6\,i\,b\,c}{d\,(c+d\,x)}}\right)}{12\,(b\,c-a\,d)}\right)+\frac{3}{4}\,x\,\text{Cos}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]\,\text{Sin}\left[\frac{b}{d}\right]-$$

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

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

$$3\,(-b\,c+a\,d)\left(-\text{Cos}\left[\frac{b}{d}\right]\,\text{CosIntegral}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]+\text{Cos}\left[\frac{3\,b}{d}\right]\,\text{CosIntegral}\left[\frac{3\,(-b\,c+a\,d)}{d\,(c+d\,x)}\right]+\right.$$

$$\left.\text{Sin}\left[\frac{b}{d}\right]\,\text{SinIntegral}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]-\text{Sin}\left[\frac{3\,b}{d}\right]\,\text{SinIntegral}\left[\frac{3\,(-b\,c+a\,d)}{d\,(c+d\,x)}\right]\right)$$

Problem 46: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 213 leaves, 8 steps):

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

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

Result (type 4, 172 leaves):

$$-\frac{1}{2\sqrt{c}\,\sqrt{d}}\,\mathrm{i}\left(\mathrm{Cos}\left[a+\frac{\mathrm{i}\,b\sqrt{c}}{\sqrt{d}}\right]\mathrm{CosIntegral}\left[b\left(-\frac{\mathrm{i}\sqrt{c}}{\sqrt{d}}+x\right)\right]-\mathrm{Cos}\left[a-\frac{\mathrm{i}\,b\sqrt{c}}{\sqrt{d}}\right]\mathrm{CosIntegral}\left[b\left(\frac{\mathrm{i}\sqrt{c}}{\sqrt{d}}+x\right)\right]+\mathrm{Sin}\left[a-\frac{\mathrm{i}\,b\sqrt{c}}{\sqrt{d}}\right]\mathrm{SinIntegral}\left[b\left(\frac{\mathrm{i}\sqrt{c}}{\sqrt{d}}+x\right)\right]+\mathrm{Sin}\left[a+\frac{\mathrm{i}\,b\sqrt{c}}{\sqrt{d}}\right]\mathrm{SinIntegral}\left[\frac{\mathrm{i}\,b\sqrt{c}}{\sqrt{d}}-b\,x\right]\right)$$

Problem 51: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 4, 101 leaves, 5 steps):

$$\frac{(c+d\,x)\,\mathrm{Cos}\left[\frac{a+b\,x}{c+d\,x}\right]}{d}-\frac{(b\,c-a\,d)\,\mathrm{CosIntegral}\left[\frac{b\,c-a\,d}{d\,(c+d\,x)}\right]\mathrm{Sin}\left[\frac{b}{d}\right]}{d^2}+\frac{(b\,c-a\,d)\,\mathrm{Cos}\left[\frac{b}{d}\right]\mathrm{SinIntegral}\left[\frac{b\,c-a\,d}{d\,(c+d\,x)}\right]}{d^2}$$

Result (type 4, 317 leaves):

$$\frac{1}{d}\left(-b\,c^2+a\,c\,d\right)\left(\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(-1+e^{\frac{2\,i\,b}{d}}\right)\left(-e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,(b\,c-a\,d)}-\frac{e^{-\frac{i\,(2\,b\,c+a\,d+b\,d\,x)}{d\,(c+d\,x)}}\left(1+e^{\frac{2\,i\,b}{d}}\right)\left(e^{\frac{2\,i\,a}{c+d\,x}}+e^{\frac{2\,i\,b\,c}{d\,(c+d\,x)}}\right)}{4\,(b\,c-a\,d)}\right)+x\,\mathrm{Cos}\left[\frac{b}{d}\right]\mathrm{Cos}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]-x\,\mathrm{Sin}\left[\frac{b}{d}\right]\mathrm{Sin}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]+\frac{1}{d^2}(-b\,c+a\,d)\left(\mathrm{CosIntegral}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]\mathrm{Sin}\left[\frac{b}{d}\right]+\mathrm{Cos}\left[\frac{b}{d}\right]\mathrm{SinIntegral}\left[\frac{-b\,c+a\,d}{d\,(c+d\,x)}\right]\right)$$

Problem 52: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}\left[\frac{a+b\,x}{c+d\,x}\right]^2dx$$

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

$$\frac{(c+d x) \operatorname{Cos}\left[\frac{a+b x}{c+d x}\right]^2}{d}-\frac{(b c-a d) \operatorname{CosIntegral}\left[\frac{2 (b c-a d)}{d (c+d x)}\right] \operatorname{Sin}\left[\frac{2 b}{d}\right]}{d^2}+\frac{(b c-a d) \operatorname{Cos}\left[\frac{2 b}{d}\right] \operatorname{SinIntegral}\left[\frac{2 (b c-a d)}{d (c+d x)}\right]}{d^2}$$

Result (type 4, 400 leaves) :

$$\frac{1}{d}\left(-b c^2+a c d\right)\left(\frac{e^{-\frac{2 i (2 b c+a d+b d x)}{d (c+d x)}}\left(-1+e^{\frac{4 i b}{d}}\right)\left(-e^{\frac{4 i a}{c+d x}}+e^{\frac{4 i b c}{d (c+d x)}}\right)}{8 (b c-a d)}-\frac{e^{-\frac{2 i (2 b c+a d+b d x)}{d (c+d x)}}\left(1+e^{\frac{4 i b}{d}}\right)\left(e^{\frac{4 i a}{c+d x}}+e^{\frac{4 i b c}{d (c+d x)}}\right)}{8 (b c-a d)}\right)+$$

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

$$\left(d^2 x-2 b c \operatorname{CosIntegral}\left[\frac{2(-b c+a d)}{d (c+d x)}\right] \operatorname{Sin}\left[\frac{2 b}{d}\right]+2 a d \operatorname{CosIntegral}\left[\frac{2(-b c+a d)}{d (c+d x)}\right] \operatorname{Sin}\left[\frac{2 b}{d}\right]-\right.$$

$$\left.2 b c \operatorname{Cos}\left[\frac{2 b}{d}\right] \operatorname{SinIntegral}\left[\frac{2(-b c+a d)}{d (c+d x)}\right]+2 a d \operatorname{Cos}\left[\frac{2 b}{d}\right] \operatorname{SinIntegral}\left[\frac{2(-b c+a d)}{d (c+d x)}\right]\right)$$

Problem 63: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b \operatorname{Sec}[c+d x]}}{1+\operatorname{Cos}[c+d x]} \, dx$$

Optimal (type 4, 92 leaves, 2 steps) :

$$\frac{\operatorname{EllipticE}\left[\operatorname{ArcSin}\left[\frac{\operatorname{Tan}[c+d x]}{1+\operatorname{Sec}[c+d x]}\right], \frac{a-b}{a+b}\right] \sqrt{\frac{1}{1+\operatorname{Sec}[c+d x]}} \sqrt{a+b \operatorname{Sec}[c+d x]}}{d \sqrt{\frac{a+b \operatorname{Sec}[c+d x]}{(a+b)(1+\operatorname{Sec}[c+d x])}}}$$

Result (type 4, 1979 leaves) :

$$\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \sqrt{a+b \operatorname{Sec}[c+d x]}\left(-2 \operatorname{Sin}[c+d x]+2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right) \Big/ \left(d (1+\operatorname{Cos}[c+d x])\right)+$$

$$\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]^2 \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^5\right.$$

$$\left(\frac{b}{\sqrt{b+a \operatorname{Cos}[c+d x]} \sqrt{\operatorname{Sec}[c+d x]}}+\frac{a \sqrt{\operatorname{Sec}[c+d x]}}{\sqrt{b+a \operatorname{Cos}[c+d x]}}+\frac{b \sqrt{\operatorname{Sec}[c+d x]}}{\sqrt{b+a \operatorname{Cos}[c+d x]}}+\right.$$

$$\left.\frac{a \operatorname{Cos}[2(c+d x)] \sqrt{\operatorname{Sec}[c+d x]}}{\sqrt{b+a \operatorname{Cos}[c+d x]}}\right) \sqrt{1+\operatorname{Sec}[c+d x]} \sqrt{a+b \operatorname{Sec}[c+d x]}$$

$$\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\;\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]+\right.$$

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

$$\left(4\,d\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\sqrt{\text{Sec}[c+d\,x]}\right.$$

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

$$\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\;\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]+\right.$$

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

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

$$\left(3\sqrt{b+a\,\text{Cos}[c+d\,x]}\;\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^5\sqrt{1+\text{Sec}[c+d\,x]}\;\text{Sin}[c+d\,x]\right.$$

$$\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\;\text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]+\right.$$

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

$$\left(8\sqrt{\frac{1}{1+\text{Cos}[c+d\,x]}}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)-$$

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

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

$$\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\ \text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]+\right.$$

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

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

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

$$\left(2\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\sqrt{\frac{\text{Cos}[c+d\,x]}{1+\text{Cos}[c+d\,x]}}\ \text{EllipticE}\left[\text{ArcSin}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\frac{a-b}{a+b}\right]+\right.$$

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

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Big/\left(8\left(\frac{1}{1+\text{Cos}[c+d\,x]}\right)^{3/2}\sqrt{\frac{b+a\,\text{Cos}[c+d\,x]}{(a+b)\,(1+\text{Cos}[c+d\,x])}}\right)+$$

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

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

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

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

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

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

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

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

$$\left.\frac{\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\;\mathrm{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{1-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{a+b}}}{\sqrt{1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}}\right)+$$

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

$$\left(2\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\,\sqrt{\frac{\mathrm{Cos}[c+d\,x]}{1+\mathrm{Cos}[c+d\,x]}}\;\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right],\,\frac{a-b}{a+b}\right]+\right.$$

$$\left.\left.\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{(a+b)\,(1+\mathrm{Cos}[c+d\,x])}}\,\left(-\mathrm{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+\mathrm{Sin}\left[\frac{3}{2}\,(c+d\,x)\right]\right)\right)\mathrm{Tan}[c+d\,x]\right)\Bigg/$$

$$\left.\left.\left(8\,\left(\frac{1}{1+\mathrm{Cos}[c+d\,x]}\right)^{3/2}\,\sqrt{\frac{b+a\,\mathrm{Cos}[c+d\,x]}{(a+b)\,(1+\mathrm{Cos}[c+d\,x])}}\;\sqrt{1+\mathrm{Sec}[c+d\,x]}\right)\right)\right)$$

Problem 64: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[a+b\,x]\;\mathrm{Sec}[2\,a+2\,b\,x]\,dx$$

Optimal (type 3, 35 leaves, 4 steps):

$$-\frac{\mathrm{ArcTanh}[\mathrm{Sin}[a+b\,x]]}{b}+\frac{\sqrt{2}\;\mathrm{ArcTanh}\left[\sqrt{2}\;\mathrm{Sin}[a+b\,x]\right]}{b}$$

Result (type 3, 331 leaves):

$$\frac{1}{4\,b}\left(\frac{(2+2\,i)\,\left((-1-i)+\sqrt{2}\right)\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\left(-1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}{\left(1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}\right]}{(-1+i)+\sqrt{2}}-\right.$$
$$2\,i\,\sqrt{2}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\left(1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}{\left(-1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}\right]+$$
$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]\right]-4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]\right]+$$
$$2\,\sqrt{2}\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[a+b\,x]\right]-\sqrt{2}\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}[a+b\,x]-\sqrt{2}\,\text{Sin}[a+b\,x]\right]+$$
$$\left.\frac{1}{(-1+i)+\sqrt{2}}(1-i)\,\left((-1-i)+\sqrt{2}\right)\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}[a+b\,x]-\sqrt{2}\,\text{Sin}[a+b\,x]\right]\right)$$

Problem 65: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[a+b\,x]\,\text{Sec}\left[2\,(a+b\,x)\right]\,dx$$

Optimal (type 3, 35 leaves, 4 steps):

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

Result (type 3, 331 leaves):

$$\frac{1}{4\,b}\left(\frac{(2+2\,i)\,\left((-1-i)+\sqrt{2}\right)\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\left(-1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}{\left(1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}\right]}{(-1+i)+\sqrt{2}}-\right.$$
$$2\,i\,\sqrt{2}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\left(1+\sqrt{2}\right)\,\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}{\left(-1+\sqrt{2}\right)\,\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]}\right]+$$
$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]\right]-4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(a+b\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(a+b\,x)\right]\right]+$$
$$2\,\sqrt{2}\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[a+b\,x]\right]-\sqrt{2}\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}[a+b\,x]-\sqrt{2}\,\text{Sin}[a+b\,x]\right]+$$
$$\left.\frac{1}{(-1+i)+\sqrt{2}}(1-i)\,\left((-1-i)+\sqrt{2}\right)\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}[a+b\,x]-\sqrt{2}\,\text{Sin}[a+b\,x]\right]\right)$$

Problem 74: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \mathrm{Sin}[x]\,\mathrm{Tan}[2\,x]\,dx$$

Optimal (type 3, 20 leaves, 4 steps):

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

Result (type 3, 179 leaves):

$$-\frac{1}{4\sqrt{2}}\left(2\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{x}{2}\right]-\mathrm{Sin}\left[\frac{x}{2}\right]}\right]+2\,i\,\mathrm{ArcTan}\left[\frac{\mathrm{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\mathrm{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\mathrm{Cos}\left[\frac{x}{2}\right]-\mathrm{Sin}\left[\frac{x}{2}\right]}\right]-2\,\mathrm{Log}\left[\sqrt{2}+2\,\mathrm{Sin}[x]\right]+\mathrm{Log}\left[2-\sqrt{2}\,\mathrm{Cos}[x]-\sqrt{2}\,\mathrm{Sin}[x]\right]+\mathrm{Log}\left[2+\sqrt{2}\,\mathrm{Cos}[x]-\sqrt{2}\,\mathrm{Sin}[x]\right]+4\sqrt{2}\,\mathrm{Sin}[x]\right)$$

Problem 76: Result is not expressed in closed-form.

$$\int \mathrm{Sin}[x]\,\mathrm{Tan}[4\,x]\,dx$$

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

$$\frac{1}{4}\sqrt{2-\sqrt{2}}\,\mathrm{ArcTanh}\left[\frac{2\,\mathrm{Sin}[x]}{\sqrt{2-\sqrt{2}}}\right]+\frac{1}{4}\sqrt{2+\sqrt{2}}\,\mathrm{ArcTanh}\left[\frac{2\,\mathrm{Sin}[x]}{\sqrt{2+\sqrt{2}}}\right]-\mathrm{Sin}[x]$$

Result (type 7, 96 leaves):

$$\frac{1}{16}\,\mathrm{RootSum}\left[1+\#1^8\,\&,\ \frac{1}{\#1^7}\left(2\,\mathrm{ArcTan}\left[\frac{\mathrm{Sin}[x]}{\mathrm{Cos}[x]-\#1}\right]-i\,\mathrm{Log}\left[1-2\,\mathrm{Cos}[x]\,\#1+\#1^2\right]+2\,\mathrm{ArcTan}\left[\frac{\mathrm{Sin}[x]}{\mathrm{Cos}[x]-\#1}\right]\#1^6-i\,\mathrm{Log}\left[1-2\,\mathrm{Cos}[x]\,\#1+\#1^2\right]\#1^6\right)\&\right]-\mathrm{Sin}[x]$$

Problem 77: Result is not expressed in closed-form.

$$\int \mathrm{Sin}[x]\,\mathrm{Tan}[5\,x]\,dx$$

Optimal (type 3, 112 leaves, 10 steps):

$$\frac{1}{5}\,\mathrm{ArcTanh}[\mathrm{Sin}[x]]-\frac{1}{20}\left(1-\sqrt{5}\right)\mathrm{Log}\left[1-\sqrt{5}-4\,\mathrm{Sin}[x]\right]-\frac{1}{20}\left(1+\sqrt{5}\right)\mathrm{Log}\left[1+\sqrt{5}-4\,\mathrm{Sin}[x]\right]+\frac{1}{20}\left(1-\sqrt{5}\right)\mathrm{Log}\left[1-\sqrt{5}+4\,\mathrm{Sin}[x]\right]+\frac{1}{20}\left(1+\sqrt{5}\right)\mathrm{Log}\left[1+\sqrt{5}+4\,\mathrm{Sin}[x]\right]-\mathrm{Sin}[x]$$

Result (type 7, 248 leaves):

$$\frac{1}{20}\left(\text{RootSum}\left[1-\#1^2+\#1^4-\#1^6+\#1^8\ \&,\ \left(6\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]-3\,i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]-2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^2+i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^2-2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^4+i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^4+6\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^6-3\,i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^6\right)\Big/\left(-\#1+2\,\#1^3-3\,\#1^5+4\,\#1^7\right)\ \&\right]-4\left(\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]+5\,\text{Sin}[x]\right)\right)$$

Problem 78: Result is not expressed in closed-form.

$$\int \text{Sin}[x]\,\text{Tan}[6\,x]\,dx$$

Optimal (type 3, 89 leaves, 10 steps):

$$\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Sin}[x]\right]}{3\sqrt{2}}+\frac{1}{6}\sqrt{2-\sqrt{3}}\,\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2-\sqrt{3}}}\right]+\frac{1}{6}\sqrt{2+\sqrt{3}}\,\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2+\sqrt{3}}}\right]-\text{Sin}[x]$$

Result (type 7, 366 leaves):

$$\frac{1}{24}\left(\text{RootSum}\left[1-\#1^4+\#1^8\ \&,\ \frac{1}{-\#1^3+2\,\#1^7}\left(4\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]-2\,i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]-2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^2+i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^2-2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^4+i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^4+4\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^6-2\,i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^6\right)\ \&\right]-\sqrt{2}\left(2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[x]\right]+\text{Log}\left[2-\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]+\text{Log}\left[2+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]+12\,\sqrt{2}\,\text{Sin}[x]\right)\right)$$

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

$$\int \text{Cot}[2\,x]\,\text{Sin}[x]\,dx$$

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

$$-\frac{1}{2}\,\text{ArcTanh}[\text{Sin}[x]]+\text{Sin}[x]$$

Result (type 3, 41 leaves):

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

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

$$\int \text{Cot}[4\,x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 28 leaves, 6 steps):

$$-\frac{1}{4}\,\text{ArcTanh}[\text{Sin}[x]]-\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Sin}[x]\right]}{2\,\sqrt{2}}+\text{Sin}[x]$$

Result (type 3, 223 leaves):

$$\frac{1}{8\,\sqrt{2}}\left(2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\,\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\,\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\,\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\,\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+\right.$$
$$2\,\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]-2\,\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]-2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[x]\right]+$$
$$\left.\text{Log}\left[2-\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]+\text{Log}\left[2+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]+8\,\sqrt{2}\,\text{Sin}[x]\right)$$

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

$$\int \text{Cot}[5\,x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 82 leaves, 6 steps):

$$-\frac{1}{5}\,\sqrt{\frac{1}{2}\left(5+\sqrt{5}\right)}\,\text{ArcTanh}\left[2\,\sqrt{\frac{2}{5+\sqrt{5}}}\,\text{Sin}[x]\right]-$$
$$\frac{1}{5}\,\sqrt{\frac{1}{2}\left(5-\sqrt{5}\right)}\,\text{ArcTanh}\left[\sqrt{\frac{2}{5}\left(5+\sqrt{5}\right)}\,\text{Sin}[x]\right]+\text{Sin}[x]$$

Result (type 3, 201 leaves):

$$\frac{\left(-1+\sqrt{5}\right) \text{ArcTanh}\left[\frac{\left(-3+\sqrt{5}\right) \text{Tan}\left[\frac{x}{2}\right]}{\sqrt{10-2 \sqrt{5}}}\right]}{\sqrt{50-10 \sqrt{5}}}-\frac{\left(-1+\sqrt{5}\right) \text{ArcTanh}\left[\frac{\left(5+\sqrt{5}\right) \text{Tan}\left[\frac{x}{2}\right]}{\sqrt{10-2 \sqrt{5}}}\right]}{\sqrt{50-10 \sqrt{5}}}+$$

$$\frac{\left(1+\sqrt{5}\right) \text{ArcTanh}\left[\frac{\left(-5+\sqrt{5}\right) \text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2 \left(5+\sqrt{5}\right)}}\right]}{\sqrt{10 \left(5+\sqrt{5}\right)}}-\frac{\left(1+\sqrt{5}\right) \text{ArcTanh}\left[\frac{\left(3+\sqrt{5}\right) \text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2 \left(5+\sqrt{5}\right)}}\right]}{\sqrt{10 \left(5+\sqrt{5}\right)}}+\text{Sin}[x]$$

Problem 84: Result more than twice size of optimal antiderivative.

$$\int \text{Cot}[6 x] \,\text{Sin}[x] \, dx$$

Optimal (type 3, 38 leaves, 7 steps):

$$-\frac{1}{6} \text{ArcTanh}[\text{Sin}[x]]-\frac{1}{6} \text{ArcTanh}[2 \,\text{Sin}[x]]-\frac{\text{ArcTanh}\left[\frac{2 \,\text{Sin}[x]}{\sqrt{3}}\right]}{2 \sqrt{3}}+\text{Sin}[x]$$

Result (type 3, 99 leaves):

$$\frac{1}{12}\left(-2 \sqrt{3} \,\text{ArcTanh}\left[\frac{\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-2 \sqrt{3} \,\text{ArcTanh}\left[\sqrt{3} \,\text{Tan}\left[\frac{x}{2}\right]\right]+2 \,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]-\right.$$

$$\left.2 \,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]+\text{Log}[1-2 \,\text{Sin}[x]]-\text{Log}[1+2 \,\text{Sin}[x]]+12 \,\text{Sin}[x]\right)$$

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

$$\int \text{Sec}[2 x] \,\text{Sin}[x] \, dx$$

Optimal (type 3, 15 leaves, 2 steps):

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

Result (type 3, 174 leaves):

$$\frac{1}{4 \sqrt{2}}\left(2 \,i \,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right) \text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right) \text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-2 \,i \,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right) \text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right) \text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+\right.$$

$$\left.4 \,\text{ArcTanh}\left[\sqrt{2}+\text{Tan}\left[\frac{x}{2}\right]\right]-\text{Log}\left[2-\sqrt{2} \,\text{Cos}[x]-\sqrt{2} \,\text{Sin}[x]\right]+\text{Log}\left[2+\sqrt{2} \,\text{Cos}[x]-\sqrt{2} \,\text{Sin}[x]\right]\right)$$

Problem 87: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \mathrm{Sec}[4\,x]\,\mathrm{Sin}[x]\,dx$$

Optimal (type 3, 71 leaves, 4 steps):

$$-\frac{\mathrm{ArcTanh}\left[\frac{2\,\mathrm{Cos}[x]}{\sqrt{2-\sqrt{2}}}\right]}{2\,\sqrt{2\,\left(2-\sqrt{2}\right)}}+\frac{\mathrm{ArcTanh}\left[\frac{2\,\mathrm{Cos}[x]}{\sqrt{2+\sqrt{2}}}\right]}{2\,\sqrt{2\,\left(2+\sqrt{2}\right)}}$$

Result (type 3, 5090 leaves):

$$\Bigg(\bigg(-2\,(-1)^{3/8}\,\left(1+\sqrt{2}\right)\,x-\bigg(2\,(-1)^{1/4}\,\left(-2-(1-i)\,(-1)^{5/8}+(-1)^{5/8}\,\sqrt{2}\right)$$

$$\mathrm{ArcTan}\left[\frac{-\mathrm{Cos}[x]+\left(1+\sqrt{2}\right)\,\mathrm{Sin}[x]}{2\,(-1)^{3/8}+\mathrm{Cos}[x]-\sqrt{2}\,\mathrm{Cos}[x]+\mathrm{Sin}[x]}\right]\bigg)\Big/\left((-1+i)+2\,(-1)^{3/8}+\sqrt{2}\right)-$$

$$\bigg(2\,(1-i)^{3/2}\,2^{1/4}\,\left((-3-i)+2\,(-1)^{5/8}+(2+i)\,\sqrt{2}-(2+2\,i)\,(-1)^{3/8}\,\sqrt{2}+2\,(-1)^{5/8}\,\sqrt{2}\right)$$

$$\mathrm{ArcTan}\left[\frac{(1+i)+i\,\sqrt{2}+\left((-1+i)+2\,(-1)^{3/8}+\sqrt{2}\right)\,\mathrm{Tan}\left[\frac{x}{2}\right]}{\sqrt{1-i}\,2^{3/4}}\right]\bigg)\Big/$$

$$\left((-1+i)+2\,(-1)^{3/8}+\sqrt{2}\right)+2\,(-1)^{3/8}\,\mathrm{Log}\left[\mathrm{Sec}\left[\frac{x}{2}\right]^2\right]+$$

$$\bigg((-1)^{3/4}\,\left(-2-(1-i)\,(-1)^{5/8}+(-1)^{5/8}\,\sqrt{2}\right)$$

$$\mathrm{Log}\left[-\mathrm{Sec}\left[\frac{x}{2}\right]^4\,\left(-2+(1-i)\,\sqrt{2}+2\,(-1)^{3/8}\,\left(-1+\sqrt{2}\right)\,\mathrm{Cos}[x]+\sqrt{2}\,\mathrm{Cos}[2\,x]-\right.\right.$$

$$\left.\left.2\,(-1)^{3/8}\,\mathrm{Sin}[x]+\sqrt{2}\,\mathrm{Sin}[2\,x]\right)\right]\bigg)\Big/\left((-1+i)+2\,(-1)^{3/8}+\sqrt{2}\right)\bigg)$$

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

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

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

$$\left(-(-1-i)^{3/2}\,(1-i)^{1/4}\,(1+i)^{1/4}-(1+i)\,\mathrm{Cos}[x]+i\,\sqrt{1-i}\,\sqrt{1+i}\,\mathrm{Cos}[x]+\right.$$

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

$$\left(2\,\left((-1+i)+\sqrt{1-i}\,\sqrt{1+i}\right)\,\left(-(-1-i)^{3/2}\,(1-i)^{1/4}\,(1+i)^{1/4}-(1+i)\,\mathrm{Cos}[x]+\right.\right.$$

$$\left.\left.i\,\sqrt{1-i}\,\sqrt{1+i}\,\mathrm{Cos}[x]+(1-i)\,\mathrm{Sin}[x]+\sqrt{1-i}\,\sqrt{1+i}\,\mathrm{Sin}[x]\right)\right)\bigg)\Big/$$

$$\left(-2\,(-1)^{3/8}\left(1+\sqrt{2}\right)-\left(2\,(-1)^{1/4}\left(-2-(1-\mathrm{i})\,(-1)^{5/8}+(-1)^{5/8}\sqrt{2}\right)\right.\right.$$

$$\left(\frac{\left(1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]}{2\,(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\,\text{Cos}[x]+\text{Sin}[x]}-\left(\left(\text{Cos}[x]-\text{Sin}[x]+\sqrt{2}\,\text{Sin}[x]\right)\right.\right.$$

$$\left.\left.\left.\left(-\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)\right)\Big/\left(2\,(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\,\text{Cos}[x]+\text{Sin}[x]\right)^2\right)\right)\Big/$$

$$\left(\left(\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)\left(1+\frac{\left(-\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)^2}{\left(2\,(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\,\text{Cos}[x]+\text{Sin}[x]\right)^2}\right)\right)+2\right.$$

$$(-1)^{3/8}\,\text{Tan}\left[\frac{x}{2}\right]-$$

$$\left(\left((-1)^{3/4}\left(-2-(1-\mathrm{i})\,(-1)^{5/8}+(-1)^{5/8}\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]^4\right.\right.$$

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

$$\left.2\sqrt{2}\,\text{Sin}[2\,x]\right)-2\,\text{Sec}\left[\frac{x}{2}\right]^4\left(-2+(1-\mathrm{i})\sqrt{2}+2\,(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]+\right.$$

$$\left.\left.\left.\sqrt{2}\,\text{Cos}[2\,x]-2\,(-1)^{3/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\right)\text{Tan}\left[\frac{x}{2}\right]\right)\right)\Big/$$

$$\left(\left(\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)\left(-2+(1-\mathrm{i})\sqrt{2}+2\,(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]+\right.\right.\right.$$

$$\left.\left.\sqrt{2}\,\text{Cos}[2\,x]-2\,(-1)^{3/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\right)\right)-$$

$$\left(\left(1-\mathrm{i}\right)\left((-3-\mathrm{i})+2\,(-1)^{5/8}+(2+\mathrm{i})\sqrt{2}-(2+2\,\mathrm{i})\,(-1)^{3/8}\sqrt{2}+2\,(-1)^{5/8}\sqrt{2}\right)\text{Sec}\left[\frac{x}{2}\right]^2\right)\Big/$$

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

$$\left(\left(\left(-2-2\,\mathrm{i}\right)\left((1-\mathrm{i})+\sqrt{2}+(-1)^{7/8}\sqrt{2}\right)x+\right.\right.$$

$$(2+2\,\mathrm{i})\,(-1)^{3/8}\left(2-(1-\mathrm{i})\,(-1)^{5/8}+(1-\mathrm{i})\,(-1)^{7/8}-\sqrt{2}\right)$$

$$\text{ArcTan}\left[\frac{\text{Sin}[x]}{-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\,\text{Cos}[x]+(-1)^{3/4}\,\text{Sin}[x]}\right]+$$

$$(4-4\,\mathrm{i})\left((1+3\,\mathrm{i})+(1-\mathrm{i})\,(-1)^{1/8}+(1+2\,\mathrm{i})\,(-1)^{3/8}-\right.$$

$$\left.(2+2\,\mathrm{i})\,(-1)^{5/8}+(2+\mathrm{i})\,(-1)^{7/8}-(1+2\,\mathrm{i})\sqrt{2}\right)$$

$$\text{ArcTan}\left[\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)(-1)^{5/8}\left(\mathrm{i}+(-1)^{3/4}+\left(-1+(-1)^{1/4}-(-1)^{5/8}\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]\right)\right]+$$

$$2\,(-1)^{7/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+$$

$$(-1)^{7/8}\left((-2-2\,\mathrm{i})+2\,(-1)^{5/8}-2\,(-1)^{7/8}+(1+\mathrm{i})\sqrt{2}\right)$$

$$\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^4\left(1-3\,(-1)^{1/4}+2\,(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Cos}[x]-\right.\right.$$

$$\left(-i+(-1)^{1/4}\right)\text{Cos}[2x]+2(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2x]+(-1)^{3/4}\text{Sin}[2x]\Big)\Big]\Big)$$

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

$$\Big((-2-2i)\left((1-i)+\sqrt{2}+(-1)^{7/8}\sqrt{2}\right)+\Big((2+2i)(-1)^{3/8}\Big(2-(1-i)(-1)^{5/8}+$$
$$(1-i)(-1)^{7/8}-\sqrt{2}\Big)\Big(-\Big(\Big(\text{Sin}[x]\left((-1)^{3/4}\text{Cos}[x]-\text{Sin}[x]+(-1)^{1/4}\text{Sin}[x]\right)\Big)\Big/$$
$$\left(-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]\right)^2\Big)+$$
$$\frac{\text{Cos}[x]}{-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]}\Big)\Big)\Big/$$
$$\left(1+\frac{\text{Sin}[x]^2}{\left(-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]\right)^2}\right)+$$
$$2(-1)^{7/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)\text{Tan}\Big[\frac{x}{2}\Big]+$$
$$\Big((-1)^{7/8}\left((-2-2i)+2(-1)^{5/8}-2(-1)^{7/8}+(1+i)\sqrt{2}\right)\text{Cos}\Big[\frac{x}{2}\Big]^4$$
$$\Big(\text{Sec}\Big[\frac{x}{2}\Big]^4\Big(2(-1)^{3/8}\sqrt{2}\,\text{Cos}[x]+2\,\text{Cos}[2x]+2(-1)^{3/4}\text{Cos}[2x]-$$
$$2(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Sin}[x]+2\left(-i+(-1)^{1/4}\right)\text{Sin}[2x]\Big)+$$
$$2\,\text{Sec}\Big[\frac{x}{2}\Big]^4\Big(1-3(-1)^{1/4}+2(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Cos}[x]-\left(-i+(-1)^{1/4}\right)$$
$$\text{Cos}[2x]+2(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2x]+(-1)^{3/4}\text{Sin}[2x]\Big)\text{Tan}\Big[\frac{x}{2}\Big]\Big)\Big)\Big/$$
$$\Big(1-3(-1)^{1/4}+2(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Cos}[x]-\left(-i+(-1)^{1/4}\right)\text{Cos}[2x]+$$
$$2(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2x]+(-1)^{3/4}\text{Sin}[2x]\Big)+$$
$$\Big(2(-1)^{5/8}\Big((1+3i)+(1-i)(-1)^{1/8}+(1+2i)(-1)^{3/8}-(2+2i)(-1)^{5/8}+$$
$$(2+i)(-1)^{7/8}-(1+2i)\sqrt{2}\Big)\left(-1+(-1)^{1/4}-(-1)^{5/8}\sqrt{2}\right)\text{Sec}\Big[\frac{x}{2}\Big]^2\Big)\Big/$$

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

$$\Bigg(\Bigg(2(-1)^{1/8}\left(1+(-1)^{1/4}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)x-$$

$$2(-1)^{3/8}\left(2-\sqrt{2}-(-1)^{3/8}\sqrt{2}+(-1)^{5/8}\sqrt{2}\right)$$

$$\mathrm{ArcTan}\left[\frac{\mathrm{Sin}[x]}{\left(-1+(-1)^{1/4}\right)\mathrm{Cos}[x]+(-1)^{5/8}\left(\sqrt{2}+(-1)^{1/8}\,\mathrm{Sin}[x]\right)}\right]-4\left((3-\mathrm{i})-\right.$$

$$\left.2(-1)^{1/8}+2(-1)^{3/8}-(2-\mathrm{i})\sqrt{2}+(-1)^{1/8}\sqrt{2}-(2+\mathrm{i})(-1)^{3/8}\sqrt{2}+(-1)^{5/8}\sqrt{2}\right)$$

$$\mathrm{ArcTan}\left[\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)(-1)^{5/8}\left(\mathrm{i}+(-1)^{3/4}+\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)\mathrm{Tan}\left[\frac{x}{2}\right]\right)\right]-$$

$$2(-1)^{7/8}\left(1+(-1)^{3/4}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)\mathrm{Log}\left[\mathrm{Sec}\left[\frac{x}{2}\right]^2\right]+$$

$$(-1)^{7/8}\left(2-\sqrt{2}-(-1)^{3/8}\sqrt{2}+(-1)^{5/8}\sqrt{2}\right)$$

$$\mathrm{Log}\left[-\mathrm{Sec}\left[\frac{x}{2}\right]^4\left(-1+3(-1)^{1/4}-2(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\mathrm{Cos}[x]+\right.\right.$$

$$\left.\left.\left(-\mathrm{i}+(-1)^{1/4}\right)\mathrm{Cos}[2x]+2(-1)^{3/8}\sqrt{2}\,\mathrm{Sin}[x]+\mathrm{Sin}[2x]+(-1)^{3/4}\,\mathrm{Sin}[2x]\right)\right]\Bigg)$$

$$\Bigg(1\Big/\left(\sqrt{1-\mathrm{i}}\left((-1-\mathrm{i})+\sqrt{1-\mathrm{i}}\sqrt{1+\mathrm{i}}\right)^2\left(-\sqrt{-1+\mathrm{i}}\,(1-\mathrm{i})^{1/4}(1+\mathrm{i})^{3/4}+\right.\right.$$

$$\left.\left.\sqrt{1-\mathrm{i}}\,\mathrm{Cos}[x]-\sqrt{1+\mathrm{i}}\,\mathrm{Cos}[x]-\mathrm{i}\sqrt{1-\mathrm{i}}\,\mathrm{Sin}[x]-\mathrm{i}\sqrt{1+\mathrm{i}}\,\mathrm{Sin}[x]\right)\right)-$$

$$\mathrm{i}\Big/\left(\sqrt{1+\mathrm{i}}\left((-1-\mathrm{i})+\sqrt{1-\mathrm{i}}\sqrt{1+\mathrm{i}}\right)^2\left(-\sqrt{-1+\mathrm{i}}\,(1-\mathrm{i})^{1/4}(1+\mathrm{i})^{3/4}+\right.\right.$$

$$\left.\left.\sqrt{1-\mathrm{i}}\,\mathrm{Cos}[x]-\sqrt{1+\mathrm{i}}\,\mathrm{Cos}[x]-\mathrm{i}\sqrt{1-\mathrm{i}}\,\mathrm{Sin}[x]-\mathrm{i}\sqrt{1+\mathrm{i}}\,\mathrm{Sin}[x]\right)\right)+(2\,\mathrm{Sin}[x])\Big/$$

$$\left(\sqrt{-1+\mathrm{i}}\,(1-\mathrm{i})^{3/4}(1+\mathrm{i})^{1/4}\left((-1-\mathrm{i})+\sqrt{1-\mathrm{i}}\sqrt{1+\mathrm{i}}\right)^2\left(-\sqrt{-1+\mathrm{i}}\,(1-\mathrm{i})^{1/4}(1+\mathrm{i})^{3/4}+\right.\right.$$

$$\left.\left.\sqrt{1-\mathrm{i}}\,\mathrm{Cos}[x]-\sqrt{1+\mathrm{i}}\,\mathrm{Cos}[x]-\mathrm{i}\sqrt{1-\mathrm{i}}\,\mathrm{Sin}[x]-\mathrm{i}\sqrt{1+\mathrm{i}}\,\mathrm{Sin}[x]\right)\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(2(-1)^{1/8}\left(1+(-1)^{1/4}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)-$$

$$\Bigg(2(-1)^{3/8}\left(2-\sqrt{2}-(-1)^{3/8}\sqrt{2}+(-1)^{5/8}\sqrt{2}\right)$$

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

$$\left.\left(\left(-1+(-1)^{1/4}\right)\mathrm{Cos}[x]+(-1)^{5/8}\left(\sqrt{2}+(-1)^{1/8}\,\mathrm{Sin}[x]\right)\right)^2\right)+$$

$$\left.\left.\frac{\text{Cos}[x]}{\left(-1+(-1)^{1/4}\right)\text{Cos}[x]+(-1)^{5/8}\left(\sqrt{2}+(-1)^{1/8}\,\text{Sin}[x]\right)}\right)\right)\Big/$$

$$\left(1+\frac{\text{Sin}[x]^2}{\left(\left(-1+(-1)^{1/4}\right)\text{Cos}[x]+(-1)^{5/8}\left(\sqrt{2}+(-1)^{1/8}\,\text{Sin}[x]\right)\right)^2}\right)-$$

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

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

$$\left(-\text{Sec}\left[\frac{x}{2}\right]^4\left(2\,(-1)^{3/8}\sqrt{2}\,\text{Cos}[x]+2\,\text{Cos}[2\,x]+2\,(-1)^{3/4}\,\text{Cos}[2\,x]+\right.\right.$$

$$\left.2\,(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Sin}[x]-2\left(-\text{i}+(-1)^{1/4}\right)\text{Sin}[2\,x]\right)-$$

$$2\,\text{Sec}\left[\frac{x}{2}\right]^4\left(-1+3\,(-1)^{1/4}-2\,(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Cos}[x]+\left(-\text{i}+(-1)^{1/4}\right)\right.$$

$$\left.\left.\left.\text{Cos}[2\,x]+2\,(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2\,x]+(-1)^{3/4}\,\text{Sin}[2\,x]\right)\text{Tan}\left[\frac{x}{2}\right]\right)\right)\Big/$$

$$\left(-1+3\,(-1)^{1/4}-2\,(-1)^{5/8}\sqrt{2}\left(-1+(-1)^{1/4}\right)\text{Cos}[x]+\left(-\text{i}+(-1)^{1/4}\right)\text{Cos}[2\,x]+\right.$$

$$\left.2\,(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2\,x]+(-1)^{3/4}\,\text{Sin}[2\,x]\right)-$$

$$\left(\left(1+\text{i}\right)(-1)^{5/8}\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)\left(\left(3-\text{i}\right)-2\,(-1)^{1/8}+2\,(-1)^{3/8}-\right.\right.$$

$$\left.\left(2-\text{i}\right)\sqrt{2}+(-1)^{1/8}\sqrt{2}-\left(2+\text{i}\right)(-1)^{3/8}\sqrt{2}+(-1)^{5/8}\sqrt{2}\right)\text{Sec}\left[\frac{x}{2}\right]^2\Big)\Big/$$

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

$$\left(\left(-4\sqrt{-1-\text{i}}\left(-1+\sqrt{2}\right)\text{ArcTanh}\left[\frac{-\text{i}\left(\left(1+\text{i}\right)+\sqrt{2}\right)+\left(\left(1+\text{i}\right)+2\,(-1)^{5/8}-\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{-1-\text{i}}\;2^{3/4}}\right]+\right.\right.$$

$$(-1)^{1/8}\,2^{1/4}\left(2\,\text{ArcTan}\left[\frac{\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]}{2\,(-1)^{5/8}+\left(-1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]}\right]-\right.$$

$$\text{i}\left(2\left(1+\sqrt{2}\right)x+2\,\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^4\left(2-\left(1+\text{i}\right)\sqrt{2}+2\,(-1)^{5/8}\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\left.\left(-1+\sqrt{2}\right)\text{Cos}[x]-\sqrt{2}\,\text{Cos}[2\,x]+2\,(-1)^{5/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\right)\right]\right)\right)\right)\right)$$

$$\left(\left(\frac{1}{2}+\frac{\text{i}}{2}\right)\Big/\left(\left(\left(-1-\text{i}\right)+\sqrt{1-\text{i}}\,\sqrt{1+\text{i}}\right)\left(-\frac{2\left(1-\text{i}\right)^{1/4}\left(1+\text{i}\right)^{1/4}}{\sqrt{-1+\text{i}}}-\left(1+\text{i}\right)\text{Cos}[x]+\right.\right.\right.$$

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

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

$$\Bigg(-\frac{2\,(1-i)^{1/4}\,(1+i)^{1/4}}{\sqrt{-1+i}}-(1+i)\,\text{Cos}[x]+\sqrt{1-i}\,\sqrt{1+i}\,\text{Cos}[x]+$$

$$(1-i)\,\text{Sin}[x]-i\,\sqrt{1-i}\,\sqrt{1+i}\,\text{Sin}[x]\Bigg)\Bigg)+\Big(i\,(1-i)^{1/4}\,(1+i)^{1/4}\,\text{Sin}[x]\Big)\Big/$$

$$\Bigg((-1+i)^{3/2}\,\Big((-1-i)+\sqrt{1-i}\,\sqrt{1+i}\Big)\,\Bigg(-\frac{2\,(1-i)^{1/4}\,(1+i)^{1/4}}{\sqrt{-1+i}}-(1+i)\,\text{Cos}[x]+$$

$$\sqrt{1-i}\,\sqrt{1+i}\,\text{Cos}[x]+(1-i)\,\text{Sin}[x]-i\,\sqrt{1-i}\,\sqrt{1+i}\,\text{Sin}[x]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(-\frac{2^{1/4}\,\Big((1+i)+2\,(-1)^{5/8}-\sqrt{2}\Big)\,\Big(-1+\sqrt{2}\Big)\,\text{Sec}\left[\frac{x}{2}\right]^2}{1+\frac{\left(\frac{1}{4}-\frac{i}{4}\right)\left(-i\left((1+i)+\sqrt{2}\right)+\left((1+i)+2\,(-1)^{5/8}-\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]\right)^2}{\sqrt{2}}}+(-1)^{1/8}\,2^{1/4}$$

$$\Bigg(\Bigg(2\,\Bigg(\frac{\Big(1+\sqrt{2}\Big)\,\text{Cos}[x]-\text{Sin}[x]}{2\,(-1)^{5/8}+\Big(-1+\sqrt{2}\Big)\,\text{Cos}[x]+\text{Sin}[x]}-\Bigg(\Big(\text{Cos}[x]-\Big(-1+\sqrt{2}\Big)\,\text{Sin}[x]\Big)$$

$$\Big(\text{Cos}[x]+\Big(1+\sqrt{2}\Big)\,\text{Sin}[x]\Big)\Bigg)\Bigg/\Big(2\,(-1)^{5/8}+\Big(-1+\sqrt{2}\Big)\,\text{Cos}[x]+\text{Sin}[x]\Big)^2\Bigg)\Bigg)\Bigg/$$

$$\Bigg(1+\frac{\Big(\text{Cos}[x]+\Big(1+\sqrt{2}\Big)\,\text{Sin}[x]\Big)^2}{\Big(2\,(-1)^{5/8}+\Big(-1+\sqrt{2}\Big)\,\text{Cos}[x]+\text{Sin}[x]\Big)^2}\Bigg)-i\,\Bigg(2\,\Big(1+\sqrt{2}\Big)+2\,\text{Tan}\left[\frac{x}{2}\right]-$$

$$\Bigg(\text{Cos}\left[\frac{x}{2}\right]^4\,\Bigg(\text{Sec}\left[\frac{x}{2}\right]^4\,\Big(2\,(-1)^{5/8}\,\text{Cos}[x]+2\,\sqrt{2}\,\text{Cos}[2\,x]-2\,(-1)^{5/8}\,\Big(-1+\sqrt{2}\Big)\,\text{Sin}[x]+$$

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

$$\sqrt{2}\,\text{Cos}[2\,x]+2\,(-1)^{5/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Big)\,\text{Tan}\left[\frac{x}{2}\right]\Bigg)\Bigg)\Bigg/\Bigg(2-(1+i)\,\sqrt{2}+$$

$$2\,(-1)^{5/8}\,\Big(-1+\sqrt{2}\Big)\,\text{Cos}[x]-\sqrt{2}\,\text{Cos}[2\,x]+2\,(-1)^{5/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Bigg)\Bigg)\Bigg)$$

Problem 89: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Sec}[6\,x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 85 leaves, 7 steps):

$$-\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Cos}[x]\right]}{3\,\sqrt{2}}+\frac{\text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2-\sqrt{3}}}\right]}{6\,\sqrt{2-\sqrt{3}}}+\frac{\text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2+\sqrt{3}}}\right]}{6\,\sqrt{2+\sqrt{3}}}$$

Result (type 3, 678 leaves):

$$\left(\frac{1}{6}+\frac{i}{6}\right)(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\,\text{Sec}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\right]-\left(\frac{1}{6}+\frac{i}{6}\right)(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\,\text{Sec}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)\right]+\frac{1}{12\left(2+\sqrt{2}\right)}\left(1+\sqrt{2}\right)\left(x+2\sqrt{3}\,\text{ArcTanh}\left[\frac{2+\left(2+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{6}}\right]-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{2}-2\,\text{Cos}[x]+2\,\text{Sin}[x]\right)\right]\right)-\frac{1}{12\sqrt{2}}\left(x-2\sqrt{3}\,\text{ArcTanh}\left[\frac{\sqrt{2}+\left(-1+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\left(1+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right)\right]\right)+\left(\left(2\left(\sqrt{2}+\sqrt{3}\right)\text{ArcTanh}\left[\frac{2+\left(2+\sqrt{6}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}}\right]+\left(3+\sqrt{6}\right)\left(x-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{6}-2\,\text{Cos}[x]+2\,\text{Sin}[x]\right)\right]\right)\right)\left(1+\sqrt{6}\,\text{Sin}[x]\right)\left(3+\sqrt{6}-\left(2+\sqrt{6}\right)\text{Cos}[x]+\left(2+\sqrt{6}\right)\text{Sin}[x]\right)\right)\Big/\left(12\left(\left(12+5\sqrt{6}\right)\text{Cos}[2x]+2\,\text{Cos}[x]\left(5+2\sqrt{6}+5\sqrt{6}\,\text{Sin}[x]\right)-2\left(12+5\sqrt{6}+4\left(5+2\sqrt{6}\right)\text{Sin}[x]-6\,\text{Sin}[2x]\right)\right)\right)+\left(\left(-2\left(-2+\sqrt{6}\right)\text{ArcTanh}\left[\sqrt{2}+\left(\sqrt{2}-\sqrt{3}\right)\text{Tan}\left[\frac{x}{2}\right]\right]+\left(3\sqrt{2}-2\sqrt{3}\right)\left(x-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{3}+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right)\right]\right)\right)\left(\sqrt{2}-2\sqrt{3}\,\text{Sin}[x]\right)\left(-3+\sqrt{6}-\left(-2+\sqrt{6}\right)\text{Cos}[x]+\left(-2+\sqrt{6}\right)\text{Sin}[x]\right)\right)\Big/\left(24\left(\left(-12+5\sqrt{6}\right)\text{Cos}[2x]+2\,\text{Cos}[x]\left(-5+2\sqrt{6}+5\sqrt{6}\,\text{Sin}[x]\right)-2\left(-12+5\sqrt{6}+4\left(-5+2\sqrt{6}\right)\text{Sin}[x]+6\,\text{Sin}[2x]\right)\right)\right)$$

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

$$\int \text{Csc}[2x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 7 leaves, 2 steps):

$$\frac{1}{2}\,\text{ArcTanh}[\text{Sin}[x]]$$

Result (type 3, 37 leaves):

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

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

$$\int \text{Csc}[4\,x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 26 leaves, 4 steps):

$$-\frac{1}{4}\,\text{ArcTanh}[\text{Sin}[x]]+\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Sin}[x]\right]}{2\sqrt{2}}$$

Result (type 3, 218 leaves):

$$\frac{1}{8\sqrt{2}}\left(-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+\right.$$
$$2\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]-2\sqrt{2}\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]+2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[x]\right]-$$
$$\left.\text{Log}\left[2-\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]-\text{Log}\left[2+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]\right)$$

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

$$\int \text{Csc}[6\,x]\,\text{Sin}[x]\,dx$$

Optimal (type 3, 36 leaves, 7 steps):

$$\frac{1}{6}\,\text{ArcTanh}[\text{Sin}[x]]+\frac{1}{6}\,\text{ArcTanh}[2\,\text{Sin}[x]]-\frac{\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{3}}\right]}{2\sqrt{3}}$$

Result (type 3, 95 leaves):

$$\frac{1}{12}\left(-2\sqrt{3}\,\text{ArcTanh}\left[\frac{\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-2\sqrt{3}\,\text{ArcTanh}\left[\sqrt{3}\,\text{Tan}\left[\frac{x}{2}\right]\right]-\right.$$
$$\left.2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]+2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]-\text{Log}[1-2\,\text{Sin}[x]]+\text{Log}[1+2\,\text{Sin}[x]]\right)$$

Problem 105: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\ \text{Tan}[2\,x]\ dx$$

Optimal (type 3, 20 leaves, 4 steps):

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

Result (type 3, 183 leaves):

$$\frac{1}{4\sqrt{2}}\left(2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-\right.$$
$$2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+4\,\text{ArcTanh}\left[\sqrt{2}+\text{Tan}\left[\frac{x}{2}\right]\right]-$$
$$\left.4\sqrt{2}\ \text{Cos}[x]-\text{Log}\left[2-\sqrt{2}\ \text{Cos}[x]-\sqrt{2}\ \text{Sin}[x]\right]+\text{Log}\left[2+\sqrt{2}\ \text{Cos}[x]-\sqrt{2}\ \text{Sin}[x]\right]\right)$$

Problem 106: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\ \text{Tan}[3\,x]\ dx$$

Optimal (type 3, 21 leaves, 3 steps):

$$\frac{\text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{3}}\right]}{\sqrt{3}}-\text{Cos}[x]$$

Result (type 3, 48 leaves):

$$-\frac{\text{ArcTanh}\left[\frac{-2+\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]}{\sqrt{3}}+\frac{\text{ArcTanh}\left[\frac{2+\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]}{\sqrt{3}}-\text{Cos}[x]$$

Problem 107: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\ \text{Tan}[4\,x]\ dx$$

Optimal (type 3, 71 leaves, 6 steps):

$$\frac{1}{4}\sqrt{2-\sqrt{2}}\ \text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2-\sqrt{2}}}\right]+\frac{1}{4}\sqrt{2+\sqrt{2}}\ \text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2+\sqrt{2}}}\right]-\text{Cos}[x]$$

Result (type 3, 5854 leaves):

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

$$\text{ArcTan}\left[\frac{\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]}{2\,(-1)^{5/8}+\left(-1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]}\right]\Bigg)\Big/$$

$$\left(\left(-1-i\right)-2\,(-1)^{5/8}+\sqrt{2}\right)+\Bigg(4\times 2^{3/4}\left(\left(-1+i\right)+\sqrt{2}+\left(1-i\right)(-1)^{5/8}\sqrt{2}\right)$$

$$\text{ArcTanh}\left[\frac{-i\left(\left(1+i\right)+\sqrt{2}\right)+\left(\left(1+i\right)+2\,(-1)^{5/8}-\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{-1-i}\;2^{3/4}}\right]\Bigg)\Big/$$

$$\left(\sqrt{-1-i}\left(\left(1+i\right)+2\,(-1)^{5/8}-\sqrt{2}\right)\right)-\left(1-i\right)(-1)^{3/8}\sqrt{2}\left(-2+\sqrt{2}\right)\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+$$

$$\Bigg(i\sqrt{2}\left(\left(2+2\,i\right)-\left(1+3\,i\right)(-1)^{3/8}-\left(1+i\right)\sqrt{2}+\left(1+2\,i\right)(-1)^{3/8}\sqrt{2}\right)$$

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

$$2\,(-1)^{5/8}\,\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Big)\Big]\Bigg)\Big/\left(\left(-1-i\right)-2\,(-1)^{5/8}+\sqrt{2}\right)\Bigg)$$

$$\Bigg(\left(\frac{1}{2}+\frac{i}{2}\right)\Big/\Bigg(\left(\left(-1-i\right)+\sqrt{1-i}\,\sqrt{1+i}\right)\Bigg(-\frac{2\left(1-i\right)^{1/4}\left(1+i\right)^{1/4}}{\sqrt{-1+i}}-\left(1+i\right)\text{Cos}[x]+$$

$$\sqrt{1-i}\,\sqrt{1+i}\,\text{Cos}[x]+\left(1-i\right)\text{Sin}[x]-i\sqrt{1-i}\,\sqrt{1+i}\,\text{Sin}[x]\Bigg)\Bigg)+\left(2\,\text{Sin}[x]\right)\Big/$$

$$\Bigg(\left(-1+i\right)^{3/2}\left(1-i\right)^{3/4}\left(1+i\right)^{3/4}\left(\left(-1-i\right)+\sqrt{1-i}\,\sqrt{1+i}\right)\Bigg(-\frac{2\left(1-i\right)^{1/4}\left(1+i\right)^{1/4}}{\sqrt{-1+i}}-$$

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

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

$$\Bigg(-\frac{2\left(1-i\right)^{1/4}\left(1+i\right)^{1/4}}{\sqrt{-1+i}}-\left(1+i\right)\text{Cos}[x]+\sqrt{1-i}\,\sqrt{1+i}\,\text{Cos}[x]+$$

$$\left(1-i\right)\text{Sin}[x]-i\sqrt{1-i}\,\sqrt{1+i}\,\text{Sin}[x]\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(\left(2-2\,i\right)(-1)^{3/8}+\Bigg(2\sqrt{2}\left(\left(2+2\,i\right)-\left(1+3\,i\right)(-1)^{3/8}-\left(1+i\right)\sqrt{2}+\left(1+2\,i\right)(-1)^{3/8}\sqrt{2}\right)$$

$$\Bigg(\frac{\left(1+\sqrt{2}\right)\text{Cos}[x]-\text{Sin}[x]}{2\,(-1)^{5/8}+\left(-1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]}-$$

$$\frac{\left(\text{Cos}[x]-\left(-1+\sqrt{2}\right)\text{Sin}[x]\right)\left(\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)}{\left(2\,(-1)^{5/8}+\left(-1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]\right)^2}\Bigg)\Bigg)\Big/$$

$$\left(\left((-1-\mathrm{i})-2\,(-1)^{5/8}+\sqrt{2}\right)\left(1+\frac{\left(\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)^2}{\left(2\,(-1)^{5/8}+\left(-1+\sqrt{2}\right)\text{Cos}[x]+\text{Sin}[x]\right)^2}\right)\right)-$$

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

$$\Bigg(\mathrm{i}\sqrt{2}\left((2+2\,\mathrm{i})-(1+3\,\mathrm{i})\,(-1)^{3/8}-(1+\mathrm{i})\sqrt{2}+(1+2\,\mathrm{i})\,(-1)^{3/8}\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]^4$$

$$\Bigg(\text{Sec}\left[\frac{x}{2}\right]^4\Big(2\,(-1)^{5/8}\text{Cos}[x]+2\sqrt{2}\,\text{Cos}[2\,x]-2\,(-1)^{5/8}\left(-1+\sqrt{2}\right)\text{Sin}[x]+$$

$$2\sqrt{2}\,\text{Sin}[2\,x]\Big)+2\,\text{Sec}\left[\frac{x}{2}\right]^4\Big(2-(1+\mathrm{i})\sqrt{2}+2\,(-1)^{5/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]-$$

$$\sqrt{2}\,\text{Cos}[2\,x]+2\,(-1)^{5/8}\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Big)\text{Tan}\left[\frac{x}{2}\right]\Bigg)\Bigg)\Big/$$

$$\Big(\Big((-1-\mathrm{i})-2\,(-1)^{5/8}+\sqrt{2}\Big)\Big(2-(1+\mathrm{i})\sqrt{2}+2\,(-1)^{5/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]-$$

$$\sqrt{2}\,\text{Cos}[2\,x]+2\,(-1)^{5/8}\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Big)\Big)-$$

$$\left.\frac{(1-\mathrm{i})\left((-1+\mathrm{i})+\sqrt{2}+(1-\mathrm{i})\,(-1)^{5/8}\sqrt{2}\right)\text{Sec}\left[\frac{x}{2}\right]^2}{1+\frac{\left(\frac{1}{4}-\frac{\mathrm{i}}{4}\right)\left(-\mathrm{i}\left((1+\mathrm{i})+\sqrt{2}\right)+\left((1+\mathrm{i})+2\,(-1)^{5/8}-\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]\right)^2}{\sqrt{2}}}\right)+$$

$$\Bigg(\Bigg((-2+2\,\mathrm{i})\,(-1)^{5/8}\,x-\Bigg(2\sqrt{2}\left((-2-2\,\mathrm{i})-(3+\mathrm{i})\,(-1)^{5/8}+(1+\mathrm{i})\sqrt{2}+(2+\mathrm{i})\,(-1)^{5/8}\sqrt{2}\right)$$

$$\text{ArcTan}\left[\frac{-\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]}{2\,(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\,\text{Cos}[x]+\text{Sin}[x]}\right]\Bigg)\Big/\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)+$$

$$\Bigg(2\,(1-\mathrm{i})^{3/2}\,2^{3/4}\left((1+\mathrm{i})-\sqrt{2}+(1+\mathrm{i})\,(-1)^{3/8}\sqrt{2}\right)$$

$$\text{ArcTan}\left[\frac{(1+\mathrm{i})+\mathrm{i}\sqrt{2}+\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{1-\mathrm{i}}\;2^{3/4}}\right]\Bigg)\Big/$$

$$\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)-(1-\mathrm{i})\,(-1)^{5/8}\sqrt{2}\left(-2+\sqrt{2}\right)\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+$$

$$\Big(\mathrm{i}\sqrt{2}\left((-2-2\,\mathrm{i})-(3+\mathrm{i})\,(-1)^{5/8}+(1+\mathrm{i})\sqrt{2}+(2+\mathrm{i})\,(-1)^{5/8}\sqrt{2}\right)$$

$$\text{Log}\Big[-\text{Sec}\left[\frac{x}{2}\right]^4\Big(-2+(1-\mathrm{i})\sqrt{2}+2\,(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]+\sqrt{2}\,\text{Cos}[2\,x]-$$

$$2\,(-1)^{3/8}\text{Sin}[x]+\sqrt{2}\,\text{Sin}[2\,x]\Big)\Big]\Big)\Big/\left((-1+\mathrm{i})+2\,(-1)^{3/8}+\sqrt{2}\right)\Bigg)$$

$$\Bigg(-\Bigg(\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\Big/\Bigg(\Bigg(\left((-1+\mathrm{i})+\sqrt{1-\mathrm{i}}\,\sqrt{1+\mathrm{i}}\right)\left(-(-1-\mathrm{i})^{3/2}\,(1-\mathrm{i})^{1/4}\,(1+\mathrm{i})^{1/4}-(1+\mathrm{i})\,\text{Cos}[x]+\right.$$

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

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

$$\left((-2+2\,\mathbb{i})(-1)^{5/8}-\left(2\sqrt{2}\left((-2-2\,\mathbb{i})-(3+\mathbb{i})(-1)^{5/8}+(1+\mathbb{i})\sqrt{2}+(2+\mathbb{i})(-1)^{5/8}\sqrt{2}\right)\right.\right.$$

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

$$\left.\left.\left.\left(-\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)\right)\Big/\left(2(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\ \text{Cos}[x]+\text{Sin}[x]\right)^2\right)\right)\Big/$$

$$\left(\left((-1+\mathbb{i})+2(-1)^{3/8}+\sqrt{2}\right)\left(1+\frac{\left(-\text{Cos}[x]+\left(1+\sqrt{2}\right)\text{Sin}[x]\right)^2}{\left(2(-1)^{3/8}+\text{Cos}[x]-\sqrt{2}\ \text{Cos}[x]+\text{Sin}[x]\right)^2}\right)\right)-$$

$$(1-\mathbb{i})(-1)^{5/8}\sqrt{2}\left(-2+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]-$$
$$\left(\mathbb{i}\sqrt{2}\left((-2-2\,\mathbb{i})-(3+\mathbb{i})(-1)^{5/8}+(1+\mathbb{i})\sqrt{2}+(2+\mathbb{i})(-1)^{5/8}\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]^4\right.$$
$$\left(-\text{Sec}\left[\frac{x}{2}\right]^4\left(-2(-1)^{3/8}\ \text{Cos}[x]+2\sqrt{2}\ \text{Cos}[2x]-2(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Sin}[x]-\right.\right.$$
$$\left.2\sqrt{2}\ \text{Sin}[2x]\right)-2\ \text{Sec}\left[\frac{x}{2}\right]^4\left(-2+(1-\mathbb{i})\sqrt{2}+2(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]+\right.$$
$$\left.\left.\left.\sqrt{2}\ \text{Cos}[2x]-2(-1)^{3/8}\ \text{Sin}[x]+\sqrt{2}\ \text{Sin}[2x]\right)\text{Tan}\left[\frac{x}{2}\right]\right)\right)\Big/$$
$$\left(\left(\left((-1+\mathbb{i})+2(-1)^{3/8}+\sqrt{2}\right)\left(-2+(1-\mathbb{i})\sqrt{2}+2(-1)^{3/8}\left(-1+\sqrt{2}\right)\text{Cos}[x]+\right.\right.\right.$$
$$\left.\left.\sqrt{2}\ \text{Cos}[2x]-2(-1)^{3/8}\ \text{Sin}[x]+\sqrt{2}\ \text{Sin}[2x]\right)\right)+$$

$$\left.\frac{(1-\mathbb{i})\left((1+\mathbb{i})-\sqrt{2}+(1+\mathbb{i})(-1)^{3/8}\sqrt{2}\right)\text{Sec}\left[\frac{x}{2}\right]^2}{1+\frac{\left(\frac{1}{4}+\frac{\mathbb{i}}{4}\right)\left((1+\mathbb{i})+\mathbb{i}\sqrt{2}+\left((-1+\mathbb{i})+2(-1)^{3/8}+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]\right)^2}{\sqrt{2}}}\right)+$$

$$\left(\left(-2(-1)^{3/8}\left(1+(-1)^{1/4}\right)\left(-2+\sqrt{2}\right)\left(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\right)x-\right.\right.$$
$$2(-1)^{3/8}\left((4+4\,\mathbb{i})-2(-1)^{5/8}+2(-1)^{7/8}-(3+3\,\mathbb{i})\sqrt{2}+2(-1)^{5/8}\sqrt{2}-2(-1)^{7/8}\sqrt{2}\right)$$
$$\text{ArcTan}\left[\frac{\text{Sin}[x]}{-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\ \text{Cos}[x]+(-1)^{3/4}\ \text{Sin}[x]}\right]-(4+4\,\mathbb{i})$$

$$\Big(\big((-1+i)+(1+i)(-1)^{1/8}-(2+i)(-1)^{3/8}+(1+2i)(-1)^{7/8}+\sqrt{2}+(1-i)(-1)^{5/8}\sqrt{2}\big)$$

$$\text{ArcTan}\Big[\Big(\frac{1}{2}+\frac{i}{2}\Big)(-1)^{5/8}\Big(i+(-1)^{3/4}+\big(-1+(-1)^{1/4}-(-1)^{5/8}\sqrt{2}\big)\,\text{Tan}\Big[\frac{x}{2}\Big]\Big)\Big]+$$

$$2(-1)^{7/8}\big((-3-i)+(2+i)\sqrt{2}\big)\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)\,\text{Log}\Big[\text{Sec}\Big[\frac{x}{2}\Big]^2\Big]+$$

$$(-1)^{7/8}\big((4+4i)-2(-1)^{5/8}+2(-1)^{7/8}-(3+3i)\sqrt{2}+2(-1)^{5/8}\sqrt{2}-2(-1)^{7/8}\sqrt{2}\big)$$

$$\text{Log}\Big[\text{Sec}\Big[\frac{x}{2}\Big]^4\Big(1-3(-1)^{1/4}+2(-1)^{5/8}\sqrt{2}\,\big(-1+(-1)^{1/4}\big)\text{Cos}[x]-$$

$$\big(-i+(-1)^{1/4}\big)\text{Cos}[2x]+2(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2x]+(-1)^{3/4}\text{Sin}[2x]\Big)\Big]\Big)$$

$$\Big(-\Big(i\Big/\Big(\sqrt{1-i}\,\big((-1+i)+\sqrt{1-i}\sqrt{1+i}\big)^2\Big(-\sqrt{-1-i}\,(1-i)^{3/4}(1+i)^{1/4}-$$

$$\sqrt{1-i}\,\text{Cos}[x]+\sqrt{1+i}\,\text{Cos}[x]-i\sqrt{1-i}\,\text{Sin}[x]-i\sqrt{1+i}\,\text{Sin}[x]\Big)\Big)\Big)-$$

$$1\Big/\Big(\sqrt{1+i}\,\big((-1+i)+\sqrt{1-i}\sqrt{1+i}\big)^2\Big(-\sqrt{-1-i}\,(1-i)^{3/4}(1+i)^{1/4}-$$

$$\sqrt{1-i}\,\text{Cos}[x]+\sqrt{1+i}\,\text{Cos}[x]-i\sqrt{1-i}\,\text{Sin}[x]-i\sqrt{1+i}\,\text{Sin}[x]\Big)\Big)-$$

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

$$\Big(-\sqrt{-1-i}\,(1-i)^{3/4}(1+i)^{1/4}-\sqrt{1-i}\,\text{Cos}[x]+\sqrt{1+i}\,\text{Cos}[x]-$$

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

$$\Big(\sqrt{-1-i}\,(1-i)^{3/4}\big((-1+i)+\sqrt{1-i}\sqrt{1+i}\big)^2\Big(-\sqrt{-1-i}\,(1-i)^{3/4}(1+i)^{1/4}-$$

$$\sqrt{1-i}\,\text{Cos}[x]+\sqrt{1+i}\,\text{Cos}[x]-i\sqrt{1-i}\,\text{Sin}[x]-i\sqrt{1+i}\,\text{Sin}[x]\Big)\Big)\Big)\Big/$$

$$\Big(-2(-1)^{3/8}\big(1+(-1)^{1/4}\big)\big(-2+\sqrt{2}\big)\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)-$$

$$\Big(2(-1)^{3/8}\big((4+4i)-2(-1)^{5/8}+2(-1)^{7/8}-(3+3i)\sqrt{2}+2(-1)^{5/8}\sqrt{2}-2(-1)^{7/8}\sqrt{2}\big)$$

$$\Big(-\Big(\Big(\text{Sin}[x]\big((-1)^{3/4}\text{Cos}[x]-\text{Sin}[x]+(-1)^{1/4}\text{Sin}[x]\big)\Big)\Big/$$

$$\Big(-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]\Big)^2\Big)+$$

$$\frac{\text{Cos}[x]}{-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]}\Big)\Big)\Big/$$

$$\Big(1+\frac{\text{Sin}[x]^2}{\big(-(-1)^{5/8}\sqrt{2}+\text{Cos}[x]-(-1)^{1/4}\text{Cos}[x]+(-1)^{3/4}\text{Sin}[x]\big)^2}\Big)+$$

$$2(-1)^{7/8}\big((-3-i)+(2+i)\sqrt{2}\big)\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)\,\text{Tan}\Big[\frac{x}{2}\Big]+$$

$$\Big((-1)^{7/8}\big((4+4i)-2(-1)^{5/8}+2(-1)^{7/8}-(3+3i)\sqrt{2}+2(-1)^{5/8}\sqrt{2}-2(-1)^{7/8}\sqrt{2}\big)$$

$$\text{Cos}\left[\frac{x}{2}\right]^4 \left(\text{Sec}\left[\frac{x}{2}\right]^4 \left(2 (-1)^{3/8} \sqrt{2}\, \text{Cos}[x] + 2\,\text{Cos}[2 x] + 2 (-1)^{3/4} \text{Cos}[2 x] - 2 (-1)^{5/8} \sqrt{2} \left(-1 + (-1)^{1/4}\right) \text{Sin}[x] + 2 \left(-i + (-1)^{1/4}\right) \text{Sin}[2 x]\right) + 2\,\text{Sec}\left[\frac{x}{2}\right]^4 \left(1 - 3 (-1)^{1/4} + 2 (-1)^{5/8} \sqrt{2} \left(-1 + (-1)^{1/4}\right) \text{Cos}[x] - \left(-i + (-1)^{1/4}\right) \text{Cos}[2 x] + 2 (-1)^{3/8} \sqrt{2}\, \text{Sin}[x] + \text{Sin}[2 x] + (-1)^{3/4} \text{Sin}[2 x]\right) \text{Tan}\left[\frac{x}{2}\right]\right)\Big/$$

$$\left(1 - 3 (-1)^{1/4} + 2 (-1)^{5/8} \sqrt{2} \left(-1 + (-1)^{1/4}\right) \text{Cos}[x] - \left(-i + (-1)^{1/4}\right) \text{Cos}[2 x] + 2 (-1)^{3/8} \sqrt{2}\, \text{Sin}[x] + \text{Sin}[2 x] + (-1)^{3/4} \text{Sin}[2 x]\right) +$$

$$\left(2 (-1)^{1/8} \left(-1 + (-1)^{1/4} - (-1)^{5/8} \sqrt{2}\right) \left((-1 + i) + (1 + i) (-1)^{1/8} - (2 + i) (-1)^{3/8} + (1 + 2 i) (-1)^{7/8} + \sqrt{2} + (1 - i) (-1)^{5/8} \sqrt{2}\right) \text{Sec}\left[\frac{x}{2}\right]^2\right)\Big/$$

$$\left(1 - \frac{1}{2} (-1)^{3/4} \left(i + (-1)^{3/4} + \left(-1 + (-1)^{1/4} - (-1)^{5/8} \sqrt{2}\right) \text{Tan}\left[\frac{x}{2}\right]\right)^2\right)\Bigg) +$$

$$\Bigg(\Bigg(-2 (-1)^{3/8} \left(1 + (-1)^{1/4}\right) \left(-2 + \sqrt{2}\right) \left(1 - (-1)^{1/4} + (-1)^{5/8} \sqrt{2}\right) x +$$

$$2 (-1)^{3/8} \left((4 + 4 i) - 2 (-1)^{5/8} + 2 (-1)^{7/8} - (3 + 3 i) \sqrt{2} + 2 (-1)^{5/8} \sqrt{2} - 2 (-1)^{7/8} \sqrt{2}\right)$$

$$\text{ArcTan}\left[\frac{\text{Sin}[x]}{\left(-1 + (-1)^{1/4}\right) \text{Cos}[x] + (-1)^{5/8} \left(\sqrt{2} + (-1)^{1/8} \text{Sin}[x]\right)}\right] + (4 + 4 i)$$

$$\left((-1 + i) + (1 + i) (-1)^{1/8} - (2 + i) (-1)^{3/8} + (1 + 2 i) (-1)^{7/8} + \sqrt{2} + (1 - i) (-1)^{5/8} \sqrt{2}\right)$$

$$\text{ArcTan}\left[\left(\frac{1}{2} + \frac{i}{2}\right) (-1)^{5/8} \left(i + (-1)^{3/4} + \left(1 - (-1)^{1/4} + (-1)^{5/8} \sqrt{2}\right) \text{Tan}\left[\frac{x}{2}\right]\right)\right] +$$

$$2 (-1)^{7/8} \left((3 + i) - (2 + i) \sqrt{2}\right) \left(1 - (-1)^{1/4} + (-1)^{5/8} \sqrt{2}\right) \text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right] -$$

$$(-1)^{7/8} \left((4 + 4 i) - 2 (-1)^{5/8} + 2 (-1)^{7/8} - (3 + 3 i) \sqrt{2} + 2 (-1)^{5/8} \sqrt{2} - 2 (-1)^{7/8} \sqrt{2}\right)$$

$$\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^4 \left(-1 + 3 (-1)^{1/4} - 2 (-1)^{5/8} \sqrt{2} \left(-1 + (-1)^{1/4}\right) \text{Cos}[x] + \left(-i + (-1)^{1/4}\right) \text{Cos}[2 x] + 2 (-1)^{3/8} \sqrt{2}\, \text{Sin}[x] + \text{Sin}[2 x] + (-1)^{3/4} \text{Sin}[2 x]\right)\right]\Bigg)$$

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

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

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

$$\left(\sqrt{-1 + i} (1 - i)^{3/4} (1 + i)^{1/4} \left((-1 - i) + \sqrt{1 - i} \sqrt{1 + i}\right)^2 \left(\sqrt{-1 + i} (1 - i)^{1/4} (1 + i)^{3/4} -\right.\right.$$

$$\sqrt{1-\mathrm{i}}\ \text{Cos}[x]+\sqrt{1+\mathrm{i}}\ \text{Cos}[x]+\mathrm{i}\sqrt{1-\mathrm{i}}\ \text{Sin}[x]+\mathrm{i}\sqrt{1+\mathrm{i}}\ \text{Sin}[x]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(-2\,(-1)^{3/8}\,\big(1+(-1)^{1/4}\big)\,\big(-2+\sqrt{2}\big)\,\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)+$$

$$\Big(2\,(-1)^{3/8}\,\big((4+4\,\mathrm{i})-2\,(-1)^{5/8}+2\,(-1)^{7/8}-(3+3\,\mathrm{i})\sqrt{2}+2\,(-1)^{5/8}\sqrt{2}-2\,(-1)^{7/8}\sqrt{2}\big)$$

$$\Big(-\Big(\Big(\text{Sin}[x]\,\big((-1)^{3/4}\,\text{Cos}[x]-\big(-1+(-1)^{1/4}\big)\,\text{Sin}[x]\big)\Big)\Big/$$

$$\Big(\big(-1+(-1)^{1/4}\big)\,\text{Cos}[x]+(-1)^{5/8}\,\big(\sqrt{2}+(-1)^{1/8}\,\text{Sin}[x]\big)\Big)^2\Big)+$$

$$\frac{\text{Cos}[x]}{\big(-1+(-1)^{1/4}\big)\,\text{Cos}[x]+(-1)^{5/8}\,\big(\sqrt{2}+(-1)^{1/8}\,\text{Sin}[x]\big)}\Big)\Big)\Big/$$

$$\left(1+\frac{\text{Sin}[x]^2}{\Big(\big(-1+(-1)^{1/4}\big)\,\text{Cos}[x]+(-1)^{5/8}\,\big(\sqrt{2}+(-1)^{1/8}\,\text{Sin}[x]\big)\Big)^2}\right)+$$

$$2\,(-1)^{7/8}\,\big((3+\mathrm{i})-(2+\mathrm{i})\sqrt{2}\big)\,\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)\,\text{Tan}\Big[\frac{x}{2}\Big]+$$

$$\Big((-1)^{7/8}\,\big((4+4\,\mathrm{i})-2\,(-1)^{5/8}+2\,(-1)^{7/8}-(3+3\,\mathrm{i})\sqrt{2}+2\,(-1)^{5/8}\sqrt{2}-2\,(-1)^{7/8}\sqrt{2}\big)$$

$$\text{Cos}\Big[\frac{x}{2}\Big]^4\,\Big(-\text{Sec}\Big[\frac{x}{2}\Big]^4\,\Big(2\,(-1)^{3/8}\sqrt{2}\,\text{Cos}[x]+2\,\text{Cos}[2\,x]+2\,(-1)^{3/4}\,\text{Cos}[2\,x]+$$

$$2\,(-1)^{5/8}\sqrt{2}\,\big(-1+(-1)^{1/4}\big)\,\text{Sin}[x]-2\,\big(-\mathrm{i}+(-1)^{1/4}\big)\,\text{Sin}[2\,x]\Big)-$$

$$2\,\text{Sec}\Big[\frac{x}{2}\Big]^4\,\Big(-1+3\,(-1)^{1/4}-2\,(-1)^{5/8}\sqrt{2}\,\big(-1+(-1)^{1/4}\big)\,\text{Cos}[x]+\big(-\mathrm{i}+(-1)^{1/4}\big)$$

$$\text{Cos}[2\,x]+2\,(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2\,x]+(-1)^{3/4}\,\text{Sin}[2\,x]\Big)\,\text{Tan}\Big[\frac{x}{2}\Big]\Big)\Big)\Big/$$

$$\Big(-1+3\,(-1)^{1/4}-2\,(-1)^{5/8}\sqrt{2}\,\big(-1+(-1)^{1/4}\big)\,\text{Cos}[x]+\big(-\mathrm{i}+(-1)^{1/4}\big)\,\text{Cos}[2\,x]+$$

$$2\,(-1)^{3/8}\sqrt{2}\,\text{Sin}[x]+\text{Sin}[2\,x]+(-1)^{3/4}\,\text{Sin}[2\,x]\Big)-$$

$$\Big(2\,(-1)^{1/8}\,\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)\,\Big((-1+\mathrm{i})+(1+\mathrm{i})\,(-1)^{1/8}-(2+\mathrm{i})\,(-1)^{3/8}+$$

$$(1+2\,\mathrm{i})\,(-1)^{7/8}+\sqrt{2}+(1-\mathrm{i})\,(-1)^{5/8}\sqrt{2}\Big)\,\text{Sec}\Big[\frac{x}{2}\Big]^2\Big)\Big/$$

$$\left(1-\frac{1}{2}\,(-1)^{3/4}\,\Big(\mathrm{i}+(-1)^{3/4}+\big(1-(-1)^{1/4}+(-1)^{5/8}\sqrt{2}\big)\,\text{Tan}\Big[\frac{x}{2}\Big]\Big)^2\right)\Big)$$

Problem 108: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\,\text{Tan}[5\,x]\,dx$$

Optimal (type 3, 84 leaves, 6 steps):

$$\frac{1}{5}\sqrt{\frac{1}{2}\left(5+\sqrt{5}\right)}\ \text{ArcTanh}\left[2\sqrt{\frac{2}{5+\sqrt{5}}}\ \text{Cos}[x]\right]+$$

$$\frac{1}{5}\sqrt{\frac{1}{2}\left(5-\sqrt{5}\right)}\ \text{ArcTanh}\left[\sqrt{\frac{2}{5}\left(5+\sqrt{5}\right)}\ \text{Cos}[x]\right]-\text{Cos}[x]$$

Result (type 3, 215 leaves):

$$\frac{\left(1+\sqrt{5}\right)\text{ArcTanh}\left[\frac{4-\left(-1+\sqrt{5}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2\left(5+\sqrt{5}\right)}}\right]}{\sqrt{10\left(5+\sqrt{5}\right)}}+\frac{\left(1+\sqrt{5}\right)\text{ArcTanh}\left[\frac{4+\left(-1+\sqrt{5}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2\left(5+\sqrt{5}\right)}}\right]}{\sqrt{10\left(5+\sqrt{5}\right)}}+$$

$$\frac{\left(-1+\sqrt{5}\right)\text{ArcTanh}\left[\frac{4-\left(1+\sqrt{5}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{10-2\sqrt{5}}}\right]}{\sqrt{50-10\sqrt{5}}}+\frac{\left(-1+\sqrt{5}\right)\text{ArcTanh}\left[\frac{4+\left(1+\sqrt{5}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{10-2\sqrt{5}}}\right]}{\sqrt{50-10\sqrt{5}}}-\text{Cos}[x]$$

Problem 109: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\ \text{Tan}[6\,x]\,dx$$

Optimal (type 3, 89 leaves, 10 steps):

$$\frac{\text{ArcTanh}\left[\sqrt{2}\ \text{Cos}[x]\right]}{3\sqrt{2}}+\frac{1}{6}\sqrt{2-\sqrt{3}}\ \text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2-\sqrt{3}}}\right]+$$

$$\frac{1}{6}\sqrt{2+\sqrt{3}}\ \text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{2+\sqrt{3}}}\right]-\text{Cos}[x]$$

Result (type 3, 776 leaves):

$$\left(-\frac{1}{6}-\frac{i}{6}\right)(-1)^{1/4}\,\text{ArcTan}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{1/4}\,\text{Sec}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\right]+$$
$$\left(\frac{1}{6}+\frac{i}{6}\right)(-1)^{3/4}\,\text{ArcTanh}\left[\left(\frac{1}{2}+\frac{i}{2}\right)(-1)^{3/4}\,\text{Sec}\left[\frac{x}{2}\right]\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)\right]-$$
$$\text{Cos}[x]+\frac{1}{12\sqrt{2}}\left(x+2\sqrt{3}\,\text{ArcTanh}\left[\frac{\sqrt{2}+\left(-1+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-\right.$$
$$\left.\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\left(1+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right)\right]\right)+$$
$$\left(\left(1+\sqrt{2}\right)\left(x-2\sqrt{3}\,\text{ArcTanh}\left[\frac{2+\left(2+\sqrt{2}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{6}}\right]-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\right.\right.$$
$$\left.\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{2}-2\,\text{Cos}[x]+2\,\text{Sin}[x]\right)\right]\right)$$
$$\left.\left(2+\sqrt{2}\,\text{Sin}[x]\right)\left(1+\sqrt{2}-\left(2+\sqrt{2}\right)\text{Cos}[x]+\left(2+\sqrt{2}\right)\text{Sin}[x]\right)\right)\Big/$$
$$\left(12\left(-12-9\sqrt{2}+4\left(3+2\sqrt{2}\right)\text{Cos}[x]+\left(4+3\sqrt{2}\right)\text{Cos}[2x]-18\,\text{Sin}[x]-12\sqrt{2}\,\text{Sin}[x]+\right.\right.$$
$$\left.\left.4\,\text{Sin}[2x]+3\sqrt{2}\,\text{Sin}[2x]\right)\right)-\left(\left(2\left(-2+\sqrt{6}\right)\text{ArcTanh}\left[\sqrt{2}+\left(\sqrt{2}-\sqrt{3}\right)\text{Tan}\left[\frac{x}{2}\right]\right]+\right.\right.$$
$$\left.\left(3\sqrt{2}-2\sqrt{3}\right)\left(x-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{3}+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right)\right]\right)\right)$$
$$\left.\left(\sqrt{2}-\sqrt{3}\,\text{Sin}[x]\right)\left(-3+\sqrt{6}-\left(-2+\sqrt{6}\right)\text{Cos}[x]+\left(-2+\sqrt{6}\right)\text{Sin}[x]\right)\right)\Big/$$
$$\left(12\left(-36+15\sqrt{6}+\left(20-8\sqrt{6}\right)\text{Cos}[x]+\left(12-5\sqrt{6}\right)\text{Cos}[2x]-\right.\right.$$
$$\left.\left.50\,\text{Sin}[x]+20\sqrt{6}\,\text{Sin}[x]+12\,\text{Sin}[2x]-5\sqrt{6}\,\text{Sin}[2x]\right)\right)+$$
$$\left(\left(-2\left(\sqrt{2}+\sqrt{3}\right)\text{ArcTanh}\left[\frac{2+\left(2+\sqrt{6}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}}\right]+\right.\right.$$
$$\left.\left(3+\sqrt{6}\right)\left(x-\text{Log}\left[\text{Sec}\left[\frac{x}{2}\right]^2\right]+\text{Log}\left[-\text{Sec}\left[\frac{x}{2}\right]^2\left(\sqrt{6}-2\,\text{Cos}[x]+2\,\text{Sin}[x]\right)\right]\right)\right)$$
$$\left.\left(2+\sqrt{6}\,\text{Sin}[x]\right)\left(3+\sqrt{6}-\left(2+\sqrt{6}\right)\text{Cos}[x]+\left(2+\sqrt{6}\right)\text{Sin}[x]\right)\right)\Big/$$
$$\left(12\left(-36-15\sqrt{6}+4\left(5+2\sqrt{6}\right)\text{Cos}[x]+\left(12+5\sqrt{6}\right)\text{Cos}[2x]-\right.\right.$$
$$\left.\left.50\,\text{Sin}[x]-20\sqrt{6}\,\text{Sin}[x]+12\,\text{Sin}[2x]+5\sqrt{6}\,\text{Sin}[2x]\right)\right)$$

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

$$\int \text{Cos}[x]\,\text{Cot}[2x]\,dx$$

Optimal (type 3, 10 leaves, 4 steps):

$$-\frac{1}{2}\text{ArcTanh}[\text{Cos}[x]]+\text{Cos}[x]$$

Result (type 3, 25 leaves):

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

Problem 112: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\,\text{Cot}[4\,x]\,dx$$

Optimal (type 3, 28 leaves, 6 steps):

$$-\frac{1}{4}\text{ArcTanh}[\text{Cos}[x]]-\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Cos}[x]\right]}{2\sqrt{2}}+\text{Cos}[x]$$

Result (type 3, 73 leaves):

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

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

$$\int \text{Cos}[x]\,\text{Cot}[6\,x]\,dx$$

Optimal (type 3, 38 leaves, 7 steps):

$$-\frac{1}{6}\text{ArcTanh}[\text{Cos}[x]]-\frac{1}{6}\text{ArcTanh}[2\,\text{Cos}[x]]-\frac{\text{ArcTanh}\left[\frac{2\,\text{Cos}[x]}{\sqrt{3}}\right]}{2\sqrt{3}}+\text{Cos}[x]$$

Result (type 3, 87 leaves):

$$\frac{1}{12}\left(2\sqrt{3}\,\text{ArcTanh}\left[\frac{-2+\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-2\sqrt{3}\,\text{ArcTanh}\left[\frac{2+\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]+12\,\text{Cos}[x]-2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]+\text{Log}[1-2\,\text{Cos}[x]]-\text{Log}[1+2\,\text{Cos}[x]]+2\,\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]\right)$$

Problem 116: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\,\text{Sec}[2x]\,dx$$

Optimal (type 3, 15 leaves, 2 steps):

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

Result (type 3, 174 leaves):

$$\frac{1}{4\sqrt{2}}\left(-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+\right.$$
$$\left.2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[x]\right]-\text{Log}\left[2-\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]-\text{Log}\left[2+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]\right)$$

Problem 118: Result is not expressed in closed-form.

$$\int \text{Cos}[x]\,\text{Sec}[4x]\,dx$$

Optimal (type 3, 71 leaves, 4 steps):

$$\frac{\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2-\sqrt{2}}}\right]}{2\sqrt{2\left(2-\sqrt{2}\right)}}-\frac{\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2+\sqrt{2}}}\right]}{2\sqrt{2\left(2+\sqrt{2}\right)}}$$

Result (type 7, 91 leaves):

$$\frac{1}{16}\,\text{RootSum}\left[1+\#1^8\,\&,\ \frac{1}{\#1^5}\left(2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]+\right.\right.$$
$$\left.\left.2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^2-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^2\right)\,\&\right]$$

Problem 120: Result is not expressed in closed-form.

$$\int \text{Cos}[x]\,\text{Sec}[6x]\,dx$$

Optimal (type 3, 85 leaves, 7 steps):

$$-\frac{\text{ArcTanh}\left[\sqrt{2}\,\text{Sin}[x]\right]}{3\sqrt{2}}+\frac{\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2-\sqrt{3}}}\right]}{6\sqrt{2-\sqrt{3}}}+\frac{\text{ArcTanh}\left[\frac{2\,\text{Sin}[x]}{\sqrt{2+\sqrt{3}}}\right]}{6\sqrt{2+\sqrt{3}}}$$

Result (type 7, 356 leaves):

$$\frac{1}{24}\left(\sqrt{2}\left(2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]+2\,i\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{2}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}\right]-2\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}[x]\right]+\text{Log}\left[2-\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]+\text{Log}\left[2+\sqrt{2}\,\text{Cos}[x]-\sqrt{2}\,\text{Sin}[x]\right]\right)+\text{RootSum}\left[1-\#1^4+\#1^8\,\&,\ \frac{1}{-\#1^3+2\,\#1^7}\left(2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]+2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^2-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^2+2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^4-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^4+2\,\text{ArcTan}\left[\frac{\text{Sin}[x]}{\text{Cos}[x]-\#1}\right]\#1^6-i\,\text{Log}\left[1-2\,\text{Cos}[x]\,\#1+\#1^2\right]\#1^6\right)\&\right]\right)$$

Problem 121: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[2\,x]\,\text{Sec}[x]\,dx$$

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

$$-\text{ArcTanh}[\text{Sin}[x]]+2\,\text{Sin}[x]$$

Result (type 3, 37 leaves):

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

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

$$\int \text{Cos}[x]\,\text{Csc}[2\,x]\,dx$$

Optimal (type 3, 7 leaves, 2 steps):

$$-\frac{1}{2}\,\text{ArcTanh}[\text{Cos}[x]]$$

Result (type 3, 21 leaves):

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

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

$$\int \mathrm{Cos}[x]\,\mathrm{Csc}[4\,x]\,dx$$

Optimal (type 3, 26 leaves, 4 steps):

$$-\frac{1}{4}\,\mathrm{ArcTanh}[\mathrm{Cos}[x]]+\frac{\mathrm{ArcTanh}\left[\sqrt{2}\,\mathrm{Cos}[x]\right]}{2\,\sqrt{2}}$$

Result (type 3, 66 leaves):

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

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

$$\int \mathrm{Cos}[x]\,\mathrm{Csc}[6\,x]\,dx$$

Optimal (type 3, 36 leaves, 7 steps):

$$-\frac{1}{6}\,\mathrm{ArcTanh}[\mathrm{Cos}[x]]-\frac{1}{6}\,\mathrm{ArcTanh}[2\,\mathrm{Cos}[x]]+\frac{\mathrm{ArcTanh}\left[\frac{2\,\mathrm{Cos}[x]}{\sqrt{3}}\right]}{2\,\sqrt{3}}$$

Result (type 3, 83 leaves):

$$\frac{1}{12}\left(-2\,\sqrt{3}\,\mathrm{ArcTanh}\left[\frac{-2+\mathrm{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]+2\,\sqrt{3}\,\mathrm{ArcTanh}\left[\frac{2+\mathrm{Tan}\left[\frac{x}{2}\right]}{\sqrt{3}}\right]-2\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]\right]+\mathrm{Log}[1-2\,\mathrm{Cos}[x]]-\mathrm{Log}[1+2\,\mathrm{Cos}[x]]+2\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)$$

Problem 174: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 186 leaves, 11 steps):

$$c\,\text{Cos}[e]\,\text{CosIntegral}[f x]\,\text{Sec}[e+f x]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}+\frac{1}{2}c\,\text{CosIntegral}[2 f x]\,\text{Sec}[e+f x]\,\text{Sin}[2 e]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}-c\,\text{Sec}[e+f x]\,\text{Sin}[e]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}\,\text{SinIntegral}[f x]+\frac{1}{2}c\,\text{Cos}[2 e]\,\text{Sec}[e+f x]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}\,\text{SinIntegral}[2 f x]$$

Result (type 4, 150 leaves):

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

Problem 175: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 273 leaves, 13 steps):

$$-\frac{c\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}}{x}+c f\,\text{Cos}[2 e]\,\text{CosIntegral}[2 f x]\,\text{Sec}[e+f x]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}-c f\,\text{CosIntegral}[f x]\,\text{Sec}[e+f x]\,\text{Sin}[e]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}-\frac{c\,\text{Sec}[e+f x]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}\,\text{Sin}[2 e+2 f x]}{2 x}-c f\,\text{Cos}[e]\,\text{Sec}[e+f x]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}\,\text{SinIntegral}[f x]-c f\,\text{Sec}[e+f x]\,\text{Sin}[2 e]\,\sqrt{a-a\,\text{Sin}[e+f x]}\,\sqrt{c+c\,\text{Sin}[e+f x]}\,\text{SinIntegral}[2 f x]$$

Result (type 4, 231 leaves):

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

Problem 176: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 4, 385 leaves, 15 steps):

$$-\frac{c\sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}}{2\,x^2}-\frac{1}{2\,x}$$
$$c\,f\,\text{Cos}[2\,e+2\,f\,x]\ \text{Sec}[e+f\,x]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ -$$
$$\frac{1}{2}\,c\,f^2\,\text{Cos}[e]\ \text{CosIntegral}[f\,x]\ \text{Sec}[e+f\,x]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ -$$
$$c\,f^2\,\text{CosIntegral}[2\,f\,x]\ \text{Sec}[e+f\,x]\ \text{Sin}[2\,e]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ -$$
$$\frac{c\,\text{Sec}[e+f\,x]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ \text{Sin}[2\,e+2\,f\,x]}{4\,x^2}+$$
$$\frac{1}{2}\,c\,f^2\,\text{Sec}[e+f\,x]\ \text{Sin}[e]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ \text{SinIntegral}[f\,x]\ -$$
$$c\,f^2\,\text{Cos}[2\,e]\ \text{Sec}[e+f\,x]\ \sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ \text{SinIntegral}[2\,f\,x]\ +$$
$$\frac{c\,f\,\sqrt{a-a\,\text{Sin}[e+f\,x]}\ \sqrt{c+c\,\text{Sin}[e+f\,x]}\ \text{Tan}[e+f\,x]}{2\,x}$$

Result (type 4, 317 leaves):

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

Problem 182: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 3, 280 leaves, 34 steps):

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

Result (type 3, 178 leaves):

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

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

$$\int (a + a \operatorname{Cos}[x]) \, (A + B \operatorname{Sec}[x]) \, dx$$

Optimal (type 3, 18 leaves, 5 steps):

$$a (A + B) x + a B \operatorname{ArcTanh}[\operatorname{Sin}[x]] + a A \operatorname{Sin}[x]$$

Result (type 3, 51 leaves):

$$a A x + a B x - a B \operatorname{Log}\left[\operatorname{Cos}\left[\frac{x}{2}\right] - \operatorname{Sin}\left[\frac{x}{2}\right]\right] + a B \operatorname{Log}\left[\operatorname{Cos}\left[\frac{x}{2}\right] + \operatorname{Sin}\left[\frac{x}{2}\right]\right] + a A \operatorname{Sin}[x]$$

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

$$\int \frac{A + B \operatorname{Sec}[x]}{a + a \operatorname{Cos}[x]} \, dx$$

Optimal (type 3, 25 leaves, 4 steps):

$$\frac{B \operatorname{ArcTanh}[\operatorname{Sin}[x]]}{a} + \frac{(A - B) \operatorname{Sin}[x]}{a + a \operatorname{Cos}[x]}$$

Result (type 3, 71 leaves):

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

Problem 193: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a + a \operatorname{Cos}[x])^{5/2} \, (A + B \operatorname{Sec}[x]) \, dx$$

Optimal (type 3, 98 leaves, 6 steps):

$$2 a^{5/2} B \operatorname{ArcTanh}\left[\frac{\sqrt{a} \operatorname{Sin}[x]}{\sqrt{a + a \operatorname{Cos}[x]}}\right] + \frac{2 a^3 (32 A + 35 B) \operatorname{Sin}[x]}{15 \sqrt{a + a \operatorname{Cos}[x]}} + \frac{2}{15} a^2 (8 A + 5 B) \sqrt{a + a \operatorname{Cos}[x]} \operatorname{Sin}[x] + \frac{2}{5} a A (a + a \operatorname{Cos}[x])^{3/2} \operatorname{Sin}[x]$$

Result (type 3, 283 leaves):

$$\frac{1}{60} a^2 \sqrt{a\,(1+\text{Cos}[x])}\ \text{Sec}\left[\frac{x}{2}\right] \left(-30\,i\,\sqrt{2}\ \text{B ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-\right.$$
$$30\,i\,\sqrt{2}\ \text{B ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]+30\sqrt{2}\ \text{B Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{x}{2}\right]\right]-$$
$$15\sqrt{2}\ \text{B Log}\left[2-\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]-15\sqrt{2}\ \text{B Log}\left[2+\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]+$$
$$\left.300\,\text{A Sin}\left[\frac{x}{2}\right]+300\,\text{B Sin}\left[\frac{x}{2}\right]+50\,\text{A Sin}\left[\frac{3x}{2}\right]+20\,\text{B Sin}\left[\frac{3x}{2}\right]+6\,\text{A Sin}\left[\frac{5x}{2}\right]\right)$$

Problem 194: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$2\,a^{3/2}\,\text{B ArcTanh}\left[\frac{\sqrt{a}\ \text{Sin}[x]}{\sqrt{a+a\,\text{Cos}[x]}}\right]+\frac{2\,a^2\,(4\,A+3\,B)\,\text{Sin}[x]}{3\sqrt{a+a\,\text{Cos}[x]}}+\frac{2}{3}\,a\,A\sqrt{a+a\,\text{Cos}[x]}\ \text{Sin}[x]$$

Result (type 3, 263 leaves):

$$\frac{1}{12} a \sqrt{a\,(1+\text{Cos}[x])}\ \text{Sec}\left[\frac{x}{2}\right] \left(-6\,i\,\sqrt{2}\ \text{B ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-\right.$$
$$6\,i\,\sqrt{2}\ \text{B ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]+$$
$$6\sqrt{2}\ \text{B Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{x}{2}\right]\right]-3\sqrt{2}\ \text{B Log}\left[2-\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]-$$
$$\left.3\sqrt{2}\ \text{B Log}\left[2+\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]+36\,\text{A Sin}\left[\frac{x}{2}\right]+24\,\text{B Sin}\left[\frac{x}{2}\right]+4\,\text{A Sin}\left[\frac{3x}{2}\right]\right)$$

Problem 195: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \sqrt{a+a\,\text{Cos}[x]}\ (A+B\,\text{Sec}[x])\,dx$$

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

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

Result (type 3, 244 leaves):

$$\frac{1}{4}\sqrt{a\left(1+\text{Cos}[x]\right)}\ \text{Sec}\left[\frac{x}{2}\right]\left(-2\,i\,\sqrt{2}\ \text{B}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-\right.$$
$$2\,i\,\sqrt{2}\ \text{B}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]+$$
$$2\sqrt{2}\ \text{B}\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{x}{2}\right]\right]-\sqrt{2}\ \text{B}\,\text{Log}\left[2-\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]-$$
$$\left.\sqrt{2}\ \text{B}\,\text{Log}\left[2+\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]+8\,\text{A}\,\text{Sin}\left[\frac{x}{2}\right]\right)$$

Problem 196: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{A}+\text{B}\,\text{Sec}[x]}{\sqrt{a+a\,\text{Cos}[x]}}\,dx$$

Optimal (type 3, 68 leaves, 6 steps):

$$\frac{2\,\text{B}\,\text{ArcTanh}\left[\frac{\sqrt{a}\ \text{Sin}[x]}{\sqrt{a+a\,\text{Cos}[x]}}\right]}{\sqrt{a}}+\frac{\sqrt{2}\ (\text{A}-\text{B})\ \text{ArcTanh}\left[\frac{\sqrt{a}\ \text{Sin}[x]}{\sqrt{2}\ \sqrt{a+a\,\text{Cos}[x]}}\right]}{\sqrt{a}}$$

Result (type 3, 307 leaves):

$$\frac{1}{2\sqrt{a\left(1+\text{Cos}[x]\right)}}\text{Cos}\left[\frac{x}{2}\right]\left(-2\,i\,\sqrt{2}\ \text{B}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-\right.$$
$$2\,i\,\sqrt{2}\ \text{B}\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-4\,\text{A}\,\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]\right]+$$
$$4\,\text{B}\,\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]\right]+4\,\text{A}\,\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]+\text{Sin}\left[\frac{x}{4}\right]\right]-$$
$$4\,\text{B}\,\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]+\text{Sin}\left[\frac{x}{4}\right]\right]+2\sqrt{2}\ \text{B}\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{x}{2}\right]\right]-$$
$$\left.\sqrt{2}\ \text{B}\,\text{Log}\left[2-\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]-\sqrt{2}\ \text{B}\,\text{Log}\left[2+\sqrt{2}\ \text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\ \text{Sin}\left[\frac{x}{2}\right]\right]\right)$$

Problem 197: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 92 leaves, 7 steps):

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

Result (type 3, 524 leaves):

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

Problem 198: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{A+B\,\text{Sec}[x]}{(a+a\,\text{Cos}[x])^{5/2}}\,dx$$

Optimal (type 3, 120 leaves, 8 steps):

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

Result (type 3, 393 leaves):

$$\frac{1}{8\left(a\left(1+\text{Cos}[x]\right)\right)^{5/2}\left(B+A\,\text{Cos}[x]\right)}$$

$$\text{Cos}\left[\frac{x}{2}\right]^5 \text{Cos}[x]\left(A+B\,\text{Sec}[x]\right)\left(-32\,\mathrm{i}\,\sqrt{2}\,B\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(-1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]-\right.$$

$$32\,\mathrm{i}\,\sqrt{2}\,B\,\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{4}\right]-\left(1+\sqrt{2}\right)\text{Sin}\left[\frac{x}{4}\right]}{\left(-1+\sqrt{2}\right)\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]}\right]+2\left(-3\,A+43\,B\right)\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]\right]+$$

$$2\left(3\,A-43\,B\right)\text{Log}\left[\text{Cos}\left[\frac{x}{4}\right]+\text{Sin}\left[\frac{x}{4}\right]\right]+32\sqrt{2}\,B\,\text{Log}\left[\sqrt{2}+2\,\text{Sin}\left[\frac{x}{2}\right]\right]-$$

$$16\sqrt{2}\,B\,\text{Log}\left[2-\sqrt{2}\,\text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\,\text{Sin}\left[\frac{x}{2}\right]\right]-16\sqrt{2}\,B\,\text{Log}\left[2+\sqrt{2}\,\text{Cos}\left[\frac{x}{2}\right]-\sqrt{2}\,\text{Sin}\left[\frac{x}{2}\right]\right]+$$

$$\left.\frac{A-B}{\left(\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]\right)^4}+\frac{3\,A-11\,B}{\left(\text{Cos}\left[\frac{x}{4}\right]-\text{Sin}\left[\frac{x}{4}\right]\right)^2}+\frac{-A+B}{\left(\text{Cos}\left[\frac{x}{4}\right]+\text{Sin}\left[\frac{x}{4}\right]\right)^4}+\frac{-3\,A+11\,B}{\left(\text{Cos}\left[\frac{x}{4}\right]+\text{Sin}\left[\frac{x}{4}\right]\right)^2}\right)$$

Problem 228: Result unnecessarily involves imaginary or complex numbers.

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

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

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

Result (type 3, 132 leaves):

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

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

$$\left(2\left(a-\mathrm{i}\,b\right)^2\left(a+\mathrm{i}\,b\right)^2 d\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^2\right)$$

Problem 232: Result unnecessarily involves higher level functions.

$$\int \left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{7/2}\,dx$$

Optimal (type 4, 186 leaves, 4 steps):

$$-\frac{1}{21\,d}10\,\left(a^2+b^2\right)\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,-\frac{2\,\left(b\,\text{Cos}[c+d\,x]-a\,\text{Sin}[c+d\,x]\right)\,\left(a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]\right)^{5/2}}{7\,d}+\left(10\,\left(a^2+b^2\right)^2\,\text{EllipticF}\left[\frac{1}{2}\,\left(c+d\,x-\text{ArcTan}[a,\,b]\right),\,2\right]\,\sqrt{\frac{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}{\sqrt{a^2+b^2}}}\right)\Big/\left(21\,d\,\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\right)$$

Result (type 5, 205 leaves):

$$\frac{1}{42\,d}\left(\sqrt{a\,\text{Cos}[c+d\,x]+b\,\text{Sin}[c+d\,x]}\,\left(-23\,b\,\left(a^2+b^2\right)\,\text{Cos}[c+d\,x]+\left(-9\,a^2\,b+3\,b^3\right)\,\text{Cos}\left[3\,\left(c+d\,x\right)\right]+2\,a\,\left(13\,a^2+7\,b^2+3\,\left(a^2-3\,b^2\right)\,\text{Cos}\left[2\,\left(c+d\,x\right)\right]\right)\,\text{Sin}[c+d\,x]\right)+\left(20\,\left(a^2+b^2\right)^2\,\sqrt{\text{Cos}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]^2}\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]^2\right]\,\text{Tan}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]\right)\Big/\left(\sqrt{\sqrt{1+\frac{a^2}{b^2}}\,b\,\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]}\right)\right)$$

Problem 233: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 131 leaves, 3 steps):

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

Result (type 5, 256 leaves):

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

Problem 234: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 131 leaves, 3 steps):

$$-\frac{2\,\left(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x]\right)\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}{3\,d}+$$
$$\left(2\,\left(a^2+b^2\right)\,\mathrm{EllipticF}\left[\frac{1}{2}\,\left(c+d\,x-\mathrm{ArcTan}[a,b]\right),2\right]\,\sqrt{\frac{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}{\sqrt{a^2+b^2}}}\right)\Big/$$
$$\left(3\,d\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)$$

Result (type 5, 143 leaves):

$$\frac{1}{3 d}2 \left(\left(-b \operatorname{Cos}[c+d x]+a \operatorname{Sin}[c+d x]\right) \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}+\right.$$

$$\left(\left(a^2+b^2\right) \sqrt{\operatorname{Cos}\left[c+d x+\operatorname{ArcTan}\left[\frac{a}{b}\right]\right]^2}\right.$$

$$\left.\text{HypergeometricPFQ}\left[\left\{\frac{1}{4}, \frac{1}{2}\right\}, \left\{\frac{5}{4}\right\}, \operatorname{Sin}\left[c+d x+\operatorname{ArcTan}\left[\frac{a}{b}\right]\right]^2\right] \operatorname{Tan}\left[c+d x+\operatorname{ArcTan}\left[\frac{a}{b}\right]\right]\right) \Big/$$

$$\left.\left(\sqrt{\sqrt{1+\frac{a^2}{b^2}}\ b \operatorname{Sin}\left[c+d x+\operatorname{ArcTan}\left[\frac{a}{b}\right]\right]}\right)\right)$$

Problem 235: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 75 leaves, 2 steps):

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

$$\left(d \sqrt{\frac{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}{\sqrt{a^2+b^2}}}\right)$$

Result (type 5, 268 leaves):

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

$$\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{b}{a}\right]\right]+\sqrt{\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{b}{a}\right]\right]^2}\left(-2\,a\,(a^2+b^2)\right.$$

$$\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{b}{a}\right]\right]+2\,a^2\,\sqrt{1+\frac{b^2}{a^2}}\,\sqrt{a\,\sqrt{1+\frac{b^2}{a^2}}\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{b}{a}\right]\right]}$$

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

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

Problem 236: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 75 leaves, 2 steps):

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

Result (type 5, 92 leaves):

$$\left(2\,\sqrt{\text{Cos}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]^2}\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{a}{b}\right]\right]^2\right]\right.$$

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

Problem 237: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

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

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

$$-\frac{2 (b \operatorname{Cos}[c+d x]-a \operatorname{Sin}[c+d x])}{(a^2+b^2) d \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}}-\left(2 \operatorname{EllipticE}\left[\frac{1}{2} (c+d x-\operatorname{ArcTan}[a,b]), 2\right] \sqrt{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}\right) \Bigg/ \left((a^2+b^2) d \sqrt{\frac{a \operatorname{Cos}[c+d x]+b \operatorname{Sin}[c+d x]}{\sqrt{a^2+b^2}}}\right)$$

Result (type 5, 322 leaves):

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

Problem 238: Result unnecessarily involves higher level functions.

$$\int \frac{1}{(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{5/2}}\,dx$$

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

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

Result (type 5, 145 leaves):

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

Problem 239: Result unnecessarily involves higher level functions.

$$\int \frac{1}{(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{7/2}}\,dx$$

Optimal (type 4, 197 leaves, 4 steps):

$$-\frac{2\,(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x])}{5\,(a^2+b^2)\,d\,(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x])^{5/2}}-\frac{6\,(b\,\mathrm{Cos}[c+d\,x]-a\,\mathrm{Sin}[c+d\,x])}{5\,(a^2+b^2)^2\,d\,\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}}-\left(6\,\mathrm{EllipticE}\left[\frac{1}{2}\,(c+d\,x-\mathrm{ArcTan}[a,b]),2\right]\sqrt{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}\right)\Big/\left(5\,(a^2+b^2)^2\,d\,\sqrt{\frac{a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sin}[c+d\,x]}{\sqrt{a^2+b^2}}}\right)$$

Result (type 5, 277 leaves):

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

Problem 240: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 120 leaves, 4 steps):

$$\frac{130\times 13^{3/4}\,\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{21\,d}-\frac{130\,\left(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x]\right)\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}{21\,d}-\frac{2\,\left(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x]\right)\left(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]\right)^{5/2}}{7\,d}$$

Result (type 5, 153 leaves):

$$\frac{1}{42\,d}\left(-\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}\left(897\,\text{Cos}[c+d\,x]+27\,\text{Cos}[3\,(c+d\,x)]-598\,\text{Sin}[c+d\,x]+138\,\text{Sin}[3\,(c+d\,x)]\right)+260\times 13^{3/4}\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]^2\right]\text{Sec}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]\sqrt{-\left(-1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]\right)\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}\,\sqrt{1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}\right)$$

Problem 241: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 75 leaves, 3 steps):

$$\frac{78\times 13^{1/4}\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{5\,d}-\frac{2\,(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x])\,(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{3/2}}{5\,d}$$

Result (type 5, 199 leaves):

$$\frac{1}{5\,d}\left(\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}\,(52-12\,\text{Cos}[2\,(c+d\,x)]-5\,\text{Sin}[2\,(c+d\,x)])-\frac{13\times 13^{1/4}\left(4\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]-3\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)}{\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}-\left(39\times 13^{1/4}\,\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]^2\right]\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\Big/\left(\sqrt{-\left(-1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\,\sqrt{1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\right)\right)$$

Problem 242: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 75 leaves, 3 steps):

$$\frac{2\times 13^{3/4}\,\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{3\,d}-\frac{2\,(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x])\,\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}{3\,d}$$

Result (type 5, 133 leaves):

$$\frac{1}{3\,d}\left(2\,\left(-3\,\text{Cos}[c+d\,x]+2\,\text{Sin}[c+d\,x]\right)\,\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}\,+\right.$$
$$2\times 13^{3/4}\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]^2\right]\,\text{Sec}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]$$
$$\left.\sqrt{-\left(-1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]\right)\,\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}\,\sqrt{1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}\right)$$

Problem 243: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}\,dx$$

Optimal (type 4, 27 leaves, 2 steps):

$$\frac{2\times 13^{1/4}\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),\,2\right]}{d}$$

Result (type 5, 184 leaves):

$$\frac{1}{3\,d}\left(-4\times 13^{1/4}\,\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\,+\right.$$
$$4\,\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}\,+\,\frac{3\times 13^{1/4}\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}{\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}\,-$$
$$\left(3\times 13^{1/4}\,\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},\,-\frac{1}{4}\right\},\,\left\{\frac{3}{4}\right\},\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]^2\right]\right.$$
$$\left.\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\Bigg/\left(\sqrt{-\left(-1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\right.$$
$$\left.\left.\sqrt{1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\right)\right)$$

Problem 244: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}\,dx$$

Optimal (type 4, 27 leaves, 2 steps):

$$\frac{2\,\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{13^{1/4}\,d}$$

Result (type 5, 88 leaves):

$$\frac{1}{13^{1/4}\,d}2\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]^2\right]\,\text{Sec}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]$$
$$\sqrt{-\left(-1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]\right)\,\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}\,\sqrt{1+\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]}$$

Problem 245: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 73 leaves, 3 steps):

$$-\frac{2\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{13^{3/4}\,d}-\frac{2\,\left(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x]\right)}{13\,d\,\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}$$

Result (type 5, 190 leaves):

$$\frac{1}{3\,d}\left(\frac{4\,\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}{13^{3/4}}-\right.$$

$$\frac{2\,\text{Cos}[c+d\,x]}{\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}-\frac{3\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}{13^{3/4}\,\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}+$$

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

$$\left(13^{3/4}\,\sqrt{-\left(-1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\right.$$

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

Problem 246: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{5/2}}\,dx$$

Optimal (type 4, 75 leaves, 3 steps):

$$\frac{2\,\text{EllipticF}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{39\times 13^{1/4}\,d}-\frac{2\,(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x])}{39\,d\,(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{3/2}}$$

Result (type 5, 157 leaves):

$$\left(-78\,\text{Cos}[c+d\,x]+52\,\text{Sin}[c+d\,x]+\right.$$

$$\sqrt{2}\,13^{3/4}\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}\left[c+d\,x+\text{ArcTan}\left[\frac{2}{3}\right]\right]^2\right]$$

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

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

$$\left(507\,d\,(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{3/2}\right)$$

Problem 247: Result unnecessarily involves higher level functions.

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

Optimal (type 4, 120 leaves, 4 steps):

$$-\frac{6\,\text{EllipticE}\left[\frac{1}{2}\left(c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right),2\right]}{65\times 13^{3/4}\,d}-\frac{2\,(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x])}{65\,d\,(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{5/2}}-\frac{6\,(3\,\text{Cos}[c+d\,x]-2\,\text{Sin}[c+d\,x])}{845\,d\,\sqrt{2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x]}}$$

Result (type 5, 224 leaves):

$$\frac{1}{65\,d}\left(\frac{4\,\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}{13^{3/4}}+\left(-33\,\text{Cos}[c+d\,x]+5\,\text{Cos}[3\,(c+d\,x)]-4\,(\text{Sin}[c+d\,x]+3\,\text{Sin}[3\,(c+d\,x)])\right)\Big/\left(2\,(2\,\text{Cos}[c+d\,x]+3\,\text{Sin}[c+d\,x])^{5/2}\right)-\frac{3\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}{13^{3/4}\,\sqrt{\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}}+\left(3\,\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]^2\right]\,\text{Sin}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\Big/\left(13^{3/4}\,\sqrt{-\left(-1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]\right)\,\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\,\sqrt{1+\text{Cos}\left[c+d\,x-\text{ArcTan}\left[\frac{3}{2}\right]\right]}\right)\right)$$

Problem 267: Result more than twice size of optimal antiderivative.

$$\int (a\,\text{Sec}[x]+b\,\text{Tan}[x])\,dx$$

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

$$a\,\text{ArcTanh}[\text{Sin}[x]]-b\,\text{Log}[\text{Cos}[x]]$$

Result (type 3, 42 leaves):

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

Problem 274: Result more than twice size of optimal antiderivative.

$$\int (\text{Sec}[x] + \text{Tan}[x])^4 \, dx$$

Optimal (type 3, 30 leaves, 5 steps):

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

Result (type 3, 64 leaves):

$$-\left(\left(-3\,(8 + 3\,x)\,\text{Cos}\left[\frac{x}{2}\right] + (16 + 3\,x)\,\text{Cos}\left[\frac{3\,x}{2}\right] + 6\,(4 + 2\,x + x\,\text{Cos}[x])\,\text{Sin}\left[\frac{x}{2}\right]\right) \Big/ \left(6\left(\text{Cos}\left[\frac{x}{2}\right] - \text{Sin}\left[\frac{x}{2}\right]\right)^3\right)\right)$$

Problem 275: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 18 leaves, 4 steps):

$$\text{Log}[1 - \text{Sin}[x]] + \frac{2}{1 - \text{Sin}[x]}$$

Result (type 3, 38 leaves):

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

Problem 277: Result more than twice size of optimal antiderivative.

$$\int (\text{Sec}[x] + \text{Tan}[x]) \, dx$$

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

$$-2\,\text{Log}\left[\text{Cos}\left[\frac{1}{4}\,(\pi + 2\,x)\right]\right]$$

Result (type 3, 38 leaves):

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

Problem 278: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\text{Sec}[x] + \text{Tan}[x]} \, dx$$

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

$\text{Log}[1+\text{Sin}[x]]$

Result (type 3, 16 leaves):

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

Problem 280: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(\text{Sec}[x]+\text{Tan}[x])^3}\,dx$$

Optimal (type 3, 16 leaves, 4 steps):

$$-\text{Log}[1+\text{Sin}[x]]-\frac{2}{1+\text{Sin}[x]}$$

Result (type 3, 34 leaves):

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

Problem 281: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(\text{Sec}[x]+\text{Tan}[x])^4}\,dx$$

Optimal (type 3, 26 leaves, 4 steps):

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

Result (type 3, 62 leaves):

$$\left(3\,(-8+3\,x)\,\text{Cos}\left[\frac{x}{2}\right]+(16-3\,x)\,\text{Cos}\left[\frac{3\,x}{2}\right]+6\,(-4+2\,x+x\,\text{Cos}[x])\,\text{Sin}\left[\frac{x}{2}\right]\right)\Big/\left(6\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^3\right)$$

Problem 287: Result more than twice size of optimal antiderivative.

$$\int (a\,\text{Cot}[x]+b\,\text{Csc}[x])\,dx$$

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

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

Result (type 3, 25 leaves):

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

Problem 297: Result more than twice size of optimal antiderivative.

$$\int (\text{Cot}[x] + \text{Csc}[x]) \, dx$$

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

$$-\text{ArcTanh}[\text{Cos}[x]] + \text{Log}[\text{Sin}[x]]$$

Result (type 3, 20 leaves):

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

Problem 306: Result more than twice size of optimal antiderivative.

$$\int (\text{Csc}[x] - \text{Sin}[x]) \, dx$$

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

$$-\text{ArcTanh}[\text{Cos}[x]] + \text{Cos}[x]$$

Result (type 3, 19 leaves):

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

Problem 310: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(\text{Csc}[x] - \text{Sin}[x])^4} \, dx$$

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

$$\frac{\text{Tan}[x]^5}{5} + \frac{\text{Tan}[x]^7}{7}$$

Result (type 3, 37 leaves):

$$\frac{2\,\text{Tan}[x]}{35} + \frac{1}{35}\text{Sec}[x]^2\,\text{Tan}[x] - \frac{8}{35}\text{Sec}[x]^4\,\text{Tan}[x] + \frac{1}{7}\text{Sec}[x]^6\,\text{Tan}[x]$$

Problem 312: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(\text{Csc}[x] - \text{Sin}[x])^6} \, dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$\frac{\text{Tan}[x]^7}{7} + \frac{2\,\text{Tan}[x]^9}{9} + \frac{\text{Tan}[x]^{11}}{11}$$

Result (type 3, 57 leaves):

$$-\frac{8\,\text{Tan}[x]}{693}-\frac{4}{693}\,\text{Sec}[x]^2\,\text{Tan}[x]-\frac{1}{231}\,\text{Sec}[x]^4\,\text{Tan}[x]+\frac{113}{693}\,\text{Sec}[x]^6\,\text{Tan}[x]-\frac{23}{99}\,\text{Sec}[x]^8\,\text{Tan}[x]+\frac{1}{11}\,\text{Sec}[x]^{10}\,\text{Tan}[x]$$

Problem 318: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 60 leaves, 8 steps):

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

Result (type 5, 37 leaves):

$$2\,\sqrt{\text{Cos}[x]\,\text{Cot}[x]}\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{4},\frac{5}{4},\text{Sec}[x]^2\right]\,\text{Sec}[x]\,\left(-\text{Tan}[x]^2\right)^{1/4}$$

Problem 319: Result unnecessarily involves higher level functions.

$$\int \frac{1}{\left(\text{Csc}[x]-\text{Sin}[x]\right)^{3/2}}\,dx$$

Optimal (type 3, 80 leaves, 9 steps):

$$\frac{\text{Sec}[x]}{2\,\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}+\frac{\text{ArcTan}\left[\sqrt{-\text{Sin}[x]}\right]\,\text{Cot}[x]\,\sqrt{-\text{Sin}[x]}}{4\,\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}+\frac{\text{ArcTanh}\left[\sqrt{-\text{Sin}[x]}\right]\,\text{Cot}[x]\,\sqrt{-\text{Sin}[x]}}{4\,\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}$$

Result (type 5, 42 leaves):

$$\frac{\text{Sec}[x]\,\left(3+\frac{\text{Hypergeometric2F1}\left[\frac{3}{4},\frac{3}{4},\frac{7}{4},\text{Sec}[x]^2\right]}{\left(-\text{Tan}[x]^2\right)^{1/4}}\right)}{6\,\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}$$

Problem 320: Result unnecessarily involves higher level functions.

$$\int \frac{1}{\left(\text{Csc}[x]-\text{Sin}[x]\right)^{5/2}}\,dx$$

Optimal (type 3, 99 leaves, 10 steps):

$$-\frac{3\,\text{ArcTan}\left[\sqrt{-\text{Sin}[x]}\right]\text{Cos}[x]}{32\sqrt{\text{Cos}[x]\,\text{Cot}[x]}\,\sqrt{-\text{Sin}[x]}}+\frac{3\,\text{ArcTanh}\left[\sqrt{-\text{Sin}[x]}\right]\text{Cos}[x]}{32\sqrt{\text{Cos}[x]\,\text{Cot}[x]}\,\sqrt{-\text{Sin}[x]}}-\frac{3\,\text{Tan}[x]}{16\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}+\frac{\text{Sec}[x]^2\,\text{Tan}[x]}{4\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}$$

Result (type 5, 57 leaves):

$$\left(\left(5-3\,\text{Cos}[2\,x]\right)\text{Sec}[x]^2\,\text{Tan}[x]-6\,\text{Cot}[x]\,\text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{4},\frac{5}{4},\text{Sec}[x]^2\right]\left(-\text{Tan}[x]^2\right)^{1/4}\right)\Big/\left(32\sqrt{\text{Cos}[x]\,\text{Cot}[x]}\right)$$

Problem 321: Result unnecessarily involves higher level functions.

$$\int\frac{1}{\left(\text{Csc}[x]-\text{Sin}[x]\right)^{7/2}}\,dx$$

Optimal (type 3, 118 leaves, 11 steps):

$$\frac{5\,\text{Sec}[x]}{192\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}-\frac{5\,\text{Sec}[x]^3}{48\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}-\frac{5\,\text{ArcTan}\left[\sqrt{-\text{Sin}[x]}\right]\text{Cot}[x]\,\sqrt{-\text{Sin}[x]}}{128\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}-\frac{5\,\text{ArcTanh}\left[\sqrt{-\text{Sin}[x]}\right]\text{Cot}[x]\,\sqrt{-\text{Sin}[x]}}{128\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}+\frac{\text{Sec}[x]^3\,\text{Tan}[x]^2}{6\sqrt{\text{Cos}[x]\,\text{Cot}[x]}}$$

Result (type 5, 63 leaves):

$$\frac{1}{192}\sqrt{\text{Cos}[x]\,\text{Cot}[x]}\,\text{Csc}[x]\,\text{Sec}[x]\left(-5+57\,\text{Sec}[x]^2-84\,\text{Sec}[x]^4+32\,\text{Sec}[x]^6+5\,\text{Hypergeometric2F1}\left[\frac{3}{4},\frac{3}{4},\frac{7}{4},\text{Sec}[x]^2\right]\left(-\text{Tan}[x]^2\right)^{3/4}\right)$$

Problem 323: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 34 leaves, 6 steps):

$$-\frac{5}{2}\,\text{ArcTanh}[\text{Sin}[x]]+\frac{5\,\text{Sin}[x]}{2}+\frac{5\,\text{Sin}[x]^3}{6}+\frac{1}{2}\,\text{Sin}[x]^3\,\text{Tan}[x]^2$$

Result (type 3, 85 leaves):

$$\frac{1}{12}\left(30\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]-30\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]+\frac{3}{\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)^2}-\frac{3}{\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^2}+27\,\text{Sin}[x]-\text{Sin}[3\,x]\right)$$

Problem 325: Result more than twice size of optimal antiderivative.

$$\int (-\mathrm{Cos}[x] + \mathrm{Sec}[x]) \, dx$$

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

$$\mathrm{ArcTanh}[\mathrm{Sin}[x]] - \mathrm{Sin}[x]$$

Result (type 3, 37 leaves):

$$-\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right] - \mathrm{Sin}\left[\frac{x}{2}\right]\right] + \mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right] + \mathrm{Sin}\left[\frac{x}{2}\right]\right] - \mathrm{Sin}[x]$$

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

$$\int \frac{1}{(-\mathrm{Cos}[x] + \mathrm{Sec}[x])^3} \, dx$$

Optimal (type 3, 17 leaves, 4 steps):

$$\frac{\mathrm{Csc}[x]^3}{3} - \frac{\mathrm{Csc}[x]^5}{5}$$

Result (type 3, 93 leaves):

$$\frac{11}{240} \mathrm{Cot}\left[\frac{x}{2}\right] + \frac{11}{480} \mathrm{Cot}\left[\frac{x}{2}\right] \mathrm{Csc}\left[\frac{x}{2}\right]^2 - \frac{1}{160} \mathrm{Cot}\left[\frac{x}{2}\right] \mathrm{Csc}\left[\frac{x}{2}\right]^4 +$$
$$\frac{11}{240} \mathrm{Tan}\left[\frac{x}{2}\right] + \frac{11}{480} \mathrm{Sec}\left[\frac{x}{2}\right]^2 \mathrm{Tan}\left[\frac{x}{2}\right] - \frac{1}{160} \mathrm{Sec}\left[\frac{x}{2}\right]^4 \mathrm{Tan}\left[\frac{x}{2}\right]$$

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

$$\int \frac{1}{(-\mathrm{Cos}[x] + \mathrm{Sec}[x])^4} \, dx$$

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

$$-\frac{1}{5} \mathrm{Cot}[x]^5 - \frac{\mathrm{Cot}[x]^7}{7}$$

Result (type 3, 37 leaves):

$$-\frac{2 \, \mathrm{Cot}[x]}{35} - \frac{1}{35} \mathrm{Cot}[x] \, \mathrm{Csc}[x]^2 + \frac{8}{35} \mathrm{Cot}[x] \, \mathrm{Csc}[x]^4 - \frac{1}{7} \mathrm{Cot}[x] \, \mathrm{Csc}[x]^6$$

Problem 330: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(-\mathrm{Cos}[x] + \mathrm{Sec}[x])^5} \, dx$$

Optimal (type 3, 25 leaves, 4 steps):

$$-\frac{1}{5}\text{Csc}[x]^5+\frac{2\,\text{Csc}[x]^7}{7}-\frac{\text{Csc}[x]^9}{9}$$

Result (type 3, 165 leaves):

$$-\frac{649\,\text{Cot}\left[\frac{x}{2}\right]}{80640}-\frac{649\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^2}{161280}-\frac{31\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^4}{53760}+\frac{37\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^6}{32256}-\frac{\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^8}{4608}-\frac{649\,\text{Tan}\left[\frac{x}{2}\right]}{80640}-\frac{649\,\text{Sec}\left[\frac{x}{2}\right]^2\text{Tan}\left[\frac{x}{2}\right]}{161280}-\frac{31\,\text{Sec}\left[\frac{x}{2}\right]^4\text{Tan}\left[\frac{x}{2}\right]}{53760}+\frac{37\,\text{Sec}\left[\frac{x}{2}\right]^6\text{Tan}\left[\frac{x}{2}\right]}{32256}-\frac{\text{Sec}\left[\frac{x}{2}\right]^8\text{Tan}\left[\frac{x}{2}\right]}{4608}$$

Problem 331: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(-\text{Cos}[x]+\text{Sec}[x])^6}\,dx$$

Optimal (type 3, 25 leaves, 3 steps):

$$-\frac{1}{7}\text{Cot}[x]^7-\frac{2\,\text{Cot}[x]^9}{9}-\frac{\text{Cot}[x]^{11}}{11}$$

Result (type 3, 57 leaves):

$$\frac{8\,\text{Cot}[x]}{693}+\frac{4}{693}\text{Cot}[x]\,\text{Csc}[x]^2+\frac{1}{231}\text{Cot}[x]\,\text{Csc}[x]^4-\frac{113}{693}\text{Cot}[x]\,\text{Csc}[x]^6+\frac{23}{99}\text{Cot}[x]\,\text{Csc}[x]^8-\frac{1}{11}\text{Cot}[x]\,\text{Csc}[x]^{10}$$

Problem 332: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(-\text{Cos}[x]+\text{Sec}[x])^7}\,dx$$

Optimal (type 3, 33 leaves, 4 steps):

$$\frac{\text{Csc}[x]^7}{7}-\frac{\text{Csc}[x]^9}{3}+\frac{3\,\text{Csc}[x]^{11}}{11}-\frac{\text{Csc}[x]^{13}}{13}$$

Result (type 3, 237 leaves):

$$\frac{10027\,\text{Cot}\left[\frac{x}{2}\right]}{6150144}+\frac{10027\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^2}{12300288}+\frac{755\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^4}{4100096}-\frac{101\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^6}{768768}-\frac{101\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^8}{878592}+\frac{79\,\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^{10}}{1171456}-\frac{\text{Cot}\left[\frac{x}{2}\right]\text{Csc}\left[\frac{x}{2}\right]^{12}}{106496}+\frac{10027\,\text{Tan}\left[\frac{x}{2}\right]}{6150144}+\frac{10027\,\text{Sec}\left[\frac{x}{2}\right]^2\text{Tan}\left[\frac{x}{2}\right]}{12300288}+\frac{755\,\text{Sec}\left[\frac{x}{2}\right]^4\text{Tan}\left[\frac{x}{2}\right]}{4100096}-\frac{101\,\text{Sec}\left[\frac{x}{2}\right]^6\text{Tan}\left[\frac{x}{2}\right]}{768768}-\frac{101\,\text{Sec}\left[\frac{x}{2}\right]^8\text{Tan}\left[\frac{x}{2}\right]}{878592}+\frac{79\,\text{Sec}\left[\frac{x}{2}\right]^{10}\text{Tan}\left[\frac{x}{2}\right]}{1171456}-\frac{\text{Sec}\left[\frac{x}{2}\right]^{12}\text{Tan}\left[\frac{x}{2}\right]}{106496}$$

Problem 337: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 52 leaves, 8 steps):

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

Result (type 5, 37 leaves):

$$-2\left(-\text{Cot}[x]^2\right)^{1/4}\text{Csc}[x]\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{4},\frac{5}{4},\text{Csc}[x]^2\right]\sqrt{\text{Sin}[x]\ \text{Tan}[x]}$$

Problem 338: Result unnecessarily involves higher level functions.

$$\int \frac{1}{\left(-\text{Cos}[x]+\text{Sec}[x]\right)^{3/2}}\,dx$$

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

$$-\frac{\text{Csc}[x]}{2\sqrt{\text{Sin}[x]\ \text{Tan}[x]}}+\frac{\text{ArcTan}\left[\sqrt{\text{Cos}[x]}\right]\text{Sin}[x]}{4\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]\ \text{Tan}[x]}}+\frac{\text{ArcTanh}\left[\sqrt{\text{Cos}[x]}\right]\text{Sin}[x]}{4\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]\ \text{Tan}[x]}}$$

Result (type 5, 49 leaves):

$$\frac{1}{6}\text{Csc}[x]\left(-3\,\text{Cot}[x]^2+\left(-\text{Cot}[x]^2\right)^{3/4}\text{Hypergeometric2F1}\left[\frac{3}{4},\frac{3}{4},\frac{7}{4},\text{Csc}[x]^2\right]\right)$$
$$\text{Sec}[x]\sqrt{\text{Sin}[x]\ \text{Tan}[x]}$$

Problem 339: Result unnecessarily involves higher level functions.

$$\int \frac{1}{\left(-\text{Cos}[x]+\text{Sec}[x]\right)^{5/2}}\,dx$$

Optimal (type 3, 91 leaves, 10 steps):

$$\frac{3\,\text{Cot}[x]}{16\sqrt{\text{Sin}[x]\ \text{Tan}[x]}}-\frac{\text{Cot}[x]\ \text{Csc}[x]^2}{4\sqrt{\text{Sin}[x]\ \text{Tan}[x]}}-$$
$$\frac{3\,\text{ArcTan}\left[\sqrt{\text{Cos}[x]}\right]\text{Sin}[x]}{32\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]\ \text{Tan}[x]}}+\frac{3\,\text{ArcTanh}\left[\sqrt{\text{Cos}[x]}\right]\text{Sin}[x]}{32\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]\ \text{Tan}[x]}}$$

Result (type 5, 53 leaves):

$$\frac{\text{Csc}[x]\left(-5-3\,\text{Cos}[2\,x]+\frac{6\,\text{Cos}[x]^2\ \text{Hypergeometric2F1}\left[\frac{1}{4},\frac{1}{4},\frac{5}{4},\text{Csc}[x]^2\right]}{\left(-\text{Cot}[x]^2\right)^{7/4}}\right)}{32\left(\text{Sin}[x]\ \text{Tan}[x]\right)^{3/2}}$$

Problem 340: Result unnecessarily involves higher level functions.

$$\int \frac{1}{(-\mathrm{Cos}[x]+\mathrm{Sec}[x])^{7/2}}\,dx$$

Optimal (type 3, 110 leaves, 11 steps):

$$-\frac{5\,\mathrm{Csc}[x]}{192\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}}+\frac{5\,\mathrm{Csc}[x]^3}{48\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}}-\frac{\mathrm{Cot}[x]^2\,\mathrm{Csc}[x]^3}{6\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}}-\frac{5\,\mathrm{ArcTan}\left[\sqrt{\mathrm{Cos}[x]}\right]\,\mathrm{Sin}[x]}{128\,\sqrt{\mathrm{Cos}[x]}\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}}-\frac{5\,\mathrm{ArcTanh}\left[\sqrt{\mathrm{Cos}[x]}\right]\,\mathrm{Sin}[x]}{128\,\sqrt{\mathrm{Cos}[x]}\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}}$$

Result (type 5, 63 leaves):

$$-\frac{1}{192}\,\mathrm{Csc}[x]\,\Big(-5+57\,\mathrm{Csc}[x]^2-84\,\mathrm{Csc}[x]^4+32\,\mathrm{Csc}[x]^6+5\,\left(-\mathrm{Cot}[x]^2\right)^{3/4}\,\mathrm{Hypergeometric2F1}\left[\frac{3}{4},\frac{3}{4},\frac{7}{4},\mathrm{Csc}[x]^2\right]\Big)\,\mathrm{Sec}[x]\,\sqrt{\mathrm{Sin}[x]\,\mathrm{Tan}[x]}$$

Problem 341: Result more than twice size of optimal antiderivative.

$$\int (\mathrm{Sin}[x]+\mathrm{Tan}[x])^4\,dx$$

Optimal (type 3, 55 leaves, 18 steps):

$$-\frac{61\,x}{8}-2\,\mathrm{ArcTanh}[\mathrm{Sin}[x]]+\frac{19}{8}\,\mathrm{Cos}[x]\,\mathrm{Sin}[x]+\frac{1}{4}\,\mathrm{Cos}[x]^3\,\mathrm{Sin}[x]-\frac{4\,\mathrm{Sin}[x]^3}{3}+5\,\mathrm{Tan}[x]+2\,\mathrm{Sec}[x]\,\mathrm{Tan}[x]+\frac{\mathrm{Tan}[x]^3}{3}$$

Result (type 3, 129 leaves):

$$\frac{1}{768}\,\mathrm{Sec}[x]^3\,\Big(-72\,\mathrm{Cos}[x]\,\left(61\,x-16\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]-\mathrm{Sin}\left[\frac{x}{2}\right]\right]+16\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)-24\,\mathrm{Cos}[3\,x]\,\left(61\,x-16\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]-\mathrm{Sin}\left[\frac{x}{2}\right]\right]+16\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{x}{2}\right]+\mathrm{Sin}\left[\frac{x}{2}\right]\right]\right)+1395\,\mathrm{Sin}[x]+672\,\mathrm{Sin}[2\,x]+1265\,\mathrm{Sin}[3\,x]+129\,\mathrm{Sin}[5\,x]+32\,\mathrm{Sin}[6\,x]+3\,\mathrm{Sin}[7\,x]\Big)$$

Problem 343: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 25 leaves, 9 steps):

$$-\frac{x}{2}+2\,\mathrm{ArcTanh}[\mathrm{Sin}[x]]-2\,\mathrm{Sin}[x]-\frac{1}{2}\,\mathrm{Cos}[x]\,\mathrm{Sin}[x]+\mathrm{Tan}[x]$$

Result (type 3, 60 leaves):

$$-\frac{x}{2}-2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]+2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]-2\,\text{Sin}[x]-\frac{1}{8}\,\text{Sec}[x]\,\text{Sin}[3\,x]+\frac{7\,\text{Tan}[x]}{8}$$

Problem 351: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+C\,\text{Sin}[x]}{(b\,\text{Cos}[x]+c\,\text{Sin}[x])^3}\,dx$$

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

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

Result (type 3, 132 leaves):

$$\left(2\,A\,b\,\sqrt{b^2+c^2}\,\text{ArcTanh}\left[\frac{-c+b\,\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{b^2+c^2}}\right]\,(b\,\text{Cos}[x]+c\,\text{Sin}[x])^2+\right.$$
$$\left.(b^2+c^2)\,\left(-A\,b\,c\,\text{Cos}[x]+A\,b^2\,\text{Sin}[x]+2\,c^2\,C\,\text{Sin}[x]^2+b\,C\,(b+c\,\text{Sin}[2\,x])\right)\right)\Big/$$
$$\left(2\,b\,(b-i\,c)^2\,(b+i\,c)^2\,(b\,\text{Cos}[x]+c\,\text{Sin}[x])^2\right)$$

Problem 354: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\text{Cos}[x]}{(b\,\text{Cos}[x]+c\,\text{Sin}[x])^3}\,dx$$

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

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

Result (type 3, 118 leaves):

$$\left(2\,A\,\sqrt{b^2+c^2}\,\text{ArcTanh}\left[\frac{-c+b\,\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{b^2+c^2}}\right]\,(b\,\text{Cos}[x]+c\,\text{Sin}[x])^2+\right.$$
$$\left.(b^2+c^2)\,\left(-A\,c\,\text{Cos}[x]-B\,c\,\text{Cos}[2\,x]+b\,(A+2\,B\,\text{Cos}[x])\,\text{Sin}[x]\right)\right)\Big/$$
$$\left(2\,(b-i\,c)^2\,(b+i\,c)^2\,(b\,\text{Cos}[x]+c\,\text{Sin}[x])^2\right)$$

Problem 355: Result unnecessarily involves imaginary or complex numbers.

$$\int\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^4\,dx$$

Optimal (type 3, 246 leaves, 6 steps):

$$\frac{35}{8}\left(b^2+c^2\right)^2 x-\frac{35\, c\left(b^2+c^2\right)^{3/2} \operatorname{Cos}[d+e\, x]}{8\, e}+\frac{35\, b\left(b^2+c^2\right)^{3/2} \operatorname{Sin}[d+e\, x]}{8\, e}-\frac{1}{24\, e}35\left(b^2+c^2\right)\left(c \operatorname{Cos}[d+e\, x]-b \operatorname{Sin}[d+e\, x]\right)\left(\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e\, x]+c \operatorname{Sin}[d+e\, x]\right)-\frac{1}{12\, e}7\sqrt{b^2+c^2}\left(c \operatorname{Cos}[d+e\, x]-b \operatorname{Sin}[d+e\, x]\right)\left(\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e\, x]+c \operatorname{Sin}[d+e\, x]\right)^2-\frac{1}{4\, e}\left(c \operatorname{Cos}[d+e\, x]-b \operatorname{Sin}[d+e\, x]\right)\left(\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e\, x]+c \operatorname{Sin}[d+e\, x]\right)^3$$

Result (type 3, 238 leaves):

$$\frac{1}{96\, e}\Big(420\left(b^2+c^2\right)^2(d+e\, x)-672\,(b-\mathrm{i}\, c)(b+\mathrm{i}\, c)\, c\sqrt{b^2+c^2}\operatorname{Cos}[d+e\, x]-336\, b\, c\left(b^2+c^2\right)\operatorname{Cos}[2\,(d+e\, x)]+32\, c\left(-3\, b^2+c^2\right)\sqrt{b^2+c^2}\operatorname{Cos}[3\,(d+e\, x)]-12\, b\, c\left(b^2-c^2\right)\operatorname{Cos}[4\,(d+e\, x)]+672\, b\,(b-\mathrm{i}\, c)(b+\mathrm{i}\, c)\sqrt{b^2+c^2}\operatorname{Sin}[d+e\, x]+168\left(b^4-c^4\right)\operatorname{Sin}[2\,(d+e\, x)]+32\, b\left(b^2-3\, c^2\right)\sqrt{b^2+c^2}\operatorname{Sin}[3\,(d+e\, x)]+3\left(b^4-6\, b^2 c^2+c^4\right)\operatorname{Sin}[4\,(d+e\, x)]\Big)$$

Problem 356: Result unnecessarily involves imaginary or complex numbers.

$$\int\left(\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e\, x]+c \operatorname{Sin}[d+e\, x]\right)^3 dx$$

Optimal (type 3, 178 leaves, 5 steps):

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

Result (type 3, 163 leaves):

$$\frac{1}{12\, e}\Big(30\,(b-\mathrm{i}\, c)(b+\mathrm{i}\, c)\sqrt{b^2+c^2}\,(d+e\, x)-45\, c\left(b^2+c^2\right)\operatorname{Cos}[d+e\, x]-18\, b\, c\sqrt{b^2+c^2}\operatorname{Cos}[2\,(d+e\, x)]+c\left(-3\, b^2+c^2\right)\operatorname{Cos}[3\,(d+e\, x)]+45\, b\left(b^2+c^2\right)\operatorname{Sin}[d+e\, x]+9\left(b^2-c^2\right)\sqrt{b^2+c^2}\operatorname{Sin}[2\,(d+e\, x)]+b\left(b^2-3\, c^2\right)\operatorname{Sin}[3\,(d+e\, x)]\Big)$$

Problem 361: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e\, x]+c \operatorname{Sin}[d+e\, x]\right)^3} dx$$

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

$$-\frac{c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]}{5\,\sqrt{b^2+c^2}\,e\,\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^3}-\frac{2\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}{15\,\left(b^2+c^2\right)\,e\,\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^2}-\frac{2\,\left(c-\sqrt{b^2+c^2}\,\mathrm{Sin}[d+e\,x]\right)}{15\,c\,\left(b^2+c^2\right)\,e\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}$$

Result (type 3, 420 leaves):

$$\frac{1}{120\,c\,\left(b^2+c^2\right)\,e\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)^5}\left(-76\,b^4\,c-152\,b^2\,c^3-76\,c^5+90\,b\,c\,\left(b^2+c^2\right)^{3/2}\mathrm{Cos}[d+e\,x]+20\,c\,\left(-b^4+c^4\right)\,\mathrm{Cos}[2\,(d+e\,x)]+\right.$$
$$10\,b^3\,c\,\sqrt{b^2+c^2}\,\mathrm{Cos}[3\,(d+e\,x)]+10\,b\,c^3\,\sqrt{b^2+c^2}\,\mathrm{Cos}[3\,(d+e\,x)]-$$
$$4\,b^3\,c\,\sqrt{b^2+c^2}\,\mathrm{Cos}[5\,(d+e\,x)]+4\,b\,c^3\,\sqrt{b^2+c^2}\,\mathrm{Cos}[5\,(d+e\,x)]+10\,b^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[d+e\,x]+$$
$$110\,b^2\,c^2\,\sqrt{b^2+c^2}\,\mathrm{Sin}[d+e\,x]+100\,c^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[d+e\,x]-40\,b^3\,c^2\,\mathrm{Sin}[2\,(d+e\,x)]-$$
$$40\,b\,c^4\,\mathrm{Sin}[2\,(d+e\,x)]-5\,b^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[3\,(d+e\,x)]+5\,c^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[3\,(d+e\,x)]+$$
$$\left.b^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[5\,(d+e\,x)]-6\,b^2\,c^2\,\sqrt{b^2+c^2}\,\mathrm{Sin}[5\,(d+e\,x)]+c^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}[5\,(d+e\,x)]\right)$$

Problem 362: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^4}\,dx$$

Optimal (type 3, 259 leaves, 4 steps):

$$-\frac{c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]}{7\,\sqrt{b^2+c^2}\,e\,\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^4}-\frac{3\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}{35\,\left(b^2+c^2\right)\,e\,\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^3}-\frac{2\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}{35\,\left(b^2+c^2\right)^{3/2}\,e\,\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^2}-\frac{2\,\left(c-\sqrt{b^2+c^2}\,\mathrm{Sin}[d+e\,x]\right)}{35\,c\,\left(b^2+c^2\right)^{3/2}\,e\,\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}$$

Result (type 3, 533 leaves):

$$\frac{1}{1120\,c\,\left(b^2+c^2\right)\,e\,\left(-c\,\mathrm{Cos}[d+e\,x]+b\,\mathrm{Sin}[d+e\,x]\right)^7}$$
$$\left(832\,b^4\,c\,\sqrt{b^2+c^2}+1664\,b^2\,c^3\,\sqrt{b^2+c^2}+832\,c^5\,\sqrt{b^2+c^2}-1190\,b\,c\,\left(b^2+c^2\right)^2\,\mathrm{Cos}[d+e\,x]+\right.$$
$$448\,c\,\sqrt{b^2+c^2}\,\left(b^4-c^4\right)\,\mathrm{Cos}\left[2\,\left(d+e\,x\right)\right]-112\,b^5\,c\,\mathrm{Cos}\left[3\,\left(d+e\,x\right)\right]+56\,b^3\,c^3\,\mathrm{Cos}\left[3\,\left(d+e\,x\right)\right]+$$
$$168\,b\,c^5\,\mathrm{Cos}\left[3\,\left(d+e\,x\right)\right]+28\,b^5\,c\,\mathrm{Cos}\left[5\,\left(d+e\,x\right)\right]-28\,b\,c^5\,\mathrm{Cos}\left[5\,\left(d+e\,x\right)\right]-$$
$$6\,b^5\,c\,\mathrm{Cos}\left[7\,\left(d+e\,x\right)\right]+20\,b^3\,c^3\,\mathrm{Cos}\left[7\,\left(d+e\,x\right)\right]-6\,b\,c^5\,\mathrm{Cos}\left[7\,\left(d+e\,x\right)\right]-$$
$$35\,b^6\,\mathrm{Sin}[d+e\,x]-1295\,b^4\,c^2\,\mathrm{Sin}[d+e\,x]-2485\,b^2\,c^4\,\mathrm{Sin}[d+e\,x]-1225\,c^6\,\mathrm{Sin}[d+e\,x]+$$
$$896\,b^3\,c^2\,\sqrt{b^2+c^2}\,\mathrm{Sin}\left[2\,\left(d+e\,x\right)\right]+896\,b\,c^4\,\sqrt{b^2+c^2}\,\mathrm{Sin}\left[2\,\left(d+e\,x\right)\right]+21\,b^6\,\mathrm{Sin}\left[3\,\left(d+e\,x\right)\right]-$$
$$189\,b^4\,c^2\,\mathrm{Sin}\left[3\,\left(d+e\,x\right)\right]-161\,b^2\,c^4\,\mathrm{Sin}\left[3\,\left(d+e\,x\right)\right]+49\,c^6\,\mathrm{Sin}\left[3\,\left(d+e\,x\right)\right]-$$
$$7\,b^6\,\mathrm{Sin}\left[5\,\left(d+e\,x\right)\right]+35\,b^4\,c^2\,\mathrm{Sin}\left[5\,\left(d+e\,x\right)\right]+35\,b^2\,c^4\,\mathrm{Sin}\left[5\,\left(d+e\,x\right)\right]-7\,c^6\,\mathrm{Sin}\left[5\,\left(d+e\,x\right)\right]+$$
$$\left.b^6\,\mathrm{Sin}\left[7\,\left(d+e\,x\right)\right]-15\,b^4\,c^2\,\mathrm{Sin}\left[7\,\left(d+e\,x\right)\right]+15\,b^2\,c^4\,\mathrm{Sin}\left[7\,\left(d+e\,x\right)\right]-c^6\,\mathrm{Sin}\left[7\,\left(d+e\,x\right)\right]\right)$$

Problem 366: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{2\,a+2\,a\,\mathrm{Cos}[d+e\,x]+2\,c\,\mathrm{Sin}[d+e\,x]}\,dx$$

Optimal (type 3, 25 leaves, 2 steps):

$$\frac{\mathrm{Log}\left[a+c\,\mathrm{Tan}\left[\frac{1}{2}\,\left(d+e\,x\right)\right]\right]}{2\,c\,e}$$

Result (type 3, 57 leaves):

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

Problem 369: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 207 leaves, 5 steps):

$$-\frac{a\,\left(5\,a^2+3\,c^2\right)\,\mathrm{Log}\left[a+c\,\mathrm{Tan}\left[\frac{1}{2}\,\left(d+e\,x\right)\right]\right]}{32\,c^7\,e}-$$
$$\frac{c\,\mathrm{Cos}[d+e\,x]-a\,\mathrm{Sin}[d+e\,x]}{48\,c^2\,e\,\left(a+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^3}+\frac{5\,\left(a\,c\,\mathrm{Cos}[d+e\,x]-a^2\,\mathrm{Sin}[d+e\,x]\right)}{96\,c^4\,e\,\left(a+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^2}-$$
$$\frac{c\,\left(15\,a^2+4\,c^2\right)\,\mathrm{Cos}[d+e\,x]-a\,\left(15\,a^2+4\,c^2\right)\,\mathrm{Sin}[d+e\,x]}{96\,c^6\,e\,\left(a+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)}$$

Result (type 3, 492 leaves):

$$\frac{1}{384\,c^7\,e\,\left(a+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^4}$$
$$\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]\,\left(a\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+c\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)$$
$$\left(192\,\left(5\,a^3+3\,a\,c^2\right)\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]^3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]\right]\right.$$
$$\left(a\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+c\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3-192\,\left(5\,a^3+3\,a\,c^2\right)\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]^3$$
$$\text{Log}\left[a\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+c\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right]\,\left(a\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+c\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3+$$
$$\frac{1}{a}c\,\left(150\,a^5\,c+130\,a^3\,c^3+24\,a\,c^5+3\,a\,c\,\left(25\,a^4+25\,a^2\,c^2-4\,c^4\right)\,\text{Cos}[d+e\,x]-\right.$$
$$6\,\left(25\,a^5\,c+15\,a^3\,c^3+4\,a\,c^5\right)\,\text{Cos}[2\,(d+e\,x)]-75\,a^5\,c\,\text{Cos}[3\,(d+e\,x)]-$$
$$35\,a^3\,c^3\,\text{Cos}[3\,(d+e\,x)]-4\,a\,c^5\,\text{Cos}[3\,(d+e\,x)]+150\,a^6\,\text{Sin}[d+e\,x]+$$
$$255\,a^4\,c^2\,\text{Sin}[d+e\,x]+129\,a^2\,c^4\,\text{Sin}[d+e\,x]+12\,c^6\,\text{Sin}[d+e\,x]+120\,a^6\,\text{Sin}[2\,(d+e\,x)]+$$
$$72\,a^4\,c^2\,\text{Sin}[2\,(d+e\,x)]+36\,a^2\,c^4\,\text{Sin}[2\,(d+e\,x)]+30\,a^6\,\text{Sin}[3\,(d+e\,x)]-$$
$$\left.\left.37\,a^4\,c^2\,\text{Sin}[3\,(d+e\,x)]-27\,a^2\,c^4\,\text{Sin}[3\,(d+e\,x)]-4\,c^6\,\text{Sin}[3\,(d+e\,x)]\right)\right)$$

Problem 370: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{2\,a+2\,a\,\text{Cos}[d+e\,x]+2\,a\,\text{Sin}[d+e\,x]}\,dx$$

Optimal (type 3, 23 leaves, 2 steps):

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

Result (type 3, 50 leaves):

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

Problem 378: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 75 leaves, 4 steps):

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

Result (type 3, 229 leaves):

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

Problem 379: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 3, 134 leaves, 4 steps):

$$-\frac{\left(3\,a^2+c^2\right)\,\mathrm{Log}\left[a+c\,\mathrm{Cot}\left[\frac{1}{2}\,(d+e\,x)\right]\right]}{16\,c^5\,e}-\frac{c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]}{16\,c^2\,e\,\left(a-a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^2}+\frac{3\,\left(a\,c\,\mathrm{Cos}[d+e\,x]+a^2\,\mathrm{Sin}[d+e\,x]\right)}{16\,c^4\,e\,\left(a-a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)}$$

Result (type 3, 350 leaves):

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

Problem 380: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(2\,a - 2\,a\,\text{Cos}[d + e\,x] + 2\,c\,\text{Sin}[d + e\,x])^4}\,dx$$

Optimal (type 3, 207 leaves, 5 steps):

$$\frac{a\,(5\,a^2 + 3\,c^2)\,\text{Log}\left[a + c\,\text{Cot}\left[\frac{1}{2}\,(d + e\,x)\right]\right]}{32\,c^7\,e} - \frac{c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x]}{48\,c^2\,e\,(a - a\,\text{Cos}[d + e\,x] + c\,\text{Sin}[d + e\,x])^3} + \frac{5\,(a\,c\,\text{Cos}[d + e\,x] + a^2\,\text{Sin}[d + e\,x])}{96\,c^4\,e\,(a - a\,\text{Cos}[d + e\,x] + c\,\text{Sin}[d + e\,x])^2} - \frac{c\,(15\,a^2 + 4\,c^2)\,\text{Cos}[d + e\,x] + a\,(15\,a^2 + 4\,c^2)\,\text{Sin}[d + e\,x]}{96\,c^6\,e\,(a - a\,\text{Cos}[d + e\,x] + c\,\text{Sin}[d + e\,x])}$$

Result (type 3, 494 leaves):

$$\frac{1}{384\,c^7\,e\,(a - a\,\text{Cos}[d + e\,x] + c\,\text{Sin}[d + e\,x])^4}\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\left(c\,\text{Cos}\left[\frac{1}{2}\,(d + e\,x)\right] + a\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\right)$$
$$\Big(150\,a^6 + 130\,a^4\,c^2 + 24\,a^2\,c^4 - 225\,a^6\,\text{Cos}[d + e\,x] - 255\,a^4\,c^2\,\text{Cos}[d + e\,x] - 42\,a^2\,c^4\,\text{Cos}[d + e\,x] -$$
$$24\,c^6\,\text{Cos}[d + e\,x] + 90\,a^6\,\text{Cos}[2\,(d + e\,x)] + 174\,a^4\,c^2\,\text{Cos}[2\,(d + e\,x)] - 15\,a^6\,\text{Cos}[3\,(d + e\,x)] -$$
$$49\,a^4\,c^2\,\text{Cos}[3\,(d + e\,x)] + 18\,a^2\,c^4\,\text{Cos}[3\,(d + e\,x)] + 8\,c^6\,\text{Cos}[3\,(d + e\,x)] - 192\,(5\,a^3 + 3\,a\,c^2)$$
$$\text{Log}\left[\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\right]\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]^3\left(c\,\text{Cos}\left[\frac{1}{2}\,(d + e\,x)\right] + a\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\right)^3 +$$
$$192\,(5\,a^3 + 3\,a\,c^2)\,\text{Log}\left[c\,\text{Cos}\left[\frac{1}{2}\,(d + e\,x)\right] + a\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\right]\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]^3$$
$$\left(c\,\text{Cos}\left[\frac{1}{2}\,(d + e\,x)\right] + a\,\text{Sin}\left[\frac{1}{2}\,(d + e\,x)\right]\right)^3 + 75\,a^5\,c\,\text{Sin}[d + e\,x] +$$
$$75\,a^3\,c^3\,\text{Sin}[d + e\,x] - 12\,a\,c^5\,\text{Sin}[d + e\,x] - 60\,a^5\,c\,\text{Sin}[2\,(d + e\,x)] -$$
$$156\,a^3\,c^3\,\text{Sin}[2\,(d + e\,x)] - 12\,a\,c^5\,\text{Sin}[2\,(d + e\,x)] +$$
$$15\,a^5\,c\,\text{Sin}[3\,(d + e\,x)] + 79\,a^3\,c^3\,\text{Sin}[3\,(d + e\,x)] + 20\,a\,c^5\,\text{Sin}[3\,(d + e\,x)]\Big)$$

Problem 384: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{2\,a + 2\,b\,\text{Cos}[d + e\,x] + 2\,a\,\text{Sin}[d + e\,x]}\,dx$$

Optimal (type 3, 33 leaves, 2 steps):

$$-\frac{\text{Log}\left[a + b\,\text{Cot}\left[\frac{d}{2} + \frac{\pi}{4} + \frac{e\,x}{2}\right]\right]}{2\,b\,e}$$

Result (type 3, 93 leaves):

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

Problem 387: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(2 a+2 b\,\text{Cos}[d+e x]+2 a\,\text{Sin}[d+e x])^4}\,dx$$

Optimal (type 3, 215 leaves, 5 steps):

$$\frac{a\left(5 a^2+3 b^2\right)\text{Log}\left[a+b\,\text{Cot}\left[\frac{d}{2}+\frac{\pi}{4}+\frac{e x}{2}\right]\right]}{32 b^7 e}-\frac{a\,\text{Cos}[d+e x]-b\,\text{Sin}[d+e x]}{48 b^2 e\,(a+b\,\text{Cos}[d+e x]+a\,\text{Sin}[d+e x])^3}+\frac{5\left(a^2\,\text{Cos}[d+e x]-a b\,\text{Sin}[d+e x]\right)}{96 b^4 e\,(a+b\,\text{Cos}[d+e x]+a\,\text{Sin}[d+e x])^2}-\frac{a\left(15 a^2+4 b^2\right)\text{Cos}[d+e x]-b\left(15 a^2+4 b^2\right)\text{Sin}[d+e x]}{96 b^6 e\,(a+b\,\text{Cos}[d+e x]+a\,\text{Sin}[d+e x])}$$

Result (type 3, 632 leaves):

$$\frac{1}{384 b^7 e}\Bigg(-12 a\left(5 a^2+3 b^2\right)\text{Log}\left[\text{Cos}\left[\frac{1}{2}(d+e x)\right]+\text{Sin}\left[\frac{1}{2}(d+e x)\right]\right]+12 a\left(5 a^2+3 b^2\right)\text{Log}\left[(a+b)\,\text{Cos}\left[\frac{1}{2}(d+e x)\right]+(a-b)\,\text{Sin}\left[\frac{1}{2}(d+e x)\right]\right]+\Big(b\,\Big(150 a^6+130 a^4 b^2+24 a^2 b^4-3 a^2\left(25 a^4-50 a^3 b+5 a^2 b^2-30 a b^3+4 b^4\right)\text{Cos}[d+e x]-6 a^2\left(15 a^4+20 a^3 b+9 a^2 b^2+2 a b^3-2 b^4\right)\text{Cos}[2(d+e x)]+15 a^6\,\text{Cos}[3(d+e x)]-30 a^5 b\,\text{Cos}[3(d+e x)]-41 a^4 b^2\,\text{Cos}[3(d+e x)]-38 a^3 b^3\,\text{Cos}[3(d+e x)]-12 a^2 b^4\,\text{Cos}[3(d+e x)]-8 a b^5\,\text{Cos}[3(d+e x)]+225 a^6\,\text{Sin}[d+e x]+75 a^5 b\,\text{Sin}[d+e x]+180 a^4 b^2\,\text{Sin}[d+e x]+15 a^3 b^3\,\text{Sin}[d+e x]+27 a^2 b^4\,\text{Sin}[d+e x]+12 a b^5\,\text{Sin}[d+e x]+12 b^6\,\text{Sin}[d+e x]-60 a^6\,\text{Sin}[2(d+e x)]+120 a^5 b\,\text{Sin}[2(d+e x)]+54 a^4 b^2\,\text{Sin}[2(d+e x)]+102 a^3 b^3\,\text{Sin}[2(d+e x)]+6 a^2 b^4\,\text{Sin}[2(d+e x)]+6 a b^5\,\text{Sin}[2(d+e x)]-15 a^6\,\text{Sin}[3(d+e x)]-45 a^5 b\,\text{Sin}[3(d+e x)]-4 a^4 b^2\,\text{Sin}[3(d+e x)]+3 a^3 b^3\,\text{Sin}[3(d+e x)]+15 a^2 b^4\,\text{Sin}[3(d+e x)]+4 a b^5\,\text{Sin}[3(d+e x)]+4 b^6\,\text{Sin}[3(d+e x)]\Big)\Big)\Big/\left((a+b)\left(\text{Cos}\left[\frac{1}{2}(d+e x)\right]+\text{Sin}\left[\frac{1}{2}(d+e x)\right]\right)^3\left((a+b)\,\text{Cos}\left[\frac{1}{2}(d+e x)\right]+(a-b)\,\text{Sin}\left[\frac{1}{2}(d+e x)\right]\right)^3\right)\Bigg)$$

Problem 391: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{2 a+2 b\,\text{Cos}[d+e x]-2 a\,\text{Sin}[d+e x]}\,dx$$

Optimal (type 3, 33 leaves, 2 steps):

$$\frac{\text{Log}\left[a+b\,\text{Tan}\left[\frac{d}{2}+\frac{\pi}{4}+\frac{e\,x}{2}\right]\right]}{2\,b\,e}$$

Result (type 3, 96 leaves):

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

Problem 394: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(2\,a+2\,b\,\text{Cos}[d+e\,x]-2\,a\,\text{Sin}[d+e\,x])^4}\,dx$$

Optimal (type 3, 215 leaves, 5 steps):

$$-\frac{a\,(5\,a^2+3\,b^2)\,\text{Log}\left[a+b\,\text{Tan}\left[\frac{d}{2}+\frac{\pi}{4}+\frac{e\,x}{2}\right]\right]}{32\,b^7\,e}+$$
$$\frac{a\,\text{Cos}[d+e\,x]+b\,\text{Sin}[d+e\,x]}{48\,b^2\,e\,(a+b\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x])^3}-\frac{5\,(a^2\,\text{Cos}[d+e\,x]+a\,b\,\text{Sin}[d+e\,x])}{96\,b^4\,e\,(a+b\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x])^2}+$$
$$\frac{a\,(15\,a^2+4\,b^2)\,\text{Cos}[d+e\,x]+b\,(15\,a^2+4\,b^2)\,\text{Sin}[d+e\,x]}{96\,b^6\,e\,(a+b\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x])}$$

Result (type 3, 636 leaves):

$$\frac{1}{384\,b^7\,e}\left(12\,a\,(5\,a^2+3\,b^2)\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right]-\right.$$
$$12\,a\,(5\,a^2+3\,b^2)\,\text{Log}\left[(a+b)\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+(-a+b)\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right]+$$
$$\Big(b\,\big(-150\,a^6-130\,a^4\,b^2-24\,a^2\,b^4+3\,a^2\,(25\,a^4-50\,a^3\,b+5\,a^2\,b^2-30\,a\,b^3+4\,b^4)\,\text{Cos}[d+e\,x]+$$
$$6\,a^2\,(15\,a^4+20\,a^3\,b+9\,a^2\,b^2+2\,a\,b^3-2\,b^4)\,\text{Cos}[2\,(d+e\,x)]-15\,a^6\,\text{Cos}[3\,(d+e\,x)]+$$
$$30\,a^5\,b\,\text{Cos}[3\,(d+e\,x)]+41\,a^4\,b^2\,\text{Cos}[3\,(d+e\,x)]+38\,a^3\,b^3\,\text{Cos}[3\,(d+e\,x)]+$$
$$12\,a^2\,b^4\,\text{Cos}[3\,(d+e\,x)]+8\,a\,b^5\,\text{Cos}[3\,(d+e\,x)]+225\,a^6\,\text{Sin}[d+e\,x]+$$
$$75\,a^5\,b\,\text{Sin}[d+e\,x]+180\,a^4\,b^2\,\text{Sin}[d+e\,x]+15\,a^3\,b^3\,\text{Sin}[d+e\,x]+$$
$$27\,a^2\,b^4\,\text{Sin}[d+e\,x]+12\,a\,b^5\,\text{Sin}[d+e\,x]+12\,b^6\,\text{Sin}[d+e\,x]-60\,a^6\,\text{Sin}[2\,(d+e\,x)]+$$
$$120\,a^5\,b\,\text{Sin}[2\,(d+e\,x)]+54\,a^4\,b^2\,\text{Sin}[2\,(d+e\,x)]+102\,a^3\,b^3\,\text{Sin}[2\,(d+e\,x)]+$$
$$6\,a^2\,b^4\,\text{Sin}[2\,(d+e\,x)]+6\,a\,b^5\,\text{Sin}[2\,(d+e\,x)]-15\,a^6\,\text{Sin}[3\,(d+e\,x)]-$$
$$45\,a^5\,b\,\text{Sin}[3\,(d+e\,x)]-4\,a^4\,b^2\,\text{Sin}[3\,(d+e\,x)]+3\,a^3\,b^3\,\text{Sin}[3\,(d+e\,x)]+$$
$$15\,a^2\,b^4\,\text{Sin}[3\,(d+e\,x)]+4\,a\,b^5\,\text{Sin}[3\,(d+e\,x)]+4\,b^6\,\text{Sin}[3\,(d+e\,x)]\big)\Big)\Big/$$
$$\left((a+b)\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3\right.$$
$$\left.\left.\left((a+b)\,\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+(-a+b)\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3\right)\right)$$

Problem 402: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(a + b \text{Cos}[d + e x] + c \text{Sin}[d + e x])^4} \, dx$$

Optimal (type 3, 292 leaves, 6 steps):

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

Result (type 3, 606 leaves):

$$\frac{1}{24 e}\left(\frac{24 a\left(2 a^2+3\left(b^2+c^2\right)\right) \text{ArcTanh}\left[\frac{c+(a-b) \text{Tan}\left[\frac{1}{2}(d+e x)\right]}{\sqrt{-a^2+b^2+c^2}}\right]}{\left(-a^2+b^2+c^2\right)^{7/2}}+\frac{1}{b\left(-a^2+b^2+c^2\right)^3(a+b \text{Cos}[d+e x]+c \text{Sin}[d+e x])^3}\left(44 a^5 c+82 a^3 b^2 c+24 a b^4 c+82 a^3 c^3+48 a b^2 c^3+24 a c^5+30 a^2 b c\left(2 a^2+3\left(b^2+c^2\right)\right) \text{Cos}[d+e x]-6 a c\left(-2 b^4+2 b^2 c^2+4 c^4+a^2\left(7 b^2+11 c^2\right)\right) \text{Cos}[2(d+e x)]-22 a^2 b^3 c \text{Cos}[3(d+e x)]-8 b^5 c \text{Cos}[3(d+e x)]-22 a^2 b c^3 \text{Cos}[3(d+e x)]-16 b^3 c^3 \text{Cos}[3(d+e x)]-8 b c^5 \text{Cos}[3(d+e x)]+72 a^4 b^2 \text{Sin}[d+e x]-9 a^2 b^4 \text{Sin}[d+e x]+12 b^6 \text{Sin}[d+e x]+132 a^4 c^2 \text{Sin}[d+e x]+72 a^2 b^2 c^2 \text{Sin}[d+e x]+36 b^4 c^2 \text{Sin}[d+e x]+81 a^2 c^4 \text{Sin}[d+e x]+36 b^2 c^4 \text{Sin}[d+e x]+12 c^6 \text{Sin}[d+e x]+54 a^3 b^3 \text{Sin}[2(d+e x)]+6 a b^5 \text{Sin}[2(d+e x)]+78 a^3 b c^2 \text{Sin}[2(d+e x)]+48 a b^3 c^2 \text{Sin}[2(d+e x)]+42 a b c^4 \text{Sin}[2(d+e x)]+11 a^2 b^4 \text{Sin}[3(d+e x)]+4 b^6 \text{Sin}[3(d+e x)]+4 b^4 c^2 \text{Sin}[3(d+e x)]-11 a^2 c^4 \text{Sin}[3(d+e x)]-4 b^2 c^4 \text{Sin}[3(d+e x)]-4 c^6 \text{Sin}[3(d+e x)]\right)\right)$$

Problem 403: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 185 leaves, 7 steps):

$$\frac{796\,\sqrt{2+\sqrt{34}}\;\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right),\,\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{15\,e}+$$

$$\frac{64\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right),\,\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{\sqrt{2+\sqrt{34}}\;e}-\frac{1}{15\,e}$$

$$32\left(5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x]\right)\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}-\frac{1}{5\,e}$$

$$2\left(5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x]\right)\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)^{3/2}$$

Result (type 6, 536 leaves):

$$\frac{1}{e}\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}\;\left(\frac{796}{25}-\frac{44}{3}\,\text{Cos}[d+e\,x]-6\,\text{Cos}\left[2\,(d+e\,x)\right]+\frac{44}{5}\,\text{Sin}[d+e\,x]-\frac{16}{5}\,\text{Sin}\left[2\,(d+e\,x)\right]\right)+$$

$$\frac{1}{15\,e}1276\,\sqrt{\frac{34}{17+\sqrt{34}}}\;\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.$$

$$\left.-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]\,\sqrt{1-\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}$$

$$\sqrt{-\frac{1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}}}\;\sqrt{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}+\frac{1}{75\,e}$$

$$13\,532\left(-\left(\left(5\,\sqrt{\frac{1}{34}\left(17+\sqrt{34}\right)}\;\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)\Bigg/$$

$$\left(17\,\sqrt{1-\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\;\sqrt{-\frac{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{-17+\sqrt{34}}}\right.$$

$$\left.\left.\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\right)\right)-$$

$$\left.\frac{\frac{3}{17}\left(2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)-\frac{5\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}}}{\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}}\right)$$

Problem 404: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int (2 + 3\,\mathrm{Cos}[d + e\,x] + 5\,\mathrm{Sin}[d + e\,x])^{3/2}\,dx$$

Optimal (type 4, 139 leaves, 6 steps):

$$\frac{16\sqrt{2+\sqrt{34}}\ \mathrm{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\ \frac{2}{15}\left(17-\sqrt{34}\right)\right]}{3\,e}+$$
$$\frac{20\,\mathrm{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\ \frac{2}{15}\left(17-\sqrt{34}\right)\right]}{\sqrt{2+\sqrt{34}}\ e}-$$
$$\frac{2\left(5\,\mathrm{Cos}[d+e\,x]-3\,\mathrm{Sin}[d+e\,x]\right)\sqrt{2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x]}}{3\,e}$$

Result (type 6, 512 leaves):

$$\frac{1}{e}\left(\frac{16}{5}-\frac{10}{3}\operatorname{Cos}[d+e\,x]+2\operatorname{Sin}[d+e\,x]\right)\sqrt{2+3\operatorname{Cos}[d+e\,x]+5\operatorname{Sin}[d+e\,x]}+$$

$$\frac{1}{3\,e}46\sqrt{\frac{34}{17+\sqrt{34}}}\ \operatorname{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{2+\sqrt{34}\operatorname{Sin}\big[d+e\,x+\operatorname{ArcTan}\big[\frac{3}{5}\big]\big]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},$$

$$-\frac{2+\sqrt{34}\operatorname{Sin}\big[d+e\,x+\operatorname{ArcTan}\big[\frac{3}{5}\big]\big]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\Big]\operatorname{Sec}\Big[d+e\,x+\operatorname{ArcTan}\Big[\frac{3}{5}\Big]\Big]\sqrt{1-\operatorname{Sin}\Big[d+e\,x+\operatorname{ArcTan}\Big[\frac{3}{5}\Big]\Big]}$$

$$\sqrt{-\frac{1+\operatorname{Sin}\big[d+e\,x+\operatorname{ArcTan}\big[\frac{3}{5}\big]\big]}{-17+\sqrt{34}}}\ \sqrt{2+\sqrt{34}\operatorname{Sin}\Big[d+e\,x+\operatorname{ArcTan}\Big[\frac{3}{5}\Big]\Big]}+\frac{1}{15\,e}$$

$$272\left(-\left(\left(5\sqrt{\frac{1}{34}\left(17+\sqrt{34}\right)}\ \operatorname{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{2+\sqrt{34}\operatorname{Cos}\big[d+e\,x-\operatorname{ArcTan}\big[\frac{5}{3}\big]\big]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.\right.\right.$$

$$\left.-\frac{2+\sqrt{34}\operatorname{Cos}\big[d+e\,x-\operatorname{ArcTan}\big[\frac{5}{3}\big]\big]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\Big]\operatorname{Sin}\Big[d+e\,x-\operatorname{ArcTan}\Big[\frac{5}{3}\Big]\Big]\right)\Big/$$

$$\left(17\sqrt{1-\operatorname{Cos}\Big[d+e\,x-\operatorname{ArcTan}\Big[\frac{5}{3}\Big]\Big]}\ \sqrt{-\frac{1+\operatorname{Cos}\big[d+e\,x-\operatorname{ArcTan}\big[\frac{5}{3}\big]\big]}{-17+\sqrt{34}}}\right.$$

$$\left.\left.\sqrt{2+\sqrt{34}\operatorname{Cos}\Big[d+e\,x-\operatorname{ArcTan}\Big[\frac{5}{3}\Big]\Big]}\right)\right)-$$

$$\left.\frac{\frac{3}{17}\left(2+\sqrt{34}\operatorname{Cos}\big[d+e\,x-\operatorname{ArcTan}\big[\frac{5}{3}\big]\big]\right)-\frac{5\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}}}{\sqrt{2+\sqrt{34}\operatorname{Cos}\big[d+e\,x-\operatorname{ArcTan}\big[\frac{5}{3}\big]\big]}}\right)$$

Problem 405: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \sqrt{2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x]}\,dx$$

Optimal (type 4, 45 leaves, 2 steps):

$$\frac{2\sqrt{2+\sqrt{34}}\,\mathrm{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{e}$$

Result (type 6, 326 leaves):

$$\frac{1}{15\,e\sqrt{2+\sqrt{34}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]}\sqrt{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]^2}}$$
$$\left(-15\sqrt{30}\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},\frac{\sqrt{34}+17\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]}{-17+\sqrt{34}},\right.\right.$$
$$\left.\frac{\sqrt{34}+17\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]}{17+\sqrt{34}}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]+$$
$$\left(-75\,\mathrm{Cos}[d+e\,x]+45\,\mathrm{Sin}[d+e\,x]+2\sqrt{30}\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\right.\right.$$
$$\left.\frac{\sqrt{34}+17\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}},\frac{\sqrt{34}+17\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{3}{5}\right]\right]}{17+\sqrt{34}}\right]$$
$$\sqrt{\mathrm{Cos}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{3}{5}\right]\right]^2}\sqrt{2+\sqrt{34}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]}\,\mathrm{Sec}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{3}{5}\right]\right]$$
$$\left.\left.\sqrt{2+\sqrt{34}\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{3}{5}\right]\right]}\right)\sqrt{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right]^2}\right)$$

Problem 406: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x]}}\,dx$$

Optimal (type 4, 45 leaves, 2 steps):

$$\frac{2\,\mathrm{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{\sqrt{2+\sqrt{34}}\,e}$$

Result (type 6, 128 leaves):

$$\frac{1}{e}\sqrt{\frac{2}{15}}\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\frac{\sqrt{34}+17\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}},\frac{\sqrt{34}+17\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{17+\sqrt{34}}\right]\sqrt{\text{Cos}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]^2}\ \text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]\sqrt{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}$$

Problem 407: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

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

$$-\frac{\sqrt{2+\sqrt{34}}\ \text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right),\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{15\,e}-\frac{5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x]}{15\,e\,\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}}$$

Result (type 6, 528 leaves):

$$\frac{\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}\,\left(-\frac{34}{225}+\frac{2\,(5+17\,\text{Sin}[d+e\,x])}{45\,(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x])}\right)}{e}-$$

$$\frac{1}{15\,e}\sqrt{\frac{34}{17+\sqrt{34}}}\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.$$

$$\left.-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]\,\sqrt{1-\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}$$

$$\sqrt{-\frac{1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}}}\,\sqrt{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}-\frac{1}{75\,e}$$

$$17\left(-\left(\left(5\sqrt{\frac{1}{34}\left(17+\sqrt{34}\right)}\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)\Bigg/$$

$$\left(17\sqrt{1-\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\,\sqrt{-\frac{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{-17+\sqrt{34}}}\right.$$

$$\left.\left.\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\right)\right)-$$

$$\left.\frac{\frac{3}{17}\left(2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)-\frac{5\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}}}{\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}}\right)$$

Problem 408: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{(2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x])^{5/2}}\,dx$$

Optimal (type 4, 187 leaves, 7 steps):

$$\frac{4\sqrt{2+\sqrt{34}}\;\mathrm{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{675\,e}+\frac{\mathrm{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}\left[\frac{5}{3}\right]\right),\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{45\sqrt{2+\sqrt{34}}\;e}-\frac{5\,\mathrm{Cos}[d+e\,x]-3\,\mathrm{Sin}[d+e\,x]}{45\,e\,(2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x])^{3/2}}+\frac{4\,(5\,\mathrm{Cos}[d+e\,x]-3\,\mathrm{Sin}[d+e\,x])}{675\,e\sqrt{2+3\,\mathrm{Cos}[d+e\,x]+5\,\mathrm{Sin}[d+e\,x]}}$$

Result (type 6, 564 leaves):

$$\frac{1}{e}\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}$$

$$\left(\frac{136}{10125}+\frac{-115-136\,\text{Sin}[d+e\,x]}{2025\,\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)}+\frac{2\,\left(5+17\,\text{Sin}[d+e\,x]\right)}{135\,\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)^2}\right)+$$

$$\frac{1}{675\,e}23\,\sqrt{\frac{17}{2\,\left(17+\sqrt{34}\right)}}\;\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\,\left(1-\sqrt{\frac{2}{17}}\right)},\right.$$

$$\left.-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\,\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]\,\sqrt{1-\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}$$

$$\sqrt{-\frac{1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}}}\,\sqrt{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}+\frac{1}{3375\,e}$$

$$68\,\left(-\left(\left(5\,\sqrt{\frac{1}{34}\,\left(17+\sqrt{34}\right)}\;\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\,\left(1-\sqrt{\frac{2}{17}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\,\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)\Big/$$

$$\left(17\,\sqrt{1-\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\,\sqrt{-\frac{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{-17+\sqrt{34}}}\right.$$

$$\left.\left.\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\right)\right)-$$

$$\left.\frac{\frac{3}{17}\,\left(2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)-\frac{5\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}}}{\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}}\right)$$

Problem 409: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{1}{(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x])^{7/2}}\,dx$$

Optimal (type 4, 233 leaves, 8 steps):

$$-\frac{199\,\sqrt{2+\sqrt{34}}\;\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right),\,\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{101\,250\,e}-\frac{8\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right),\,\frac{2}{15}\left(17-\sqrt{34}\right)\right]}{3375\,\sqrt{2+\sqrt{34}}\;e}-\frac{5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x]}{75\,e\,(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x])^{5/2}}+\frac{8\,(5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x])}{3375\,e\,(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x])^{3/2}}-\frac{199\,(5\,\text{Cos}[d+e\,x]-3\,\text{Sin}[d+e\,x])}{101\,250\,e\,\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}}$$

Result (type 6, 598 leaves):

$$\frac{1}{e}\sqrt{2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]}\,\left(-\frac{3383}{759375}+\frac{-305-272\,\text{Sin}[d+e\,x]}{10125\,\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)^2}+\frac{2\,\left(5+17\,\text{Sin}[d+e\,x]\right)}{225\,\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)^3}+\frac{1595+3383\,\text{Sin}[d+e\,x]}{151875\,\left(2+3\,\text{Cos}[d+e\,x]+5\,\text{Sin}[d+e\,x]\right)}\right)-$$

$$\frac{1}{50625\,e}319\sqrt{\frac{17}{2\left(17+\sqrt{34}\right)}}\;\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},-\frac{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]\sqrt{1-\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}$$

$$\sqrt{-\frac{1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}{-17+\sqrt{34}}}\;\sqrt{2+\sqrt{34}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{3}{5}\right]\right]}-\frac{1}{506250\,e}$$

$$3383\left(-\left(\left(5\sqrt{\frac{1}{34}\left(17+\sqrt{34}\right)}\;\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(1-\sqrt{\frac{2}{17}}\right)},\right.\right.\right.\right.$$

$$\left.-\frac{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}\left(-1-\sqrt{\frac{2}{17}}\right)}\right]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\Bigg)\Bigg/$$

$$\left(17\sqrt{1-\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\;\sqrt{-\frac{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{-17+\sqrt{34}}}\right.$$

$$\left.\left.\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}\right)\right)-$$

$$\left.\frac{\frac{3}{17}\left(2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]\right)-\frac{5\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}{\sqrt{34}}}{\sqrt{2+\sqrt{34}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{5}{3}\right]\right]}}\right)$$

Problem 410: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 347 leaves, 7 steps):

$$-\frac{1}{15\,e}16\,(a\,c\,\text{Cos}[d+e\,x] - a\,b\,\text{Sin}[d+e\,x])\,\sqrt{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]} - \frac{1}{5\,e}2\,(c\,\text{Cos}[d+e\,x] - b\,\text{Sin}[d+e\,x])\,(a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x])^{3/2} + \left(2\,(23\,a^2 + 9\,(b^2+c^2))\,\text{EllipticE}\left[\frac{1}{2}\,(d + e\,x - \text{ArcTan}[b, c]),\, \frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]}\right) \Bigg/ \left(15\,e\,\sqrt{\frac{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right) - \left(16\,a\,(a^2 - b^2 - c^2)\,\text{EllipticF}\left[\frac{1}{2}\,(d + e\,x - \text{ArcTan}[b, c]),\, \frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right) \Bigg/ \left(15\,e\,\sqrt{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]}\right)$$

Result (type 6, 3767 leaves):

$$\frac{1}{e}\sqrt{a + b\,\text{Cos}[d+e\,x] + c\,\text{Sin}[d+e\,x]}\left(\frac{2\,b\,(23\,a^2 + 9\,b^2 + 9\,c^2)}{15\,c} - \frac{22}{15}\,a\,c\,\text{Cos}[d+e\,x] - \frac{2}{5}\,b\,c\,\text{Cos}[2\,(d+e\,x)] + \frac{22}{15}\,a\,b\,\text{Sin}[d+e\,x] + \frac{1}{5}\,(b^2-c^2)\,\text{Sin}[2\,(d+e\,x)]\right) + \frac{1}{\sqrt{1+\frac{b^2}{c^2}}\,c\,e}2\,a^3\,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\frac{a + \sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d + e\,x + \text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\, -\frac{a + \sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d + e\,x + \text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d + e\,x + \text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}} - c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}} + c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}} + \frac{1}{15\sqrt{1+\frac{b^2}{c^2}}\,c\,e}$$

$$34\,a\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}} - c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}} + c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}} + \frac{1}{15\sqrt{1+\frac{b^2}{c^2}}\,e}$$

$$34\,a\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

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

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{15\,c\,e}$$

$$23\,a^2\,b^2\left(-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\ \sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5\,c\,e}$$

$$3\,b^4\left(-\left(\left(c\operatorname{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\Bigg)\Bigg)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{15\,e}$$

$$23\,a^2\,c\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5\,e}$$

$$6\,b^2\,c\left(-\left(\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5\,e}$$

$$3\,c^3\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

Problem 411: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 283 leaves, 6 steps):

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

Result (type 6, 2190 leaves):

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

$$\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\ c\ e} 2\,a^2\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c}\Big]\ \text{Sec}\Big[d+e\,x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\Big[d+e\,x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}\ c\ e}$$

$$2\,b^2\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c}\Big]\ \text{Sec}\Big[d+e\,x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\big[d+e\,x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\Big[d+e\,x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}\,e}$$

$$2\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\,c\,e}$$

$$4\,a\,b^2\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\Bigg)-$$

$$\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\Bigg)+\frac{1}{3\,e}$$

$$4\,a\,c\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\ \sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

Problem 412: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 108 leaves, 2 steps):

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

Result (type 6, 1408 leaves):

$$\frac{2\,b\sqrt{a+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}}{c\,e}+\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\,c\,e}$$

$$2\,a\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{c\,e}$$

$$b^2\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\Bigg)-$$

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

$$c\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

Problem 413: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 108 leaves, 2 steps):

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

$$\left(e\sqrt{a+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\right)$$

Result (type 6, 285 leaves):

$$\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\ c\ e}2\ \text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\ \text{Sin}\left[d+e\ x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a-\sqrt{1+\frac{b^2}{c^2}}\ c},\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\ \text{Sin}\left[d+e\ x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+\sqrt{1+\frac{b^2}{c^2}}\ c}\right]$$

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

$$\sqrt{\frac{\sqrt{1+\frac{b^2}{c^2}}\ c\ \left(1+\text{Sin}\left[d+e\ x+\text{ArcTan}\left[\frac{b}{c}\right]\right]\right)}{-a+\sqrt{1+\frac{b^2}{c^2}}\ c}}\ \sqrt{a+\sqrt{1+\frac{b^2}{c^2}}\ c\ \text{Sin}\left[d+e\ x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

Problem 414: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 186 leaves, 3 steps):

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

$$\left(2\ \text{EllipticE}\left[\frac{1}{2}\ \left(d+e\ x-\text{ArcTan}[b,c]\right),\frac{2\ \sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\ \sqrt{a+b\ \text{Cos}[d+e\ x]+c\ \text{Sin}[d+e\ x]}\right)\Bigg/$$

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

Result (type 6, 1540 leaves):

$$\frac{1}{e}\sqrt{a+b\ \text{Cos}[d+e\ x]+c\ \text{Sin}[d+e\ x]}$$

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

$$\left(2\,a\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

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

$$\left(b^2\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

$$\frac{1}{\left(-a^2+b^2+c^2\right)e}c\left(-\left(\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right) -$$

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

Problem 415: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 382 leaves, 7 steps):

$$\frac{2\,(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x])}{3\,(a^2-b^2-c^2)\,e\,(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x])^{3/2}}+$$
$$\frac{8\,(a\,c\,\mathrm{Cos}[d+e\,x]-a\,b\,\mathrm{Sin}[d+e\,x])}{3\,(a^2-b^2-c^2)^2\,e\,\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}}+$$
$$\left(8\,a\,\mathrm{EllipticE}\left[\frac{1}{2}\,(d+e\,x-\mathrm{ArcTan}[b,c]),\frac{2\,\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\right)\Big/$$
$$\left(3\,(a^2-b^2-c^2)^2\,e\,\sqrt{\frac{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right)-$$
$$\left(2\,\mathrm{EllipticF}\left[\frac{1}{2}\,(d+e\,x-\mathrm{ArcTan}[b,c]),\frac{2\,\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right)\Big/$$
$$\left(3\,(a^2-b^2-c^2)\,e\,\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\right)$$

Result (type 6, 2408 leaves):

$$\frac{1}{e}\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}$$
$$\left(\frac{8\,a\,(b^2+c^2)}{3\,b\,c\,(a^2-b^2-c^2)^2}+\frac{2\,(a\,c+b^2\,\mathrm{Sin}[d+e\,x]+c^2\,\mathrm{Sin}[d+e\,x])}{3\,b\,(-a^2+b^2+c^2)\,(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x])^2}-\right.$$
$$\left.\frac{2\,(3\,a^2\,c+b^2\,c+c^3+4\,a\,b^2\,\mathrm{Sin}[d+e\,x]+4\,a\,c^2\,\mathrm{Sin}[d+e\,x])}{3\,b\,(-a^2+b^2+c^2)^2\,(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x])}\right)+$$
$$\left(2\,a^2\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$
$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\mathrm{Sec}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$
$$\sqrt{\frac{c\,\sqrt{\frac{b^2+c^2}{c^2}}-c\,\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\,\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\,\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\Bigg/\left(\sqrt{1+\frac{b^2}{c^2}}\;c\,\left(-a^2+b^2+c^2\right)^2 e\right)+$$

$$\left(2\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

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

$$\left(2\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

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

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

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

$$\left(4\,a\,b^2\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Big]\ \text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\ \sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

$$\left(4\,a\,c\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

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

$$\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\Bigg)\Bigg)-$$

$$\left(\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\Bigg)\Bigg/\left(3\left(-a^2+b^2+c^2\right)^2 e\right)$$

Problem 416: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{7/2}}\,dx$$

Optimal (type 4, 490 leaves, 8 steps):

$$\frac{2\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}{5\left(a^2-b^2-c^2\right)e\left(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{5/2}}+$$

$$\frac{16\left(a\,c\,\mathrm{Cos}[d+e\,x]-a\,b\,\mathrm{Sin}[d+e\,x]\right)}{15\left(a^2-b^2-c^2\right)^2 e\left(a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{3/2}}+\Bigg(2\left(23\,a^2+9\left(b^2+c^2\right)\right)$$

$$\mathrm{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\Bigg)\Bigg/$$

$$\left(15\left(a^2-b^2-c^2\right)^3 e\sqrt{\frac{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right)-$$

$$\left(16\,a\,\mathrm{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{a+\sqrt{b^2+c^2}}}\right)\Bigg/$$

$$\left(15\left(a^2-b^2-c^2\right)^2 e\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\right)+$$

$$\left(2\left(c\left(23\,a^2+9\left(b^2+c^2\right)\right)\mathrm{Cos}[d+e\,x]-b\left(23\,a^2+9\left(b^2+c^2\right)\right)\mathrm{Sin}[d+e\,x]\right)\right)\Big/$$

$$\left(15\left(a^2-b^2-c^2\right)^3 e\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\right)$$

Result (type 6, 4116 leaves):

$$\frac{1}{e}\sqrt{a+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}$$

$$\left(-\frac{2\left(b^2+c^2\right)\left(23a^2+9b^2+9c^2\right)}{15\,b\,c\left(-a^2+b^2+c^2\right)^3}+\frac{2\left(a\,c+b^2\,\text{Sin}[d+e\,x]+c^2\,\text{Sin}[d+e\,x]\right)}{5\,b\left(-a^2+b^2+c^2\right)\left(a+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^3}-\right.$$

$$\frac{2\left(5a^2c+3b^2c+3c^3+8ab^2\,\text{Sin}[d+e\,x]+8ac^2\,\text{Sin}[d+e\,x]\right)}{15\,b\left(-a^2+b^2+c^2\right)^2\left(a+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^2}+$$

$$\left(2\left(15a^3c+17ab^2c+17ac^3+23a^2b^2\,\text{Sin}[d+e\,x]+9b^4\,\text{Sin}[d+e\,x]+23a^2c^2\,\text{Sin}[d+e\,x]+18b^2c^2\,\text{Sin}[d+e\,x]+9c^4\,\text{Sin}[d+e\,x]\right)\right)\Big/$$

$$\left.\left(15\,b\left(-a^2+b^2+c^2\right)^3\left(a+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\right)\right)-$$

$$\left(2a^3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

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

$$\left(34\,a\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c}\Bigg]\ \text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(15\sqrt{1+\frac{b^2}{c^2}}\ c\left(-a^2+b^2+c^2\right)^3 e\right)-$$

$$\Bigg(34\,a\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c},\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\ c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\ c}\right)c}\Bigg]\ \text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\ \sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(15\sqrt{1+\frac{b^2}{c^2}}\,\left(-a^2+b^2+c^2\right)^3 e\right)-$$

$$\left(23\,a^2\,b^2\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,b\,\left(a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\,\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\right)\Bigg/\left(15\,c\,\left(-a^2+b^2+c^2\right)^3\,e\right)-$$

$$\left(3\,b^4\left(-\left(\left(c\,\operatorname{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\,\sqrt{1+\frac{c^2}{b^2}}\,\left(1-\frac{a}{b\,\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\,\sqrt{1+\frac{c^2}{b^2}}\,\left(-1-\frac{a}{b\,\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\,\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\,\sqrt{\frac{b^2+c^2}{b^2}}-b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\,\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\,\sqrt{\frac{b^2+c^2}{b^2}}+b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\,\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\right)\Big/\left(5\,c\left(-a^2+b^2+c^2\right)^3 e\right)-$$

$$\left(23\,a^2\,c\left(-\left(\left(c\,\operatorname{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,b\,\left(a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\,\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\right)\Bigg/\left(15\,\left(-a^2+b^2+c^2\right)^3\,e\right)-$$

$$\left(6\,b^2\,c\,\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{a+b\,\sqrt{1+\frac{c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\,\sqrt{1+\frac{c^2}{b^2}}\,\left(1-\frac{a}{b\,\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\,\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\,\sqrt{\frac{b^2+c^2}{b^2}}-b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\,\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\,\sqrt{\frac{b^2+c^2}{b^2}}+b\,\sqrt{\frac{b^2+c^2}{b^2}}\,\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\,\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

$$\left(3\,c^3\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

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

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}$$

$$\left.\left.\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

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

Problem 420: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{5+4\,\text{Cos}[d+e\,x]+3\,\text{Sin}[d+e\,x]}}\,dx$$

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

$$\frac{\sqrt{\frac{2}{5}}\,\text{ArcTanh}\left[\frac{\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\sqrt{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{e}$$

Result (type 3, 101 leaves):

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

Problem 421: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(5+4\,\text{Cos}[d+e\,x]+3\,\text{Sin}[d+e\,x])^{3/2}}\,dx$$

Optimal (type 3, 96 leaves, 4 steps):

$$\frac{\text{ArcTanh}\left[\frac{\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\sqrt{1+\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{10\sqrt{10}\,e}-\frac{3\,\text{Cos}[d+e\,x]-4\,\text{Sin}[d+e\,x]}{10\,e\,(5+4\,\text{Cos}[d+e\,x]+3\,\text{Sin}[d+e\,x])^{3/2}}$$

Result (type 3, 154 leaves):

$$-\left(\left(\left(\frac{1}{250}-\frac{i}{125}\right)\left(3\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)\left((5+10\,i)\left(\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)-(1-i)\sqrt{20+15\,i}\;\mathrm{ArcTan}\left[\left(\frac{1}{10}+\frac{3\,i}{10}\right)\sqrt{\frac{4}{5}+\frac{3\,i}{5}}\left(-1+3\,\mathrm{Tan}\left[\frac{1}{4}(d+e\,x)\right]\right)\right]\left(3\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)^2\right)\right)\Big/\left(e\,(5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}\right)\right)$$

Problem 422: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1}{(5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}}\,dx$$

Optimal (type 3, 142 leaves, 5 steps):

$$\frac{3\,\mathrm{ArcTanh}\left[\frac{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\sqrt{1+\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{400\sqrt{10}\,e}-\frac{3\,\mathrm{Cos}[d+e\,x]-4\,\mathrm{Sin}[d+e\,x]}{20\,e\,(5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}}-\frac{3\,(3\,\mathrm{Cos}[d+e\,x]-4\,\mathrm{Sin}[d+e\,x])}{400\,e\,(5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}}$$

Result (type 3, 180 leaves):

$$-\left(\left(\left(\frac{1}{20\,000}-\frac{i}{10\,000}\right)\left(3\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)\left((-6+6\,i)\sqrt{20+15\,i}\;\mathrm{ArcTan}\left[\left(\frac{1}{10}+\frac{3\,i}{10}\right)\sqrt{\frac{4}{5}+\frac{3\,i}{5}}\left(-1+3\,\mathrm{Tan}\left[\frac{1}{4}(d+e\,x)\right]\right)\right]\left(3\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)^4+(5+10\,i)\left(55\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]+39\,\mathrm{Cos}\left[\frac{3}{2}(d+e\,x)\right]-165\,\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]-27\,\mathrm{Sin}\left[\frac{3}{2}(d+e\,x)\right]\right)\right)\right)\Big/\left(e\,(5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}\right)\right)$$

Problem 427: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x]}}\,dx$$

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

$$-\frac{\sqrt{\frac{2}{5}}\ \mathrm{ArcTan}\left[\frac{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\ \sqrt{-1+\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{e}$$

Result (type 3, 99 leaves):

$$\left(\left(\frac{2}{5}+\frac{6\,i}{5}\right)\sqrt{-\frac{4}{5}-\frac{3\,i}{5}}\ \mathrm{ArcTanh}\left[\left(\frac{1}{10}+\frac{3\,i}{10}\right)\sqrt{-\frac{4}{5}-\frac{3\,i}{5}}\ \left(3+\mathrm{Tan}\left[\frac{1}{4}\,(d+e\,x)\right]\right)\right]\right.$$
$$\left.\left(\mathrm{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\left(e\,\sqrt{-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x]}\right)$$

Problem 428: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}}\,dx$$

Optimal (type 3, 96 leaves, 4 steps):

$$\frac{\mathrm{ArcTan}\left[\frac{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\ \sqrt{-1+\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{10\,\sqrt{10}\ e}+\frac{3\,\mathrm{Cos}[d+e\,x]-4\,\mathrm{Sin}[d+e\,x]}{10\,e\,(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}}$$

Result (type 3, 152 leaves):

$$\left(\left(\frac{1}{250}-\frac{i}{125}\right)\left(\mathrm{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right.$$
$$\left((-1+i)\,\sqrt{-20-15\,i}\ \mathrm{ArcTanh}\left[\left(\frac{1}{10}+\frac{3\,i}{10}\right)\sqrt{-\frac{4}{5}-\frac{3\,i}{5}}\ \left(3+\mathrm{Tan}\left[\frac{1}{4}\,(d+e\,x)\right]\right)\right]\right.$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^2+$$
$$\left.\left.(5+10\,i)\left(3\,\mathrm{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\right)\Big/$$
$$\left(e\,(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}\right)$$

Problem 429: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}}\,dx$$

Optimal (type 3, 142 leaves, 5 steps):

$$-\frac{3\,\mathrm{ArcTan}\left[\frac{\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}{\sqrt{2}\,\sqrt{-1+\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{3}{4}\right]\right]}}\right]}{400\,\sqrt{10}\,e}+\frac{3\,\mathrm{Cos}[d+e\,x]-4\,\mathrm{Sin}[d+e\,x]}{20\,e\,(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}}-\frac{3\,(3\,\mathrm{Cos}[d+e\,x]-4\,\mathrm{Sin}[d+e\,x])}{400\,e\,(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{3/2}}$$

Result (type 3, 178 leaves):

$$\left(\left(\frac{1}{10000}+\frac{i}{20000}\right)\left(\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)\left((6+6\,i)\,\sqrt{-20-15\,i}\;\mathrm{ArcTanh}\left[\left(\frac{1}{10}+\frac{3\,i}{10}\right)\sqrt{-\frac{4}{5}-\frac{3\,i}{5}}\left(3+\mathrm{Tan}\left[\frac{1}{4}(d+e\,x)\right]\right)\right]\left(\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]-3\,\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]\right)^4+(10-5\,i)\left(165\,\mathrm{Cos}\left[\frac{1}{2}(d+e\,x)\right]-27\,\mathrm{Cos}\left[\frac{3}{2}(d+e\,x)\right]+55\,\mathrm{Sin}\left[\frac{1}{2}(d+e\,x)\right]-39\,\mathrm{Sin}\left[\frac{3}{2}(d+e\,x)\right]\right)\right)\right)\Big/\left(e\,(-5+4\,\mathrm{Cos}[d+e\,x]+3\,\mathrm{Sin}[d+e\,x])^{5/2}\right)$$

Problem 430: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{7/2}dx$$

Optimal (type 3, 258 leaves, 4 steps):

$$-\frac{256\left(b^2+c^2\right)^{3/2}\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)}{35\,e\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}}-\frac{1}{35\,e}$$

$$64\left(b^2+c^2\right)\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}-\frac{1}{35\,e}$$

$$24\sqrt{b^2+c^2}\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}-$$

$$\frac{1}{7\,e}2\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}$$

Result (type 4, 11 888 leaves) :

$$\frac{1}{e}\sqrt{b^2+c^2}\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}$$

$$\left(\frac{24\,b\left(b^2+c^2\right)}{5\,c}-\frac{2}{5}c\sqrt{b^2+c^2}\,\text{Cos}[d+e\,x]-\frac{6}{5}b\,c\,\text{Cos}[2\,(d+e\,x)]+\frac{2}{5}b\sqrt{b^2+c^2}\,\text{Sin}[d+e\,x]+\right.$$

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

$$\left(\frac{88\,b\left(b^2+c^2\right)^{3/2}}{35\,c}-\frac{173}{70}c\left(b^2+c^2\right)\text{Cos}[d+e\,x]-\frac{2}{35}b\,c\sqrt{b^2+c^2}\,\text{Cos}[2\,(d+e\,x)]-\right.$$

$$\frac{1}{14}c\left(3\,b^2-c^2\right)\text{Cos}[3\,(d+e\,x)]+\frac{173}{70}b\left(b^2+c^2\right)\text{Sin}[d+e\,x]+$$

$$\left.\frac{1}{35}\left(b^2-c^2\right)\sqrt{b^2+c^2}\,\text{Sin}[2\,(d+e\,x)]+\frac{1}{14}b\left(b^2-3\,c^2\right)\text{Sin}[3\,(d+e\,x)]\right)-\left(1024\,b\,(-\mathrm{i}\,b+c)\right.$$

$$\left(b^2+c^2\right)^2\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-\right.$$

$$\left.2\,\text{EllipticPi}\left[-1,\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$

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

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

$$\left(35\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)^2\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)e\left(1+\text{Cos}[d+e\,x]\right)\right.$$

$$\sqrt{\frac{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}\;\sqrt{\Bigg(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)}$$

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

$$\frac{1}{35\,c\,e\,(1+\text{Cos}[d+e\,x])\sqrt{\frac{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}}\,256\,\left(b^2+c^2\right)^{5/2}$$

$$\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\;\Bigg(\Bigg(\left(-b+c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

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

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

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

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

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

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

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

$$\Bigg(\Bigg(2\,c^2\left(-i-\frac{c}{b-\sqrt{b^2+c^2}}\right)\Bigg(-i\,\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[$$

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

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

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

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

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right], 1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right], 1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left(-b+\sqrt{b^2+c^2}\right)\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\Bigg)\Bigg)\Bigg)+\Bigg(4\,b^5\,\Bigg(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]-$$

$$2\,\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\Bigg(8\,b^2\sqrt{b^2+c^2}\,\Bigg(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

$$\left(8\,b^4\sqrt{b^2+c^2}\left(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$
$$\left.\left.\sqrt{\frac{\left(-\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$
$$\mathbb{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$
$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$
$$\left(-\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$
$$\left.\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\left(c^2\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\right.$$
$$\left(\mathbb{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}$$
$$\left.\left.\left(b+\sqrt{b^2+c^2}+2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\left(-b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)+$$

$$\left(4\,b\left(b^2+c^2\right)\left(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$
$$\left.\left.\sqrt{\frac{\left(-\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right], 1\right]\Bigg)$$

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

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

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

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

$$\Bigg(4\, b^3\left(b^2+c^2\right)\Bigg(\left(-b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right], 1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-$$

$$2\,\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

$$\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}$$

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

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

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

$$\left(4 b\left(b^2+c^2\right)\left(\left(-b+i c-\sqrt{b^2+c^2}\right)\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\right.\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2$$

$$i c \operatorname{EllipticPi}\left[\frac{\left(b+i c+\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-i c+\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\operatorname{ArcSin}\left[\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]\right)$$

$$\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}$$

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

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

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

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

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)$$

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

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

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

$$\Bigg(2\,b\,c\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\Bigg[\mathrm{ArcSin}\Bigg[$$

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

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

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

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

$$\Bigg(2\,b^2\sqrt{b^2+c^2}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\Bigg[\mathrm{ArcSin}\Bigg[$$

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

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

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

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

$$\Bigg(b\,c\,\Bigg(2\,i\,\Bigg(-\frac{1}{2}\,i\left(i+\frac{c}{b-\sqrt{b^2+c^2}}\right)\text{EllipticE}\Big[\text{ArcSin}\Big[$$

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

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

$$\left(i\left(i\left(-i-\frac{c}{b-\sqrt{b^2+c^2}}\right)+i\left(i-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$

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

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

$$\left(2\left(-i+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)+\Bigg(2\,c\,\text{EllipticPi}\Big[\frac{i+\frac{c}{b-\sqrt{b^2+c^2}}}{-i+\frac{c}{b-\sqrt{b^2+c^2}}},$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 431: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]\right)^{5/2}dx$$

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

$$-\frac{64\left(b^2+c^2\right)\left(c\,\text{Cos}[d+e x]-b\,\text{Sin}[d+e x]\right)}{15 e\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}}-\frac{1}{15 e}$$
$$16\sqrt{b^2+c^2}\left(c\,\text{Cos}[d+e x]-b\,\text{Sin}[d+e x]\right)\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}-$$
$$\frac{1}{5 e}2\left(c\,\text{Cos}[d+e x]-b\,\text{Sin}[d+e x]\right)\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]\right)^{3/2}$$

Result (type 4, 11 771 leaves):

$$\frac{1}{e}\sqrt{b^2+c^2}\left(\frac{4 b\sqrt{b^2+c^2}}{3 c}-\frac{4}{3}c\,\text{Cos}[d+e x]+\frac{4}{3}b\,\text{Sin}[d+e x]\right)$$
$$\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}+\frac{1}{e}\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}$$
$$\left(\frac{44 b\left(b^2+c^2\right)}{15 c}-\frac{2}{15}c\sqrt{b^2+c^2}\,\text{Cos}[d+e x]-\frac{2}{5}b c\,\text{Cos}[2(d+e x)]+\right.$$
$$\left.\frac{2}{15}b\sqrt{b^2+c^2}\,\text{Sin}[d+e x]+\frac{1}{5}\left(b^2-c^2\right)\text{Sin}[2(d+e x)]\right)-\left(256 b\left(-\mathrm{i}\,b+c\right)\left(b^2+c^2\right)^{3/2}\right.$$

$$\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-\right.$$

$$\left.2\,\text{EllipticPi}\left[-1,\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]\right)$$

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

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

$$\left(15\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)^2\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)e\,(1+\text{Cos}[d+e\,x])\right.$$

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

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

$$\frac{1}{15\,c\,e\,(1+\text{Cos}[d+e\,x])\,\sqrt{\frac{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}}$$

$$64\left(b^2+c^2\right)^2\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}$$

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

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

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

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

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

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

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

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

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]+2\,i\,\text{EllipticPi}\Big[$$

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

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

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

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

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

$$\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right)\right)+\left(4\,b\,c^2\,\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-$$

$$2\,\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\left(8\,b^2\,\sqrt{b^2+c^2}\,\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\text{i}\, c\, \text{EllipticPi}\Big[\frac{\left(b+\text{i} c-\sqrt{b^2+c^2}\right)\left(\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\text{i} c-\sqrt{b^2+c^2}\right)\left(-\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},$$

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

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

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

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

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

$$\Bigg(8\, b^4\sqrt{b^2+c^2}\,\Bigg(\left(-b+\text{i} c+\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\text{i}\, c\, \text{EllipticPi}\Big[\frac{\left(b+\text{i} c-\sqrt{b^2+c^2}\right)\left(\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\text{i} c-\sqrt{b^2+c^2}\right)\left(-\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},$$

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

$$\left(-i+\tan\left[\frac{1}{2}(d+e x)\right]\right)\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\tan\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\tan\left[\frac{1}{2}(d+e x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\tan\left[\frac{1}{2}(d+e x)\right]\right)\right)\Big/\left(c^2\left(b-i c-\sqrt{b^2+c^2}\right)\left(-b-i c+\sqrt{b^2+c^2}\right)\right.$$

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

$$\left.\left.\left(b+\sqrt{b^2+c^2}+2 c \tan\left[\frac{1}{2}(d+e x)\right]+\left(-b+\sqrt{b^2+c^2}\right)\tan\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)+$$

$$\left(4 b\left(b^2+c^2\right)\left(\left(-b+i c+\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$i c\,\text{EllipticPi}\left[\frac{\left(b+i c-\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-i c-\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

$$\left(-i+\tan\left[\frac{1}{2}(d+e x)\right]\right)\sqrt{\frac{\left(-i b+c+i\sqrt{b^2+c^2}\right)\left(i+\tan\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i b+c-i\sqrt{b^2+c^2}\right)\left(-i+\tan\left[\frac{1}{2}(d+e x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\tan\left[\frac{1}{2}(d+e x)\right]\right)\right)\Big/\left(\left(b-i c-\sqrt{b^2+c^2}\right)\left(-b-i c+\sqrt{b^2+c^2}\right)\right.$$

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

$$\left.\left.\left(b+\sqrt{b^2+c^2}+2 c \tan\left[\frac{1}{2}(d+e x)\right]+\left(-b+\sqrt{b^2+c^2}\right)\tan\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)+$$

$$\left(4 b^3 \left(b^2+c^2\right) \left(\left(-b+\mathbb{i} c+\sqrt{b^2+c^2}\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i} b+c+\mathbb{i} \sqrt{b^2+c^2}\right) \left(\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(\mathbb{i} b+c-\mathbb{i} \sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right]-2 \mathbb{i} c \,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i} c-\sqrt{b^2+c^2}\right) \left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i} c-\sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}, \text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i} b+c+\mathbb{i} \sqrt{b^2+c^2}\right) \left(\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(\mathbb{i} b+c-\mathbb{i} \sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right]\right) \left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right) \sqrt{\frac{\left(-\mathbb{i} b+c+\mathbb{i} \sqrt{b^2+c^2}\right) \left(\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(\mathbb{i} b+c-\mathbb{i} \sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}} \left(-\frac{c}{b-\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)\right) \Bigg/ \left(c^2 \left(b-\mathbb{i} c-\sqrt{b^2+c^2}\right) \left(-b-\mathbb{i} c+\sqrt{b^2+c^2}\right) \left(\mathbb{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right) \left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right) \sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2} (d+e x)\right]^2\right) \left(b+\sqrt{b^2+c^2}+2 c \,\text{Tan}\left[\frac{1}{2} (d+e x)\right]+\left(-b+\sqrt{b^2+c^2}\right) \text{Tan}\left[\frac{1}{2} (d+e x)\right]^2\right)\right)}\right)+\left(8 b^3 \left(\left(-b+\mathbb{i} c-\sqrt{b^2+c^2}\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i} b+c+\mathbb{i} \sqrt{b^2+c^2}\right) \left(\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(\mathbb{i} b+c-\mathbb{i} \sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right]-2 \mathbb{i} c \,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i} c+\sqrt{b^2+c^2}\right) \left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i} c+\sqrt{b^2+c^2}\right) \left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.\right.\right.$$

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

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

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

$$\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b - i\,c + \sqrt{b^2 + c^2}\right)\left(i - \frac{c}{b - \sqrt{b^2 + c^2}}\right)\left(\frac{-b - \sqrt{b^2 + c^2}}{c} - \frac{-b + \sqrt{b^2 + c^2}}{c}\right)$$

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i\,b + c + i\sqrt{b^2 + c^2}\right)\left(i + \text{Tan}\left[\frac{1}{2}(d + e\,x)\right]\right)}{\left(i\,b + c - i\sqrt{b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}(d + e\,x)\right]\right)}}\right], 1\right] -$$

$$2\,i\,c\,\text{EllipticPi}\left[\frac{\left(b + i\,c + \sqrt{b^2 + c^2}\right)\left(i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)}{\left(b - i\,c + \sqrt{b^2 + c^2}\right)\left(-i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)},\right.$$

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

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

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

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

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

$$\Bigg(4\,b\left(b^2 + c^2\right)\Bigg(\left(-b + i\,c - \sqrt{b^2 + c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\mathrm{i}\, c\, \mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\left(4\, b^3\left(b^2+c^2\right)\left(\left(-b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathrm{i}\, c\, \mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathbb{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)$$

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

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

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

$$\left(2\,b\,c\left(-\mathbb{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.$$

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

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

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

$$\left(2\,b^2\sqrt{b^2+c^2}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.$$

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

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

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

$$\left(b\,c\left(2\,\mathrm{i}\left(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.\right.$$
$$\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right/}$$
$$\left.\left.\left.\left(\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)\right],1\right]-$$
$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\mathrm{EllipticF}\left[\right.\right.$$
$$\mathrm{ArcSin}\left[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right/}\right.$$

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

$$\left(2\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)+\Bigg(2\,c\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}},$$

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

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

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

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

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

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

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

$$\Bigg(c\sqrt{b^2+c^2}\Bigg(2\,\mathrm{i}\Bigg(-\frac{1}{2}\mathrm{i}\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[$$

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

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

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\right)\mathrm{EllipticF}\Big[$$

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

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

$$\left(2\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)+\Bigg(2\,c\,\text{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}},$$

$$\text{ArcSin}\Big[\sqrt{\Big(\Big(\Big(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\Big)\Big(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\Big)\Big)\Big/}$$

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

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

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

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

$$\Bigg(\sqrt{\Big(\Big(1+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]^2\Big)\Big(b+\sqrt{b^2+c^2}+2\,c\,\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]+}$$

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

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

$$b\,\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]^2+\sqrt{b^2+c^2}\,\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]^2\Big)$$

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

Problem 432: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\left(\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}\,dx$$

Optimal (type 3, 126 leaves, 2 steps):

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

Result (type 4, 11679 leaves):

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

$$\left(32\,b\,\left(-\mathrm{i}\,b+c\right)\,\left(b^2+c^2\right)\,\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-2\,\text{EllipticPi}\left[-1,\text{ArcSin}\left[\sqrt{-\frac{\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]\right)\right.$$

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

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

$$\left(3\,\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)^2\,\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,e\,\left(1+\text{Cos}[d+e\,x]\right)\right.$$

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

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

$$\frac{1}{3\,c\,e\,\left(1+\text{Cos}[d+e\,x]\right)\,\sqrt{\frac{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}}8\,\left(b^2+c^2\right)^{3/2}$$

$$\sqrt{\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\;\Bigg(\Bigg(\Bigg(-b+c\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]\Bigg)$$

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

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

$$\sqrt{b^2+c^2}\,\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\Big)\Big)\Bigg)\Bigg/\Bigg(\big(b^2+c^2\big)\,\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)$$

$$\sqrt{\Big(b+2\,c\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]-b\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2+\sqrt{b^2+c^2}\,\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\Big)}\Bigg)-$$

$$\Bigg(\sqrt{\Big(\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\,\Big(b+\sqrt{b^2+c^2}+2\,c\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]-b\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2+}$$

$$\sqrt{b^2+c^2}\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\Big)\,\sqrt{\Big(\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)}$$

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

$$\Bigg(\Bigg(2\,c^2\,\Bigg(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\Bigg)\,\Bigg(-\mathrm{i}\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{\big(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}{\big(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(-\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}}\Big],1\Big]+2\,\mathrm{i}\,\text{EllipticPi}\Big[$$

$$\frac{\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}},\,\text{ArcSin}\Big[\sqrt{\frac{\big(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}{\big(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(-\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}}\Big],1\Big]\Bigg)$$

$$\Big(-\mathrm{i}+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]\Big)\,\sqrt{\frac{\big(-\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}{\big(\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\big)\,\big(-\mathrm{i}+\text{Tan}\big[\frac{1}{2}\,(d+e\,x)\big]\big)}}$$

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

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(-b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\Bigg)+\Bigg(4 b^5\Bigg(\left(-b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\ c\ \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\ c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\ c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(-b-\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\ b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\ b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-$$

$$2\,\mathrm{i}\ c\ \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\ c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\ c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\left(8\,b^2\,\sqrt{b^2+c^2}\,\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

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

$$\left(4\,b\left(b^2+c^2\right)\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2\,\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.\right.\right.$$

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

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

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

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

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

$$\Bigg(4\,b^3\left(b^2+c^2\right)\Bigg(\left(-b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\mathrm{i}\, c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(-b - i c + \sqrt{b^2 + c^2}\right) \left(i - \frac{c}{b - \sqrt{b^2 + c^2}}\right) \left(-\frac{-b - \sqrt{b^2 + c^2}}{c} + \frac{-b + \sqrt{b^2 + c^2}}{c}\right)$$

$$\sqrt{\left(\left(1 + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]^2\right) \left(b + \sqrt{b^2 + c^2} + 2 c \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right] + \right.\right.}$$

$$\left.\left.\left(-b + \sqrt{b^2 + c^2}\right) \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]^2\right)\right)\Bigg) + \left(8 b^3 \left(\left(-b + i c - \sqrt{b^2 + c^2}\right)\right.\right.$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{\frac{\left(-i b + c + i \sqrt{b^2 + c^2}\right) \left(i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i b + c - i \sqrt{b^2 + c^2}\right) \left(-i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}\right], 1\right] - 2$$

$$i c \operatorname{EllipticPi}\left[\frac{\left(b + i c + \sqrt{b^2 + c^2}\right) \left(i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)}{\left(b - i c + \sqrt{b^2 + c^2}\right) \left(-i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)},\right.$$

$$\left.\left.\operatorname{ArcSin}\left[\sqrt{\frac{\left(-i b + c + i \sqrt{b^2 + c^2}\right) \left(i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i b + c - i \sqrt{b^2 + c^2}\right) \left(-i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}\right], 1\right]\right)$$

$$\left(-i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right) \sqrt{\frac{\left(-i b + c + i \sqrt{b^2 + c^2}\right) \left(i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i b + c - i \sqrt{b^2 + c^2}\right) \left(-i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b - \sqrt{b^2 + c^2}} + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)\right) \Bigg/ \left(\left(-b - i c - \sqrt{b^2 + c^2}\right)\right.$$

$$\left(b - i c + \sqrt{b^2 + c^2}\right) \left(i - \frac{c}{b - \sqrt{b^2 + c^2}}\right) \left(\frac{-b - \sqrt{b^2 + c^2}}{c} - \frac{-b + \sqrt{b^2 + c^2}}{c}\right)$$

$$\sqrt{\left(\left(1 + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]^2\right) \left(b + \sqrt{b^2 + c^2} + 2 c \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right] + \right.\right.}$$

$$\left.\left.\left(-b + \sqrt{b^2 + c^2}\right) \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]^2\right)\right)\Bigg) + \left(4 b^5 \left(\left(-b + i c - \sqrt{b^2 + c^2}\right)\right.\right.$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{\frac{\left(-i b + c + i \sqrt{b^2 + c^2}\right) \left(i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i b + c - i \sqrt{b^2 + c^2}\right) \left(-i + \operatorname{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}\right], 1\right] - 2$$

$$\mathrm{i}\ c\ \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\ b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\ b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(b-\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\Bigg)+\Bigg(4\,b\,c^2\Bigg(\left(-b+\mathrm{i}\ c-\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\ b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\ b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-$$

$$2\,\mathrm{i}\ c\ \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\ c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\ b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\ b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

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

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

$$\left(4\,b\,\left(b^2+c^2\right)\,\left(\left(-b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(\left(-b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right.$$

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

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

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

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]$$

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

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

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

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

$$\left(2\,b\,c\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.$$

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

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

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

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

$$\left(2\,b^2\sqrt{b^2+c^2}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.$$

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

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

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

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

$$\left(b\,c\left(2\,\mathrm{i}\left(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\text{EllipticE}\left[\text{ArcSin}\left[\right.\right.\right.\right.\right.$$

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

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

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\left[\right.\right.$$

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

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

$$\left(2\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\text{EllipticPi}\left[\frac{\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}},\right.\right.$$

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

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

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

$$\sqrt{\frac{\left(-\dot{\imath}\, b+c+\dot{\imath}\sqrt{b^2+c^2}\right)\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\dot{\imath}\, b+c-\dot{\imath}\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)+\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)^2\Bigg)\Bigg)\Bigg/$$

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

$$\Bigg(c\sqrt{b^2+c^2}\,\Bigg(2\,\dot{\imath}\,\Bigg(-\frac{1}{2}\,\dot{\imath}\left(\dot{\imath}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[$$

$$\sqrt{\left(\left(\left(-\dot{\imath}\, b+c+\dot{\imath}\sqrt{b^2+c^2}\right)\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\left(\left(\dot{\imath}\, b+c-\dot{\imath}\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)}\Big],1\Big]-$$

$$\left(\dot{\imath}\left(\dot{\imath}\left(-\dot{\imath}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\dot{\imath}\left(\dot{\imath}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\mathrm{EllipticF}\Big[\right.$$

$$\left.\mathrm{ArcSin}\Big[\sqrt{\left(\left(\left(-\dot{\imath}\, b+c+\dot{\imath}\sqrt{b^2+c^2}\right)\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\left(\left(\dot{\imath}\, b+c-\dot{\imath}\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)}\Big],1\Big]\right)\Big/$$

$$\left(2\left(-\dot{\imath}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\Bigg)+\Bigg(2\,c\,\mathrm{EllipticPi}\Big[\frac{\dot{\imath}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\dot{\imath}+\frac{c}{b-\sqrt{b^2+c^2}}},$$

$$\mathrm{ArcSin}\Big[\sqrt{\left(\left(\left(-\dot{\imath}\, b+c+\dot{\imath}\sqrt{b^2+c^2}\right)\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\left(\left(\dot{\imath}\, b+c-\dot{\imath}\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)}\Big],1\Big]\Bigg)\Big/$$

$$\left(\left(b-\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\Bigg)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

$$\sqrt{\frac{\left(-\dot{\imath}\, b+c+\dot{\imath}\sqrt{b^2+c^2}\right)\left(\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\dot{\imath}\, b+c-\dot{\imath}\sqrt{b^2+c^2}\right)\left(-\dot{\imath}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}\left(d+\right.\right.\right.$$

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

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

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

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

Problem 433: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}\,dx$$

Optimal (type 3, 55 leaves, 1 step):

$$-\frac{2\,(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x])}{e\sqrt{\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}}$$

Result (type 4, 11 586 leaves):

$$\frac{2\,b\sqrt{\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}}{c\,e}-$$

$$\left(8\,b\,(-i\,b+c)\sqrt{b^2+c^2}\left(\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\sqrt{-\frac{\left(-b-i\,c+\sqrt{b^2+c^2}\right)\left(i+\mathrm{Tan}\big[\frac{1}{2}(d+e\,x)\big]\right)}{\left(-b+i\,c+\sqrt{b^2+c^2}\right)\left(-i+\mathrm{Tan}\big[\frac{1}{2}(d+e\,x)\big]\right)}}\Big],\right.\right.$$

$$\left.1\Big]-2\,\mathrm{EllipticPi}\Big[-1,\mathrm{ArcSin}\Big[\sqrt{-\frac{\left(-b-i\,c+\sqrt{b^2+c^2}\right)\left(i+\mathrm{Tan}\big[\frac{1}{2}(d+e\,x)\big]\right)}{\left(-b+i\,c+\sqrt{b^2+c^2}\right)\left(-i+\mathrm{Tan}\big[\frac{1}{2}(d+e\,x)\big]\right)}}\Big],1\Big]\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(\Bigg(2\,c^2\left(-i-\frac{c}{b-\sqrt{b^2+c^2}}\right)\Bigg(-i\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

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

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

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

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

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

$$\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-i\,b+c+i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(i\,b+c-i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]-2$$

$$i\,c\,\text{EllipticPi}\Big[\frac{\left(b+i\,c-\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-i\,c-\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b-\sqrt{b^2+c^2}}\right)},$$

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

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

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)\right)+\left(4\,b^5\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\operatorname{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\operatorname{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}$$

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

$$\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\operatorname{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)\right)+\left(4\,b\,c^2\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-$$

$$2\,\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

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

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

$$\Bigg(8\,b^2\sqrt{b^2+c^2}\,\Bigg(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[$$

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

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}$$

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

$$\left(8\, b^4\sqrt{b^2+c^2}\left(\left(-b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathrm{i}\, c\, \mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}$$

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

$$\left(4\,b\,\left(b^2+c^2\right)\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2\,\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\right)\Bigg/\left(\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\left(b+\sqrt{b^2+c^2}+2\,c\,\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]+\left(-b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)}\right)+$$

$$\left(4\,b^3\,\left(b^2+c^2\right)\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2\,\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.\right.\right.$$

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

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

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

$$\left(-b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right], 1\right]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b - i c + \sqrt{b^2 + c^2}\right) \left(i - \frac{c}{b - \sqrt{b^2 + c^2}}\right) \left(\frac{-b - \sqrt{b^2 + c^2}}{c} - \frac{-b + \sqrt{b^2 + c^2}}{c}\right)$$

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

$$\left.\left.\left(-b + \sqrt{b^2 + c^2}\right) \text{Tan}\left[\frac{1}{2}(d + e x)\right]^2\right)\right)\Bigg) + \Bigg(4 b^5 \Bigg(\left(-b + i c - \sqrt{b^2 + c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i b + c + i \sqrt{b^2 + c^2}\right) \left(i + \text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i b + c - i \sqrt{b^2 + c^2}\right) \left(-i + \text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}\right], 1\right] - 2$$

$$i c \,\text{EllipticPi}\left[\frac{\left(b + i c + \sqrt{b^2 + c^2}\right) \left(i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)}{\left(b - i c + \sqrt{b^2 + c^2}\right) \left(-i + \frac{c}{b - \sqrt{b^2 + c^2}}\right)},\right.$$

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

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

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

$$\left(c^2 \left(-b - i c - \sqrt{b^2 + c^2}\right) \left(b - i c + \sqrt{b^2 + c^2}\right) \left(i - \frac{c}{b - \sqrt{b^2 + c^2}}\right)\right.$$

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

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

$$\Bigg(4 b c^2 \Bigg(\left(-b + i c - \sqrt{b^2 + c^2}\right) \text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\text{i}\, c\,\text{EllipticPi}\Big[\frac{\left(b+\text{i} c+\sqrt{b^2+c^2}\right)\left(\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\text{i} c+\sqrt{b^2+c^2}\right)\left(-\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},$$

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

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

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

$$\Bigg(\left(-b-\text{i} c-\sqrt{b^2+c^2}\right)\left(b-\text{i} c+\sqrt{b^2+c^2}\right)\left(\text{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)$$

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

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

$$\Bigg(4 b\left(b^2+c^2\right)\Bigg(\left(-b+\text{i} c-\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\text{i}\, c\,\text{EllipticPi}\Big[\frac{\left(b+\text{i} c+\sqrt{b^2+c^2}\right)\left(\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\text{i} c+\sqrt{b^2+c^2}\right)\left(-\text{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},$$

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

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

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

$$\left(\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right.$$

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

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

$$\Bigg(4\,b^3\left(b^2+c^2\right)\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

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

$$\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]$$

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

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

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

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

$$\left(2\,b\,c\,\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.$$

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

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

$$\left(\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

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

$$\left(2 b^2\sqrt{b^2+c^2}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.$$

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

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

$$\left(c\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

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

$$\left(b c\left(2\mathrm{i}\left(-\frac{1}{2}\mathrm{i}\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.\right.$$

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

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

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$
$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\Big/\right.}$$
$$\left.\left.\left(\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\right)\Big],1\Big]\right)\Big/$$
$$\left(2\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\text{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}},\right.$$
$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\Big/\right.}$$
$$\left.\left.\left(\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\right)\Big],1\Big]\right)\Big/$$
$$\left.\left(\left(b-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\right)\left(-\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)$$
$$\sqrt{\frac{\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\text{Tan}\Big[\frac{1}{2}(d+\right.$$
$$\left.\left.\left.e\,x)\Big]\right)+\left(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\left(-\frac{c}{b-\sqrt{b^2+c^2}}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)^2\right)\right)\Big/$$
$$\left(\sqrt{\left(\left(1+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]^2\right)\left(b+\sqrt{b^2+c^2}+2\,c\,\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]+\right.\right.}\right.$$
$$\left.\left.\left.\left(-b+\sqrt{b^2+c^2}\right)\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]^2\right)\right)\right)+$$
$$\left(c\sqrt{b^2+c^2}\left(2\,\mathrm{i}\left(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b-\sqrt{b^2+c^2}}\right)\text{EllipticE}\Big[\text{ArcSin}\Big[\right.\right.\right.$$
$$\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\Big/\right.}$$
$$\left.\left.\left(\left(\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\right)\Big],1\Big]-$$
$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b-\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$
$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\Big[\frac{1}{2}(d+e\,x)\Big]\right)\right)\Big/\right.}$$

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

$$\left(2 \left(-\mathrm{i} + \frac{c}{b - \sqrt{b^2 + c^2}}\right)\right) + \Bigg(2\, c\, \text{EllipticPi}\Bigg[\frac{\mathrm{i} + \frac{c}{b - \sqrt{b^2 + c^2}}}{-\mathrm{i} + \frac{c}{b - \sqrt{b^2 + c^2}}},$$

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

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

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

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

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

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

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

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

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

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

Problem 434: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}}\,dx$$

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

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

Result (type 4, 63 264 leaves): Display of huge result suppressed!

Problem 435: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{3/2}}\,dx$$

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

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

Result (type 1, 1 leaves):

???

Problem 436: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 226 leaves, 5 steps):

$$\frac{3\,\mathrm{ArcTanh}\left[\frac{\left(b^2+c^2\right)^{1/4}\mathrm{Sin}[d+e\,x-\mathrm{ArcTan}[b,c]]}{\sqrt{2}\sqrt{\sqrt{b^2+c^2}+\sqrt{b^2+c^2}\,\mathrm{Cos}[d+e\,x-\mathrm{ArcTan}[b,c]]}}\right]}{16\sqrt{2}\left(b^2+c^2\right)^{5/4}e}-\frac{c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]}{4\sqrt{b^2+c^2}\,e\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{5/2}}-\frac{3\left(c\,\mathrm{Cos}[d+e\,x]-b\,\mathrm{Sin}[d+e\,x]\right)}{16\left(b^2+c^2\right)e\left(\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{3/2}}$$

Result (type 1, 1 leaves):

???

Problem 437: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}\,dx$$

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

$$-\frac{64\left(b^2+c^2\right)\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)}{15\,e\,\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}}+\frac{1}{15\,e}16\,\sqrt{b^2+c^2}\,\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}-\frac{1}{5\,e}2\,\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}$$

Result (type 4, 11 602 leaves):

$$\frac{1}{e}\sqrt{b^2+c^2}\left(\frac{4\,b\,\sqrt{b^2+c^2}}{3\,c}+\frac{4}{3}c\,\text{Cos}[d+e\,x]-\frac{4}{3}b\,\text{Sin}[d+e\,x]\right)\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}+\frac{1}{e}\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\left(\frac{44\,b\,\left(b^2+c^2\right)}{15\,c}+\frac{2}{15}c\,\sqrt{b^2+c^2}\,\text{Cos}[d+e\,x]-\frac{2}{5}b\,c\,\text{Cos}\left[2\,\left(d+e\,x\right)\right]-\frac{2}{15}b\,\sqrt{b^2+c^2}\,\text{Sin}[d+e\,x]+\frac{1}{5}\left(b^2-c^2\right)\text{Sin}\left[2\,\left(d+e\,x\right)\right]\right)-$$

$$\left(256\,b\,c\,\left(b^2+c^2\right)^{5/2}\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2\,\text{EllipticPi}\left[-1,\text{ArcSin}\left[\sqrt{-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\right)\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\left(-i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\left(-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}\right)^{3/2}\left(-c+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)\Big/$$

$$\left(15\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)^3\left(b^2+c^2-b\sqrt{b^2+c^2}\right)e\left(1+\mathrm{Cos}[d+e\,x]\right)\right.$$

$$\sqrt{\frac{-\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{(1+\mathrm{Cos}[d+e\,x])^2}}$$

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

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

$$\frac{1}{15\,c\,e\,(1+\mathrm{Cos}[d+e\,x])\sqrt{\frac{-\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}{(1+\mathrm{Cos}[d+e\,x])^2}}}$$

$$64\left(b^2+c^2\right)^2\sqrt{-\sqrt{b^2+c^2}+b\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]}$$

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

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

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

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

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

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

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

$$\sqrt{b^2+c^2}\,\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\Big)\Big)\Bigg)\;\Bigg(\Bigg(2\,c^2\,\Big(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\Big)\,\Bigg(-\mathrm{i}\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\Big],\,1\Big]+2\,\mathrm{i}\,\text{EllipticPi}\Big[$$

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

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

$$\Big(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]\Big)\Bigg)\Bigg/\;\Bigg(\Bigg(\Big(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\Big)\,\Big(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\Big)$$

$$\sqrt{\Big(\Big(1+\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\,\Big(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]+\Big(b+\sqrt{b^2+c^2}\Big)\,\text{Tan}\Big[\frac{1}{2}\,(d+e\,x)\Big]^2\Big)\Big)}\;+\;\Bigg(8\,b^3\,\Bigg(\Big(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\Big)$$

$$\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\Big],\,1\Big]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\Big[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},$$

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

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

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

$$\left(\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i\, b+c-i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(i\, b+c+i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$i\, c\,\text{EllipticPi}\left[\frac{\left(b+i\, c-\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i\, c-\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\left(4\,b\left(b^2+c^2\right)\left(\left(-b+i\, c+\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$i\, c\,\text{EllipticPi}\left[\frac{\left(b+i\, c-\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i\, c-\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\left(4\,b^3\left(b^2+c^2\right)\left(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

$$\left(b+\sqrt{b^2+c^2}\right)\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\Big)\Big)\Big)+\Bigg(8\,b^3\,\Bigg(\left(-b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

$$\left(\left(-b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

$$\left(b+\sqrt{b^2+c^2}\right)\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\Big)\Big)\Big)+\Bigg(4\,b^5\,\Bigg(\left(-b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\Bigg(c^2\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\Bigg)\Bigg)\Bigg)+\Bigg(4\,b\,c^2\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

$$\Bigg(8\,b^2\sqrt{b^2+c^2}\,\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[$$
$$\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\Big],1\Big]-2$$
$$\mathrm{i}\,c\,\mathrm{EllipticPi}\Big[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},$$
$$\mathrm{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\Big],1\Big]\Bigg)$$
$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$
$$\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\Bigg)\Bigg/\left(\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.$$
$$\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}$$
$$\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\Bigg)+$$

$$\Bigg(8\,b^4\sqrt{b^2+c^2}\,\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[$$
$$\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\Big],1\Big]-2$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

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

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

$$\Bigg(4\, b\left(b^2+c^2\right)\Bigg(\left(-b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\text{EllipticF}\Bigg[\text{ArcSin}\Bigg[$$

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

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\Bigg)$$

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

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

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

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

$$\left(4\,b^3\,\left(b^2+c^2\right)\,\left(\left(-b+\text{i}\,c-\sqrt{b^2+c^2}\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\text{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\text{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\text{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\text{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\text{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\,\left(-b-\text{i}\,c-\sqrt{b^2+c^2}\right)\,\left(b-\text{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)$$

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

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

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

$$\Bigg(2\,b\,c\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticF}\Big[\text{ArcSin}\Big[$$

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

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

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

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

$$\left(2\,b^2\sqrt{b^2+c^2}\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.$$

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

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

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

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

$$\left(b\,c\left(2\,i\left(-\frac{1}{2}\,i\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticE}\left[\text{ArcSin}\left[\right.\right.\right.\right.\right.$$

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

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

$$\left(i\left(i\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)+i\left(i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\left[\right.\right.$$

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

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

$$\left(2\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\text{EllipticPi}\left[\frac{i+\frac{c}{b+\sqrt{b^2+c^2}}}{-i+\frac{c}{b+\sqrt{b^2+c^2}}},\right.\right.$$

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

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

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

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

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

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

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

$$\left(c\sqrt{b^2+c^2}\left(2\,\mathrm{i}\left(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\right.\right.\right.$$

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

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

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\mathrm{EllipticF}\Big[\right.$$

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

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

$$\left(2\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\mathrm{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}},\right.$$

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

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

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

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

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

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

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

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

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

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

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

Problem 438: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}dx$$

Optimal (type 3, 130 leaves, 2 steps):

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

$$2\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}$$

Result (type 4, 11 512 leaves) :

$$-\frac{2 b \sqrt{b^2+c^2} \sqrt{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]}}{c e}+\frac{1}{e}$$

$$\left(-\frac{2 b \sqrt{b^2+c^2}}{3 c}-\frac{2}{3} c \operatorname{Cos}[d+e x]+\frac{2}{3} b \operatorname{Sin}[d+e x]\right) \sqrt{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]}+$$

$$\left(32 b c \left(b^2+c^2\right)^2 \left(\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\sqrt{-\frac{\left(b+i c+\sqrt{b^2+c^2}\right) \left(i+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(b-i c+\sqrt{b^2+c^2}\right) \left(-i+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right]-\right.\right.$$

$$\left.2 \operatorname{EllipticPi}\left[-1, \operatorname{ArcSin}\left[\sqrt{-\frac{\left(b+i c+\sqrt{b^2+c^2}\right) \left(i+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(b-i c+\sqrt{b^2+c^2}\right) \left(-i+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right]\right)$$

$$\sqrt{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]} \left(-i+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right)$$

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

$$\left.\left(-c+\left(b+\sqrt{b^2+c^2}\right) \operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]\right) \left(1+\operatorname{Tan}\left[\frac{1}{2} (d+e x)\right]^2\right)\right) \Big/$$

$$\left(3 \left(b+i c+\sqrt{b^2+c^2}\right)^3 \left(b^2+c^2-b \sqrt{b^2+c^2}\right) e \left(1+\operatorname{Cos}[d+e x]\right)\right.$$

$$\sqrt{\frac{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]}{(1+\operatorname{Cos}[d+e x])^2}}$$

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

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

$$\frac{1}{3 c e \left(1+\operatorname{Cos}[d+e x]\right) \sqrt{\frac{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]}{(1+\operatorname{Cos}[d+e x])^2}}}$$

$$8 \left(b^2+c^2\right)^{3/2} \sqrt{-\sqrt{b^2+c^2}+b \operatorname{Cos}[d+e x]+c \operatorname{Sin}[d+e x]}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(b+\sqrt{b^2+c^2}\right) \text{Tan}\left[\frac{1}{2} (d+e x)\right]^2\Big)\Big)\Big) + \Bigg(8 b^3 \Bigg(\left(-b+i c+\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i b+c-i \sqrt{b^2+c^2}\right) \left(i+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(i b+c+i \sqrt{b^2+c^2}\right) \left(-i+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right] - 2$$

$$i c\, \text{EllipticPi}\left[\frac{\left(b+i c-\sqrt{b^2+c^2}\right) \left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i c-\sqrt{b^2+c^2}\right) \left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\Bigg(\left(b-i c-\sqrt{b^2+c^2}\right) \left(-b-i c+\sqrt{b^2+c^2}\right) \left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)$$

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

$$\left(b+\sqrt{b^2+c^2}\right) \text{Tan}\left[\frac{1}{2} (d+e x)\right]^2\Bigg)\Bigg)\Bigg) + \Bigg(4 b^5 \Bigg(\left(-b+i c+\sqrt{b^2+c^2}\right)$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i b+c-i \sqrt{b^2+c^2}\right) \left(i+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}{\left(i b+c+i \sqrt{b^2+c^2}\right) \left(-i+\text{Tan}\left[\frac{1}{2} (d+e x)\right]\right)}}\right], 1\right] - 2$$

$$i c\, \text{EllipticPi}\left[\frac{\left(b+i c-\sqrt{b^2+c^2}\right) \left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i c-\sqrt{b^2+c^2}\right) \left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\,\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\,\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

$$\left(4\,b\,(b^2+c^2)\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$
$$\left.\left.\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$
$$\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$
$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$
$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$
$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\left(\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.$$
$$\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}$$
$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)-$$

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

$$i\, c\, \text{EllipticPi}\left[\frac{\left(b+i\, c-\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i\, c-\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\left(b-i\, c-\sqrt{b^2+c^2}\right)\left(-b-i\, c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i\, b+c-i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(i\, b+c+i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]-2$$

$$i\, c\, \text{EllipticPi}\left[\frac{\left(b+i\, c+\sqrt{b^2+c^2}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-i\, c+\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

$$\left(c^2\,\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]\Bigg)$$

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

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

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

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

$$\left(8\,b^2\,\sqrt{b^2+c^2}\,\left(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]\Bigg)$$

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

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

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

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

$$\left(8\,b^4\,\sqrt{b^2+c^2}\,\left(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

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

$$\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

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

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

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

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

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

$$\Bigg(4\,b\,\left(b^2+c^2\right)\,\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]-2\,\mathrm{i}\,c\,\text{EllipticPi}\Big[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]\Bigg)$$

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

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

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

$$\Bigg(4\,b^3\,\left(b^2+c^2\right)\,\Bigg(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\,\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\,\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\Big],1\Big]-2\,\mathrm{i}\,c\,\text{EllipticPi}\Big[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\,\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},$$

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

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

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

$$\left(c^2\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

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

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

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\,\right],\,1\right]\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

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

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

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

$$\left(2\,b\,c\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.$$

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

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

$$\left(\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

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

$$\left(2\,b^2\sqrt{b^2+c^2}\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\mathrm{EllipticF}\Big[\mathrm{ArcSin}\Big[\right.$$

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

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

$$\left(c\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

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

$$\left(b\,c\left(2\,\mathrm{i}\left(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\mathrm{EllipticE}\Big[\mathrm{ArcSin}\Big[\right.\right.\right.$$

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

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

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)\Big],1\Big]\right)\Big/$$

$$\left(2\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\text{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}},\right.$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)\Big],1\Big]\right)\Big/$$

$$\left.\left(\left(b+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

$$\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\Big[\frac{1}{2}(d+\right.$$

$$\left.\left.\left.e\,x)\Big]\right)+\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.\right.}\right.$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)-$$

$$\left(c\sqrt{b^2+c^2}\left(2\,\mathrm{i}\left(-\frac{1}{2}\mathrm{i}\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticE}\Big[\text{ArcSin}\Big[\right.\right.\right.$$

$$\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right)\Big],1\Big]-$$

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left(\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right],1\right]\Big/$$

$$\left(2\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\left(2\,c\,\mathrm{EllipticPi}\left[\frac{\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}},\right.\right.$$

$$\mathrm{ArcSin}\left[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right/}\right.$$

$$\left.\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right],1\right]\Big/$$

$$\left(\left(b+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

$$\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+\right.\right.$$

$$\left.\left.\left.e\,x)\right]\right)+\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)^2\right)\right)\Big/$$

$$\left(\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.\right.}\right.$$

$$\left.\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)\right)\Big/$$

$$\left(\left(b^2+c^2\right)\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\sqrt{\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.}\right.$$

$$\left.b\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2+\sqrt{b^2+c^2}\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)$$

$$\sqrt{\left(-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\left(-1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)+\right.}$$

$$\left.\left.\left.\sqrt{b^2+c^2}\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)\right)$$

Problem 439: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\,\,dx$$

Optimal (type 3, 57 leaves, 1 step):

$$-\frac{2\,(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x])}{e\,\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}}$$

Result (type 4, 11 415 leaves):

$$\frac{2\,b\,\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}}{c\,e}-$$

$$\left(8\,b\,c\,(b^2+c^2)^{3/2}\left(\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-\right.\right.$$

$$\left.2\,\text{EllipticPi}\left[-1,\text{ArcSin}\left[\sqrt{-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$

$$\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\,\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)$$

$$\left(-\frac{\left(b+i\,c+\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(b-i\,c+\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}\right)^{3/2}$$

$$\left.\left(-c+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\Big/$$

$$\left(\left(b+i\,c+\sqrt{b^2+c^2}\right)^3\left(b^2+c^2-b\,\sqrt{b^2+c^2}\right)e\,(1+\text{Cos}[d+e\,x])\right.$$

$$\sqrt{\frac{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}$$

$$\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)^2\Big/\sqrt{\left(-\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}$$

$$\left.\left.\left(-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\left(-1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)+\sqrt{b^2+c^2}\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)\right)+$$

$$\frac{1}{c\,e\,\left(1+\text{Cos}[d+e\,x]\right)\sqrt{\frac{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{(1+\text{Cos}[d+e\,x])^2}}}$$

$$2\left(b^2+c^2\right)\sqrt{-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}$$

$$\left(\left(\left(-b+c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2+\right.}\right.\right.$$

$$\left.\sqrt{b^2+c^2}\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\sqrt{\left(-\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.\right.}$$

$$\left.\left.\left.\left.b\left(-1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)+\sqrt{b^2+c^2}\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)\right)\right)\Big/$$

$$\left(\left(b^2+c^2\right)\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\sqrt{\left(-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\left(-1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)+\right.}\right.$$

$$\left.\left.\sqrt{b^2+c^2}\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)+\left(\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-\right.\right.}\right.$$

$$\left.\left.2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2+\sqrt{b^2+c^2}\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)$$

$$\sqrt{\left(-\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\left(-1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)+\right.\right.}$$

$$\left.\left.\sqrt{b^2+c^2}\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)\left(\left(2\,c^2\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-i\,\text{EllipticF}\left[\right.\right.\right.\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-i\,b+c-i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(i\,b+c+i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]+2\,i\,\text{EllipticPi}\left[\right.$$

$$\left.\left.\frac{i+\frac{c}{b+\sqrt{b^2+c^2}}}{-i+\frac{c}{b+\sqrt{b^2+c^2}}},\text{ArcSin}\left[\sqrt{\frac{\left(-i\,b+c-i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(i\,b+c+i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$

$$\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-i\,b+c-i\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(i\,b+c+i\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\right)\Big/\left(\left(\mathbb{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right.$$

$$\left.\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)}\right)+\left(8\,b^3\left(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\right)\Big/$$

$$\left(\left(b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

$$\left.\left(\mathbb{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)}\right)+\left(4\,b^5\left(\left(-b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

$$\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Bigg/$$

$$\left(c^2\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

$$\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.\right.}$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)+\left(4\,b\,c^2\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\Bigg)$$

$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\right)\Bigg/\left(\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.$$

$$\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right.}$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]+\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)\right)-$$

$$\left(4\,b\left(b^2+c^2\right)\left(\left(-b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]\right)\right)\Bigg/\left(\left(b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.$$

$$\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right.}$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]+\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}\left(d+e\,x\right)\right]^2\right)\right)\right)-$$

$$\left(4 b^3 \left(b^2+c^2\right) \left(\left(-b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2\right.\right.$$

$$\mathrm{i}\, c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}$$

$$\left.\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right/$$

$$\left(c^2\left(b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(-b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\frac{-b-\sqrt{b^2+c^2}}{c}+\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

$$\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2 c\,\text{Tan}\left[\frac{1}{2}(d+e x)\right]+\right.\right.}$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)+\left(8 b^3\left(\left(-b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\Bigg]\Bigg)$$

$$\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Bigg/$$

$$\left(\left(-b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

$$\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\right.\right.}$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)+\left(4\,b^5\left(\left(-b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\mathrm{i}\, c\,\text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\Bigg]\Bigg)$$

$$\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\Bigg/$$

$$\left(c^2 \left(-b - i\, c - \sqrt{b^2 + c^2}\right) \left(b - i\, c + \sqrt{b^2 + c^2}\right) \left(\frac{-b - \sqrt{b^2 + c^2}}{c} - \frac{-b + \sqrt{b^2 + c^2}}{c}\right)\right.$$

$$\left(i - \frac{c}{b + \sqrt{b^2 + c^2}}\right) \sqrt{\left(\left(1 + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]^2\right) \left(-b + \sqrt{b^2 + c^2} - 2\,c\,\text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right] + \right.\right.}$$

$$\left.\left.\left.\left(b + \sqrt{b^2 + c^2}\right) \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]^2\right)\right)\right) + \left(4\,b\,c^2 \left(\left(-b + i\,c - \sqrt{b^2 + c^2}\right)\right.\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-i\,b + c - i\,\sqrt{b^2 + c^2}\right)\left(i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}{\left(i\,b + c + i\,\sqrt{b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}}\right], 1\right] - 2$$

$$i\,c\,\text{EllipticPi}\left[\frac{\left(b + i\,c + \sqrt{b^2 + c^2}\right)\left(i + \frac{c}{b + \sqrt{b^2 + c^2}}\right)}{\left(b - i\,c + \sqrt{b^2 + c^2}\right)\left(-i + \frac{c}{b + \sqrt{b^2 + c^2}}\right)},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-i\,b + c - i\,\sqrt{b^2 + c^2}\right)\left(i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}{\left(i\,b + c + i\,\sqrt{b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}}\right], 1\right]\right)$$

$$\left(-i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right) \sqrt{\frac{\left(-i\,b + c - i\,\sqrt{b^2 + c^2}\right)\left(i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}{\left(i\,b + c + i\,\sqrt{b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b + \sqrt{b^2 + c^2}} + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)\right) \Big/ \left(\left(-b - i\,c - \sqrt{b^2 + c^2}\right) \left(b - i\,c + \sqrt{b^2 + c^2}\right)\right.$$

$$\left(\frac{-b - \sqrt{b^2 + c^2}}{c} - \frac{-b + \sqrt{b^2 + c^2}}{c}\right) \left(i - \frac{c}{b + \sqrt{b^2 + c^2}}\right) \sqrt{\left(\left(1 + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]^2\right)\right.}$$

$$\left.\left.\left(-b + \sqrt{b^2 + c^2} - 2\,c\,\text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right] + \left(b + \sqrt{b^2 + c^2}\right) \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]^2\right)\right)\right) +$$

$$\left(8\,b^2 \sqrt{b^2 + c^2} \left(\left(-b + i\,c - \sqrt{b^2 + c^2}\right) \text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

$$\left.\sqrt{\frac{\left(-i\,b + c - i\,\sqrt{b^2 + c^2}\right)\left(i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}{\left(i\,b + c + i\,\sqrt{b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}\,(d + e\,x)\right]\right)}}\right], 1\right] - 2$$

$$\left.\left.\left.\left.\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)\right.\right.\right.$$

$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\right)\right/\left(\left(-b-\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\right.$$

$$\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]+\left(b+\sqrt{b^2+c^2}\right)\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)+$$

$$\left(8\,b^4\sqrt{b^2+c^2}\left(\left(-b+\mathrm{i}\,c-\sqrt{b^2+c^2}\right)\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\right.\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]-2$$

$$\left.\mathrm{i}\,c\,\mathrm{EllipticPi}\left[\frac{\left(b+\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\ \mathrm{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\mathrm{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\left(c^2\left(-b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\right.$$

$$\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathbb{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right.}$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right)\right)+$$

$$\left(4\,b\left(b^2+c^2\right)\left(\left(-b+\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]-2$$

$$\mathbb{i}\,c\,\text{EllipticPi}\left[\frac{\left(b+\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\,\right],1\right]\right)$$

$$\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\sqrt{\frac{\left(-\mathbb{i}\,b+c-\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(\mathbb{i}\,b+c+\mathbb{i}\,\sqrt{b^2+c^2}\right)\left(-\mathbb{i}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\left(\left(-b-\mathbb{i}\,c-\sqrt{b^2+c^2}\right)\left(b-\mathbb{i}\,c+\sqrt{b^2+c^2}\right)\right.$$

$$\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\left(\mathbb{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right.}$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right)\right)+$$

$$\left(4\, b^3 \left(b^2+c^2\right) \left(\left(-b+\mathrm{i}\, c-\sqrt{b^2+c^2}\right) \text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]-2\right.\right.$$

$$\mathrm{i}\, c\, \text{EllipticPi}\left[\frac{\left(b+\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)}{\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\right)$$

$$\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)\sqrt{\frac{\left(-\mathrm{i}\, b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}\, b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}$$

$$\left.\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)\right)\Big/$$

$$\left(c^2\left(-b-\mathrm{i}\, c-\sqrt{b^2+c^2}\right)\left(b-\mathrm{i}\, c+\sqrt{b^2+c^2}\right)\left(\frac{-b-\sqrt{b^2+c^2}}{c}-\frac{-b+\sqrt{b^2+c^2}}{c}\right)\right.$$

$$\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\, c\, \text{Tan}\left[\frac{1}{2}(d+e\, x)\right]+\right.\right.}$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]^2\right)\right)\right)+\left(2\, b^3\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticF}\left[\right.\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)}}\right],1\right]\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e\, x)\right]\right)$$

$$\sqrt{\frac{\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\Bigg/$$

$$\left(c\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]+\left(b+\sqrt{b^2+c^2}\right)\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)+$$

$$\left(2\,b\,c\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)$$

$$\left.\sqrt{\frac{\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\Bigg/$$

$$\left(\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]+\left(b+\sqrt{b^2+c^2}\right)\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)+$$

$$\left(2\,b^2\sqrt{b^2+c^2}\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\operatorname{EllipticF}\left[\operatorname{ArcSin}\left[\right.\right.\right.$$

$$\left.\left.\sqrt{\frac{\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\right],1\right]\left(-i+\operatorname{Tan}\left[\frac{1}{2}(d+e x)\right]\right)$$

$$\sqrt{\frac{\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\Bigg)\Bigg/$$

$$\left(c\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right.}\right.$$

$$\left.\left.\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}(d+e x)\right]+\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)\right)-$$

$$\Bigg(b\,c\,\Bigg(2\,\mathrm{i}\,\Bigg(-\frac{1}{2}\,\mathrm{i}\left(\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticE}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right/}$$

$$\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right)\Big],1\Big]-$$

$$\left(\mathrm{i}\left(\mathrm{i}\left(-\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)+\mathrm{i}\left(\mathrm{i}-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\text{EllipticF}\Big[\right.$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right/}$$

$$\left.\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right)\Big],1\Big]\right)\Bigg/$$

$$\left(2\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\Bigg(2\,c\,\text{EllipticPi}\Big[\frac{\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}}{-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}},$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right/}$$

$$\left.\left(\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)\right)\right)\Big],1\Big]\Bigg)\Bigg/$$

$$\left(\left(b+\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\Bigg)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)$$

$$\sqrt{\frac{\left(-\mathrm{i}\,b+c-\mathrm{i}\sqrt{b^2+c^2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}{\left(\mathrm{i}\,b+c+\mathrm{i}\sqrt{b^2+c^2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(d+e x)\right]\right)}}\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\right.\right.(d+$$

$$e\,x)\Big]\Big)+\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^2\Bigg)\Bigg)\Bigg/$$

$$\left(\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2\,c\,\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]+\right.\right.}\right.$$

$$\left.\left.\left.\left(b+\sqrt{b^2+c^2}\right)\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]^2\right)\right)\right)-$$

$$\Bigg(c\,\sqrt{b^2+c^2}\,\Bigg(2\,i\,\Bigg(-\frac{1}{2}\,i\left(i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\text{EllipticE}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\left(\left(\left(-i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\right)\Big],1\Big]-$$

$$\left(i\left(i\left(-i-\frac{c}{b+\sqrt{b^2+c^2}}\right)+i\left(i-\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\right)\text{EllipticF}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\right)\Big],1\Big]\Bigg)\Bigg/$$

$$\left(2\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)+\Bigg(2\,c\,\text{EllipticPi}\Big[\frac{i+\frac{c}{b+\sqrt{b^2+c^2}}}{-i+\frac{c}{b+\sqrt{b^2+c^2}}},$$

$$\text{ArcSin}\Big[\sqrt{\left(\left(\left(-i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/\right.}$$

$$\left.\left(\left(i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\right)\Big],1\Big]\Bigg)\Bigg/$$

$$\left(\left(b+\sqrt{b^2+c^2}\right)\left(-i+\frac{c}{b+\sqrt{b^2+c^2}}\right)\right)\Bigg)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)$$

$$\sqrt{\frac{\left(-i\,b+c-i\,\sqrt{b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}{\left(i\,b+c+i\,\sqrt{b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)}}\;\Bigg(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\Big[\frac{1}{2}\,(d+$$

$$e\,x)\Big]\Big)+\left(i+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\left(-\frac{c}{b+\sqrt{b^2+c^2}}+\text{Tan}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^2\Bigg)\Bigg)\Bigg/$$

$$\left(\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\left(-b+\sqrt{b^2+c^2}-2 c\, \text{Tan}\left[\frac{1}{2}(d+e x)\right]+\left(b+\sqrt{b^2+c^2}\right) \text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)}\right)\Bigg/$$

$$\left(\left(b^2+c^2\right)\left(1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\sqrt{\left(-b+\sqrt{b^2+c^2}-2 c\, \text{Tan}\left[\frac{1}{2}(d+e x)\right]+b\, \text{Tan}\left[\frac{1}{2}(d+e x)\right]^2+\sqrt{b^2+c^2}\, \text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)}\sqrt{\left(-2 c\, \text{Tan}\left[\frac{1}{2}(d+e x)\right]+b\left(-1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)+\sqrt{b^2+c^2}\left(1+\text{Tan}\left[\frac{1}{2}(d+e x)\right]^2\right)\right)}\right)$$

Problem 440: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{-\sqrt{b^2+c^2}+b\, \text{Cos}[d+e x]+c\, \text{Sin}[d+e x]}}\, dx$$

Optimal (type 3, 91 leaves, 3 steps):

$$-\frac{\sqrt{2}\, \text{ArcTan}\left[\frac{\left(b^2+c^2\right)^{1/4} \text{Sin}[d+e x-\text{ArcTan}[b,c]]}{\sqrt{2} \sqrt{-\sqrt{b^2+c^2}+\sqrt{b^2+c^2}\, \text{Cos}[d+e x-\text{ArcTan}[b,c]]}}\right]}{\left(b^2+c^2\right)^{1/4} e}$$

Result (type 4, 61 904 leaves): Display of huge result suppressed!

Problem 441: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\left(-\sqrt{b^2+c^2}+b\, \text{Cos}[d+e x]+c\, \text{Sin}[d+e x]\right)^{3/2}}\, dx$$

Optimal (type 3, 164 leaves, 4 steps):

$$\frac{\text{ArcTan}\left[\frac{\left(b^2+c^2\right)^{1/4}\,\text{Sin}[d+e\,x-\text{ArcTan}[b,c]]}{\sqrt{2}\,\sqrt{-\sqrt{b^2+c^2}+\sqrt{b^2+c^2}\,\text{Cos}[d+e\,x-\text{ArcTan}[b,c]]}}\right]}{2\,\sqrt{2}\,\left(b^2+c^2\right)^{3/4}\,e}+\frac{c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]}{2\,\sqrt{b^2+c^2}\,e\,\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}}$$

Result (type 1, 1 leaves):

???

Problem 442: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}}\,dx$$

Optimal (type 3, 232 leaves, 5 steps):

$$-\frac{3\,\text{ArcTan}\left[\frac{\left(b^2+c^2\right)^{1/4}\,\text{Sin}[d+e\,x-\text{ArcTan}[b,c]]}{\sqrt{2}\,\sqrt{-\sqrt{b^2+c^2}+\sqrt{b^2+c^2}\,\text{Cos}[d+e\,x-\text{ArcTan}[b,c]]}}\right]}{16\,\sqrt{2}\,\left(b^2+c^2\right)^{5/4}\,e}+\frac{c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]}{4\,\sqrt{b^2+c^2}\,e\,\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}}-\frac{3\,\left(c\,\text{Cos}[d+e\,x]-b\,\text{Sin}[d+e\,x]\right)}{16\,\left(b^2+c^2\right)\,e\,\left(-\sqrt{b^2+c^2}+b\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}}$$

Result (type 1, 1 leaves):

???

Problem 448: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}}{\text{Sec}[d+e\,x]^{3/2}}\,dx$$

Optimal (type 4, 371 leaves, 7 steps):

$$-\left(\left(2\left(c\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x]\right)\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/\left(3\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\right)\right)+$$

$$\left(8\,b\,\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)+$$

$$\left(2\left(a^2-b^2+c^2\right)\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\right.$$

$$\left.\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^2\right)$$

Result (type 6, 2490 leaves):

$$\left(\left(\frac{8\,a\,b}{3\,c}-\frac{2}{3}\,c\,\text{Cos}[d+e\,x]+\frac{2}{3}\,a\,\text{Sin}[d+e\,x]\right)\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\right)+$$

$$\left(2\,a^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\;\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\sqrt{1+\frac{a^2}{c^2}}\,c\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\left(2\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\left(2\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\sqrt{1+\frac{a^2}{c^2}}\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\left(4\,a^2\,b\left(-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.\right.\right.\right.\right.$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Big]\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\Bigg)\Bigg/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Bigg)-$$

$$\left(\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\left(a+b\,\mathrm{Sec}[d+e\,x]+c\,\mathrm{Tan}[d+e\,x]\right)^{3/2}\Bigg)\Bigg/$$

$$\left(3\,c\,e\,\mathrm{Sec}[d+e\,x]^{3/2}\left(b+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\Bigg(4\,b\,c\,\Bigg(-\Bigg(\Bigg(\Bigg(c\,\mathrm{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Bigg]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\Bigg)\Bigg/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\right)-$$

$$\left(\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\Bigg)\Bigg/$$

$$\left(3\,e\,\text{Sec}[d+e\,x]^{3/2}\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{3/2}\right)$$

Problem 449: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}}{\sqrt{\text{Sec}[d+e\,x]}}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\,\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\right)\bigg/\left(e\sqrt{\text{Sec}[d+e\,x]}\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)$$

Result (type 6, 1580 leaves):

$$\frac{2\,a\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}}{c\,e\sqrt{\text{Sec}[d+e\,x]}}+$$

$$\left(2\,b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\right)\bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,e\sqrt{\text{Sec}[d+e\,x]}\sqrt{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\right)+$$

$$\Bigg(a^2\Bigg(-\Bigg(\Bigg(c\,\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Big]\,\text{Sin}\Big[d+e\,x-\text{ArcTan}\Big[\frac{c}{a}\Big]\Big]\Bigg)\Bigg/$$

$$\Bigg(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\Big[d+e\,x-\text{ArcTan}\Big[\frac{c}{a}\Big]\Big]}$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\Bigg)\Bigg)-$$

$$\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}}\Bigg)\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\Bigg/$$

$$\left(c\,e\sqrt{\text{Sec}[d+e\,x]}\,\sqrt{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\right)+$$

$$\Bigg(c\,\Bigg(-\Bigg(\Bigg(c\,\text{AppellF1}\Big[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Big]\,\text{Sin}\Big[d+e\,x-\text{ArcTan}\Big[\frac{c}{a}\Big]\Big]\Bigg)\Bigg/$$

$$\Bigg(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\Big[d+e\,x-\text{ArcTan}\Big[\frac{c}{a}\Big]\Big]}$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\Bigg)\Bigg)-$$

$$\frac{\frac{2a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\big[d+e\,x-\text{ArcTan}\big[\frac{c}{a}\big]\big]}}\Bigg)\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\Bigg/$$

$$\left(e\sqrt{\text{Sec}[d+e\,x]}\,\sqrt{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\right)$$

Problem 450: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{\sqrt{\text{Sec}[d+e\,x]}}{\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{\text{Sec}[d+e\,x]}\right.$$
$$\left.\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(e\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\right)$$

Result (type 6, 339 leaves):

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b-\sqrt{1+\frac{a^2}{c^2}}\,c},\right.\right.$$
$$\left.\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+\sqrt{1+\frac{a^2}{c^2}}\,c}\right]\sqrt{\text{Sec}[d+e\,x]}\;\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]$$
$$\sqrt{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}\,\sqrt{-\frac{\sqrt{1+\frac{a^2}{c^2}}\,c\left(-1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{b+\sqrt{1+\frac{a^2}{c^2}}\,c}}$$
$$\left.\sqrt{\frac{\sqrt{1+\frac{a^2}{c^2}}\,c\left(1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{-b+\sqrt{1+\frac{a^2}{c^2}}\,c}}\,\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}\right)\Big/$$
$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,e\,\sqrt{a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]}\right)$$

Problem 451: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[d+e x]^{3/2}}{(a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x])^{3/2}}\,dx$$

Optimal (type 4, 240 leaves, 4 steps):

$$-\left(\left(2\,\text{Sec}[d+e x]^{3/2}\,(c\,\text{Cos}[d+e x]-a\,\text{Sin}[d+e x])\,(b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x])\right)\Big/\left(\left(a^2-b^2+c^2\right)e\,(a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x])^{3/2}\right)\right)-\left(2\,\text{EllipticE}\left[\frac{1}{2}\,(d+e x-\text{ArcTan}[a,c]),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\text{Sec}[d+e x]^{3/2}\,(b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x])^2\right)\Big/\left(\left(a^2-b^2+c^2\right)e\sqrt{\frac{b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}{b+\sqrt{a^2+c^2}}}\,(a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x])^{3/2}\right)$$

Result (type 6, 1732 leaves):

$$\left(\text{Sec}[d+e x]^{3/2}\,(b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x])^2\left(-\frac{2\left(a^2+c^2\right)}{a c\left(a^2-b^2+c^2\right)}+\frac{2\left(b c+a^2\,\text{Sin}[d+e x]+c^2\,\text{Sin}[d+e x]\right)}{a\left(a^2-b^2+c^2\right)(b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x])}\right)\right)\Big/\left(e\,(a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x])^{3/2}\right)-$$

$$\left(2\,b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sec}[d+e x]^{3/2}\right.$$

$$\text{Sec}\left[d+e x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\,(b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x])^{3/2}$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\;\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\;c\left(a^2-b^2+c^2\right)\,e\left(a+b\,\mathrm{Sec}[d+e\,x]+c\,\mathrm{Tan}[d+e\,x]\right)^{3/2}\right)-$$

$$\left(a^2\,\mathrm{Sec}[d+e\,x]^{3/2}\left(b+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{3/2}\right.$$

$$\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\right)\Bigg/$$

$$\left(a \sqrt{1+\frac{c^2}{a^2}} \sqrt{\frac{a \sqrt{\frac{a^2+c^2}{a^2}} - a \sqrt{\frac{a^2+c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a \sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a \sqrt{\frac{a^2+c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\left.\sqrt{\frac{a \sqrt{\frac{a^2+c^2}{a^2}} + a \sqrt{\frac{a^2+c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a \sqrt{\frac{a^2+c^2}{a^2}}}}\right)\right) -$$

$$\left.\left.\frac{\frac{2 a \left(b+a \sqrt{1+\frac{c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2} - \frac{c \operatorname{Sin}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}{a \sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a \sqrt{1+\frac{c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\right) \Big/$$

$$\left(c \left(a^2-b^2+c^2\right) e \left(a+b \operatorname{Sec}[d+e\,x]+c \operatorname{Tan}[d+e\,x]\right)^{3/2}\right) -$$

$$\left(c \operatorname{Sec}[d+e\,x]^{3/2} \left(b+a \operatorname{Cos}[d+e\,x]+c \operatorname{Sin}[d+e\,x]\right)^{3/2}\right.$$

$$\left(-\left(\left(c \operatorname{AppellF1}\left[-\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}, -\frac{b+a \sqrt{1+\frac{c^2}{a^2}} \operatorname{Cos}\left[d+e\,x-\operatorname{ArcTan}\left[\frac{c}{a}\right]\right]}{a \sqrt{1+\frac{c^2}{a^2}} \left(1-\frac{b}{a \sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\Bigg)\Big/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Bigg)-$$

$$\left(\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\Bigg)\Big/$$

$$\left(\left(a^2-b^2+c^2\right)\,e\,\left(a+b\,\mathrm{Sec}[d+e\,x]+c\,\mathrm{Tan}[d+e\,x]\right)^{3/2}\right)$$

Problem 452: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Sec}[d+e\,x]^{5/2}}{\left(a+b\,\mathrm{Sec}[d+e\,x]+c\,\mathrm{Tan}[d+e\,x]\right)^{5/2}}\,dx$$

Optimal (type 4, 492 leaves, 8 steps):

$$-\left(\left(2\,\text{Sec}[d+e\,x]^{5/2}\,(c\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x])\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])\right)\Big/\left(3\,(a^2-b^2+c^2)\,e\,(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x])^{5/2}\right)\right)+$$

$$\left(8\,\text{Sec}[d+e\,x]^{5/2}\,(b\,c\,\text{Cos}[d+e\,x]-a\,b\,\text{Sin}[d+e\,x])\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])^2\right)\Big/\left(3\,(a^2-b^2+c^2)^2\,e\,(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x])^{5/2}\right)+$$

$$\left(8\,b\,\text{EllipticE}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[a,c]),\,\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,\text{Sec}[d+e\,x]^{5/2}\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])^3\right)\Big/$$

$$\left(3\,(a^2-b^2+c^2)^2\,e\,\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\,(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x])^{5/2}\right)+$$

$$\left(2\,\text{EllipticF}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[a,c]),\,\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,\text{Sec}[d+e\,x]^{5/2}\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])^2\,\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/$$

$$\left(3\,(a^2-b^2+c^2)\,e\,(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x])^{5/2}\right)$$

Result (type 6, 2708 leaves):

$$\left(\text{Sec}[d+e\,x]^{5/2}\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])^3\right.$$

$$\left.\left(\frac{8\,b\,(a^2+c^2)}{3\,a\,c\,(-a^2+b^2-c^2)^2}+\frac{2\,(b\,c+a^2\,\text{Sin}[d+e\,x]+c^2\,\text{Sin}[d+e\,x])}{3\,a\,(a^2-b^2+c^2)\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])^2}-\frac{2\,(a^2\,c+3\,b^2\,c+c^3+4\,a^2\,b\,\text{Sin}[d+e\,x]+4\,b\,c^2\,\text{Sin}[d+e\,x])}{3\,a\,(a^2-b^2+c^2)^2\,(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x])}\right)\right)\Big/$$

$$\left(e\,(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x])^{5/2}\right)+\left(2\,a^2\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2},\,\frac{1}{2},\,\frac{3}{2},\right.\right.$$

$$-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\,-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\Bigg]$$

$$\text{Sec}[d+e\,x]^{5/2}\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\,\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\Bigg/$$

$$\left(3\sqrt{1+\frac{a^2}{c^2}}\,c\,\left(a^2-b^2+c^2\right)^2\,e\,\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(2\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\,\text{Sec}[d+e\,x]^{5/2}$$

$$\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\,\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\,\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\Bigg)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\;c\left(a^2-b^2+c^2\right)^2 e\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(2\,c\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\;c}\right)c}\right]\text{Sec}[d+e\,x]^{5/2}$$

$$\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\;\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\;\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\Bigg/$$

$$\left(3\sqrt{1+\frac{a^2}{c^2}}\left(a^2-b^2+c^2\right)^2 e\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(4\, a^2\, b\, \text{Sec}[d+e\,x]^{5/2}\, \left(b+a\, \text{Cos}[d+e\,x]+c\, \text{Sin}[d+e\,x]\right)^{5/2}\right.$$

$$\left(-\left(\left(c\, \text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\, \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\, \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\, \text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)\Big/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\, \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\, \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\, \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\right)\Bigg/$$

$$\left(3\,c\,\left(a^2-b^2+c^2\right)^2 e\,\left(a+b\,\mathrm{Sec}[d+e\,x]+c\,\mathrm{Tan}[d+e\,x]\right)^{5/2}\right)+$$

$$\Bigg(4\,b\,c\,\mathrm{Sec}[d+e\,x]^{5/2}\,\left(b+a\,\mathrm{Cos}[d+e\,x]+c\,\mathrm{Sin}[d+e\,x]\right)^{5/2}$$

$$\Bigg(-\Bigg(\Bigg(c\,\mathrm{AppellF1}\Bigg[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\Bigg)\Bigg/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right.$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,a\left(b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{a^2+c^2}-\frac{c\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}}}{\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{c}{a}\right]\right]}}\right)\right)\Big/$$

$$\left(3\left(a^2-b^2+c^2\right)^2 e\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{5/2}\right)$$

Problem 453: Attempted integration timed out after 120 seconds.

$$\int \text{Cos}[d+e\,x]^{3/2}\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\,dx$$

Optimal (type 4, 371 leaves, 7 steps):

$$-\left(\left(2\,\text{Cos}[d+e\,x]^{3/2}\left(c\,\text{Cos}[d+e\,x]-a\,\text{Sin}[d+e\,x]\right)\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/\left(3\,e\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\right)\right)+$$

$$\left(8\,b\,\text{Cos}[d+e\,x]^{3/2}\,\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\,e\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)+$$

$$\left(2\left(a^2-b^2+c^2\right)\text{Cos}[d+e\,x]^{3/2}\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{\frac{b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\left(a+b\,\text{Sec}[d+e\,x]+c\,\text{Tan}[d+e\,x]\right)^{3/2}\right)\Big/$$

$$\left(3\,e\left(b+a\,\text{Cos}[d+e\,x]+c\,\text{Sin}[d+e\,x]\right)^2\right)$$

Result (type 1, 1 leaves):

???

Problem 454: Attempted integration timed out after 120 seconds.

$$\int \sqrt{\text{Cos}[d+e x]}\ \sqrt{a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x]}\ dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\sqrt{\text{Cos}[d+e x]}\ \text{EllipticE}\left[\frac{1}{2}\left(d+e x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x]}\right)\Big/\left(e\sqrt{\frac{b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}{b+\sqrt{a^2+c^2}}}\right)$$

Result (type 1, 1 leaves):

???

Problem 455: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{\sqrt{\text{Cos}[d+e x]}\ \sqrt{a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x]}}\ dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\,\text{EllipticF}\left[\frac{1}{2}\left(d+e x-\text{ArcTan}[a,c]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{\frac{b+a\,\text{Cos}[d+e x]+c\,\text{Sin}[d+e x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(e\sqrt{\text{Cos}[d+e x]}\ \sqrt{a+b\,\text{Sec}[d+e x]+c\,\text{Tan}[d+e x]}\right)$$

Result (type 4, 506 leaves):

$$\left(4\left(i a - i b + c + \sqrt{a^2 - b^2 + c^2}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\left(\left(\left(-i a + i b + c + \sqrt{a^2 - b^2 + c^2}\right)\left(-\text{Cos}[d + e x] + i\,\text{Sin}[d + e x]\right)\right)\Big/\left(i a - i b + c + \sqrt{a^2 - b^2 + c^2}\right)\right)}\right], \frac{b + i\sqrt{a^2 - b^2 + c^2}}{b - i\sqrt{a^2 - b^2 + c^2}}\right]$$

$$\sqrt{\frac{\left(-i a + i b + c + \sqrt{a^2 - b^2 + c^2}\right)\left(-\text{Cos}[d + e x] + i\,\text{Sin}[d + e x]\right)}{i a - i b + c + \sqrt{a^2 - b^2 + c^2}}}$$

$$\left(\text{Cos}[d + e x] + i\,\text{Sin}[d + e x]\right)\sqrt{-\frac{i\left(-c + \sqrt{a^2 - b^2 + c^2} + (a - b)\,\text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(-i a + i b - c + \sqrt{a^2 - b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}$$

$$\left.\sqrt{-\frac{i\left(c + \sqrt{a^2 - b^2 + c^2} + (-a + b)\,\text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}{\left(i a - i b + c + \sqrt{a^2 - b^2 + c^2}\right)\left(-i + \text{Tan}\left[\frac{1}{2}(d + e x)\right]\right)}}\right)\Bigg/$$

$$\left(\left(a + i\left(i b + c + \sqrt{a^2 - b^2 + c^2}\right)\right) e \sqrt{\text{Cos}[d + e x]}\,\sqrt{a + b\,\text{Sec}[d + e x] + c\,\text{Tan}[d + e x]}\right)$$

Problem 456: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Cos}[d + e x]^{3/2}\left(a + b\,\text{Sec}[d + e x] + c\,\text{Tan}[d + e x]\right)^{3/2}}\,dx$$

Optimal (type 4, 240 leaves, 4 steps):

$$-\left(\left(2\left(c\,\text{Cos}[d + e x] - a\,\text{Sin}[d + e x]\right)\left(b + a\,\text{Cos}[d + e x] + c\,\text{Sin}[d + e x]\right)\right)\Big/\left(\left(a^2 - b^2 + c^2\right) e\,\text{Cos}[d + e x]^{3/2}\left(a + b\,\text{Sec}[d + e x] + c\,\text{Tan}[d + e x]\right)^{3/2}\right)\right) -$$

$$\left(2\,\text{EllipticE}\left[\frac{1}{2}\left(d + e x - \text{ArcTan}[a, c]\right), \frac{2\sqrt{a^2 + c^2}}{b + \sqrt{a^2 + c^2}}\right]\left(b + a\,\text{Cos}[d + e x] + c\,\text{Sin}[d + e x]\right)^2\right)\Bigg/$$

$$\left(\left(a^2 - b^2 + c^2\right) e\,\text{Cos}[d + e x]^{3/2}\sqrt{\frac{b + a\,\text{Cos}[d + e x] + c\,\text{Sin}[d + e x]}{b + \sqrt{a^2 + c^2}}}\left(a + b\,\text{Sec}[d + e x] + c\,\text{Tan}[d + e x]\right)^{3/2}\right)$$

Result (type 1, 1 leaves):

???

Problem 457: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{\text{Cos}[d+e x]^{5/2} \left(a+b \,\text{Sec}[d+e x]+c \,\text{Tan}[d+e x]\right)^{5/2}} \, dx$$

Optimal (type 4, 492 leaves, 8 steps):

$$-\left(\left(2 \left(c \,\text{Cos}[d+e x]-a \,\text{Sin}[d+e x]\right) \left(b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]\right)\right) \Big/ \left(3 \left(a^2-b^2+c^2\right) e \,\text{Cos}[d+e x]^{5/2} \left(a+b \,\text{Sec}[d+e x]+c \,\text{Tan}[d+e x]\right)^{5/2}\right)\right)+$$
$$\left(8 \left(b c \,\text{Cos}[d+e x]-a b \,\text{Sin}[d+e x]\right) \left(b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]\right)^2\right) \Big/ \left(3 \left(a^2-b^2+c^2\right)^2 e \,\text{Cos}[d+e x]^{5/2} \left(a+b \,\text{Sec}[d+e x]+c \,\text{Tan}[d+e x]\right)^{5/2}\right)+$$
$$\left(8 b \,\text{EllipticE}\left[\frac{1}{2} \left(d+e x-\text{ArcTan}[a,c]\right), \frac{2 \sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right] \left(b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]\right)^3\right) \Big/ \left(3 \left(a^2-b^2+c^2\right)^2 e \,\text{Cos}[d+e x]^{5/2} \sqrt{\frac{b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]}{b+\sqrt{a^2+c^2}}} \left(a+b \,\text{Sec}[d+e x]+c \,\text{Tan}[d+e x]\right)^{5/2}\right)+$$
$$\left(2 \,\text{EllipticF}\left[\frac{1}{2} \left(d+e x-\text{ArcTan}[a,c]\right), \frac{2 \sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right] \left(b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]\right)^2 \sqrt{\frac{b+a \,\text{Cos}[d+e x]+c \,\text{Sin}[d+e x]}{b+\sqrt{a^2+c^2}}}\right) \Big/ \left(3 \left(a^2-b^2+c^2\right) e \,\text{Cos}[d+e x]^{5/2} \left(a+b \,\text{Sec}[d+e x]+c \,\text{Tan}[d+e x]\right)^{5/2}\right)$$

Result (type 1, 1 leaves):

???

Problem 461: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Csc}[x]}{2+2 \,\text{Cot}[x]+3 \,\text{Csc}[x]} \, dx$$

Optimal (type 3, 21 leaves, 4 steps):

$$x+2 \,\text{ArcTan}\left[\frac{\text{Cos}[x]-\text{Sin}[x]}{2+\text{Cos}[x]+\text{Sin}[x]}\right]$$

Result (type 3, 51 leaves):

$$-\text{ArcTan}\left[\frac{\text{Cos}\left[\frac{x}{2}\right]}{2 \,\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]}\right]+\text{ArcTan}\left[\text{Sec}\left[\frac{x}{2}\right] \left(2 \,\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)\right]$$

Problem 462: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}}{\text{Csc}[d + e\,x]^{3/2}}\,dx$$

Optimal (type 4, 371 leaves, 7 steps):

$$\left(8\,b\,(a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}\,\text{EllipticE}\left[\frac{1}{2}\,(d + e\,x - \text{ArcTan}[c, a]),\ \frac{2\sqrt{a^2 + c^2}}{b + \sqrt{a^2 + c^2}}\right]\right) \Big/ \left(3\,e\,\text{Csc}[d + e\,x]^{3/2}\,(b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x])\sqrt{\frac{b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x]}{b + \sqrt{a^2 + c^2}}}\right) +$$
$$\left(2\,(a^2 - b^2 + c^2)\,(a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}\,\text{EllipticF}\left[\frac{1}{2}\,(d + e\,x - \text{ArcTan}[c, a]),\ \frac{2\sqrt{a^2 + c^2}}{b + \sqrt{a^2 + c^2}}\right]\sqrt{\frac{b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x]}{b + \sqrt{a^2 + c^2}}}\right) \Big/ \left(3\,e\,\text{Csc}[d + e\,x]^{3/2}\,(b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x])^2\right) -$$
$$\left(2\,(a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}\,(a\,\text{Cos}[d + e\,x] - c\,\text{Sin}[d + e\,x])\right) \Big/ \left(3\,e\,\text{Csc}[d + e\,x]^{3/2}\,(b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x])\right)$$

Result (type 6, 2490 leaves):

$$\left((a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}\left(\frac{8\,b\,c}{3\,a} - \frac{2}{3}\,a\,\text{Cos}[d + e\,x] + \frac{2}{3}\,c\,\text{Sin}[d + e\,x]\right)\right) \Big/ \left(e\,\text{Csc}[d + e\,x]^{3/2}\,(b + c\,\text{Cos}[d + e\,x] + a\,\text{Sin}[d + e\,x])\right) +$$

$$\left(4\,a\,b\,(a + c\,\text{Cot}[d + e\,x] + b\,\text{Csc}[d + e\,x])^{3/2}\right.$$

$$\left(-\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}, -\frac{b + \sqrt{1 + \frac{a^2}{c^2}}\,c\,\text{Cos}\left[d + e\,x - \text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1 + \frac{a^2}{c^2}}\left(1 - \frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\;c}\right)c}\Bigg]\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\Bigg)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\;c\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\right)-$$

$$\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\;c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}}\Bigg)\Bigg)\Bigg/$$

$$\left(3\,e\,\mathrm{Csc}[d+e\,x]^{3/2}\left(b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\Bigg(4\,b\,c^2\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{3/2}$$

$$-\left(\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\Bigg)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,\sqrt{\frac{c\,\sqrt{\frac{a^2+c^2}{c^2}}-c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\,\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\,\sqrt{\frac{a^2+c^2}{c^2}}+c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\,\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\Bigg)-$$

$$\left.\left.\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\,c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Bigg/$$

$$\left(3\,a\,e\,\text{Csc}[d+e\,x]^{3/2}\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\left(2\,a\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]$$

$$(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Big/$$

$$\left(3\sqrt{1+\frac{c^2}{a^2}}\,e\,\text{Csc}[d+e\,x]^{3/2}\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^{3/2}\right)+$$

$$\left(2\,b^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\ \left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Bigg]$$

$$\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Bigg/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\ e\,\text{Csc}[d+e\,x]^{3/2}\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{3/2}\right)+$$

$$\Bigg(2\,c^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\ \left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\ \text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\ \left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\ \left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}$$

$$\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Bigg/$$

$$\left(3\,a\sqrt{1+\frac{c^2}{a^2}}\;e\,\text{Csc}[d+e\,x]^{3/2}\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{3/2}\right)$$

Problem 463: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}}{\sqrt{\text{Csc}[d+e\,x]}}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\;\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[c,a]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\right)\Bigg/$$

$$\left(e\sqrt{\text{Csc}[d+e\,x]}\;\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)$$

Result (type 6, 1580 leaves):

$$\frac{2\,c\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}}{a\,e\sqrt{\text{Csc}[d+e\,x]}}+\left(a\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\right.$$

$$
\left(-\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.
$$

$$
\left.\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)\Bigg/
$$

$$
\left(\sqrt{1+\frac{a^2}{c^2}}\;c\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.
$$

$$
\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}
$$

$$
\left.\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\right)-
$$

$$
\left.\left.\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\,c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Bigg/
$$

$$
\left(e\sqrt{\text{Csc}[d+e\,x]}\,\sqrt{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}\right)+
$$

$$\left(c^2\sqrt{a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]}\right.$$

$$\left(-\left(\left(a\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\Bigg)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\;c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\;c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Big/$$

$$\left(a\,e\,\sqrt{\text{Csc}[d+e\,x]}\;\sqrt{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}\right)+$$

$$\left(2\,b\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\right.\right.$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\;\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\;\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]$$

$$\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}$$

$$\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\;\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\;\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Big/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\;e\sqrt{\mathrm{Csc}[d+e\,x]}\;\sqrt{b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]}\right)$$

Problem 464: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{\mathrm{Csc}[d+e\,x]}}{\sqrt{a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]}}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\sqrt{\mathrm{Csc}[d+e\,x]}\;\mathrm{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\mathrm{ArcTan}[c,a]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\right.$$

$$\left.\sqrt{\frac{b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(e\sqrt{a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]}\right)$$

Result (type 6, 339 leaves):

$$\left(2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b-a\sqrt{1+\frac{c^2}{a^2}}},\right.\right.$$

$$\left.\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{1+\frac{c^2}{a^2}}}\right]\sqrt{\text{Csc}[d+e\,x]}\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\sqrt{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}\,\sqrt{-\frac{a\sqrt{1+\frac{c^2}{a^2}}\left(-1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{b+a\sqrt{1+\frac{c^2}{a^2}}}}$$

$$\left.\sqrt{\frac{a\sqrt{1+\frac{c^2}{a^2}}\left(1+\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]\right)}{-b+a\sqrt{1+\frac{c^2}{a^2}}}}\,\sqrt{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}\right)\Big/$$

$$\left(a\sqrt{1+\frac{c^2}{a^2}}\,e\,\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\right)$$

Problem 465: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Csc}[d+e\,x]^{3/2}}{\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}}\,dx$$

Optimal (type 4, 240 leaves, 4 steps):

$$-\left(\left(2\,\text{Csc}[d+e\,x]^{3/2}\,\text{EllipticE}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[c,a]),\,\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^2\right)\Big/\left((a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\right)-$$

$$\left(2\,\text{Csc}[d+e\,x]^{3/2}\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])\,(a\,\text{Cos}[d+e\,x]-c\,\text{Sin}[d+e\,x])\right)\Big/\left((a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\right)$$

Result (type 6, 1732 leaves) :

$$\left(\text{Csc}[d+e\,x]^{3/2}\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^2\left(-\frac{2\,(a^2+c^2)}{a\,c\,(a^2-b^2+c^2)}+\frac{2\,(a\,b+a^2\,\text{Sin}[d+e\,x]+c^2\,\text{Sin}[d+e\,x])}{c\,(a^2-b^2+c^2)\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])}\right)\right)\Big/\left(e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\right)-$$

$$\left(a\,\text{Csc}[d+e\,x]^{3/2}\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^{3/2}\right.$$

$$\left(-\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\Bigg)\Big/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\ c\ \sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\ \text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)-$$

$$\left.\left.\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\ c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\ c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\ c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Bigg/$$

$$\left(\left(a^2-b^2+c^2\right)\,e\,\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\right)-$$

$$\left(c^2\,\text{Csc}[d+e\,x]^{3/2}\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{3/2}\right.$$

$$\left(-\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\ c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\ c}\right)c},\right.\right.\right.\right.$$

$$-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\ c\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\ c}\right)c}\Bigg]\ \mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\Bigg)\Bigg/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\ c\ \sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\Bigg)-$$

$$\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\ c\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\ c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\ c\ \mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}}\Bigg)\Bigg)\Bigg/$$

$$\left(a\left(a^2-b^2+c^2\right)e\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{3/2}\right)-$$

$$\left(2\,b\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\ \mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\ \mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\Bigg]$$

$$\mathrm{Csc}[d+e\,x]^{3/2}\,\mathrm{Sec}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\left(b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]\right)^{3/2}$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\ \mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\ \mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\ \mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\ \right)\Bigg/$$

$$\left(a\left(a^2-b^2+c^2\right)\sqrt{1+\frac{c^2}{a^2}}\ e\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{3/2}\right)$$

Problem 466: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\mathrm{Csc}[d+e\,x]^{5/2}}{\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{5/2}}\,dx$$

Optimal (type 4, 492 leaves, 8 steps):

$$\left(8\,b\,\text{Csc}[d+e\,x]^{5/2}\,\text{EllipticE}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[c,a]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^3\right)\Big/$$
$$\left(3\left(a^2-b^2+c^2\right)^2 e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)+$$
$$\left(2\,\text{Csc}[d+e\,x]^{5/2}\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[c,a]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\right.$$
$$\left.\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^2\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/$$
$$\left(3\left(a^2-b^2+c^2\right)e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)-$$
$$\left(2\,\text{Csc}[d+e\,x]^{5/2}\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)\left(a\,\text{Cos}[d+e\,x]-c\,\text{Sin}[d+e\,x]\right)\right)\Big/$$
$$\left(3\left(a^2-b^2+c^2\right)e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)+$$
$$\left(8\,\text{Csc}[d+e\,x]^{5/2}\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^2\left(a\,b\,\text{Cos}[d+e\,x]-b\,c\,\text{Sin}[d+e\,x]\right)\right)\Big/$$
$$\left(3\left(a^2-b^2+c^2\right)^2 e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)$$

Result (type 6, 2708 leaves):

$$\left(\text{Csc}[d+e\,x]^{5/2}\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^3\right.$$
$$\left(\frac{8\,b\left(a^2+c^2\right)}{3\,a\,c\left(-a^2+b^2-c^2\right)^2}+\frac{2\left(a\,b+a^2\,\text{Sin}[d+e\,x]+c^2\,\text{Sin}[d+e\,x]\right)}{3\,c\left(a^2-b^2+c^2\right)\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^2}-\right.$$
$$\left.\left.\frac{2\left(a^3+3\,a\,b^2+a\,c^2+4\,a^2\,b\,\text{Sin}[d+e\,x]+4\,b\,c^2\,\text{Sin}[d+e\,x]\right)}{3\,c\left(a^2-b^2+c^2\right)^2\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)}\right)\right)\Big/$$
$$\left(e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)+$$
$$\left(4\,a\,b\,\text{Csc}[d+e\,x]^{5/2}\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{5/2}\right.$$

$$-\left(\left(\left(a\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)\Big/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}-c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\left.\sqrt{\frac{c\sqrt{\frac{a^2+c^2}{c^2}}+c\sqrt{\frac{a^2+c^2}{c^2}}\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,c\left(b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\,c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Big/$$

$$\left(3\left(a^2-b^2+c^2\right)^2 e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(4\,b\,c^2\,\mathrm{Csc}[d+e\,x]^{5/2}\,\left(b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]\right)^{5/2}\right.$$

$$\left(-\left(\left(a\,\mathrm{AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c},\right.\right.\right.\right.$$

$$\left.\left.-\frac{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\left(-1-\frac{b}{\sqrt{1+\frac{a^2}{c^2}}\,c}\right)c}\right]\,\mathrm{Sin}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]\right)\Big/$$

$$\left(\sqrt{1+\frac{a^2}{c^2}}\,c\,\sqrt{\frac{c\,\sqrt{\frac{a^2+c^2}{c^2}}-c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{b+c\,\sqrt{\frac{a^2+c^2}{c^2}}}}\right.$$

$$\sqrt{b+c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}$$

$$\left.\left.\sqrt{\frac{c\,\sqrt{\frac{a^2+c^2}{c^2}}+c\,\sqrt{\frac{a^2+c^2}{c^2}}\,\mathrm{Cos}\left[d+e\,x-\mathrm{ArcTan}\left[\frac{a}{c}\right]\right]}{-b+c\,\sqrt{\frac{a^2+c^2}{c^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,c\,\left(b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]\right)}{a^2+c^2}-\frac{a\,\text{Sin}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}{\sqrt{1+\frac{a^2}{c^2}}\,c}}{\sqrt{b+\sqrt{1+\frac{a^2}{c^2}}\,c\,\text{Cos}\left[d+e\,x-\text{ArcTan}\left[\frac{a}{c}\right]\right]}}\right)\right)\Big/$$

$$\left(3\,a\,\left(a^2-b^2+c^2\right)^2\,e\,\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(2\,a\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\,\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\,\sqrt{1+\frac{c^2}{a^2}}\,\left(1-\frac{b}{a\,\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$\left.-\frac{b+a\,\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\,\sqrt{1+\frac{c^2}{a^2}}\,\left(-1-\frac{b}{a\,\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]$$

$$\text{Csc}[d+e\,x]^{5/2}\,\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]$$

$$\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{a\,\sqrt{\frac{a^2+c^2}{a^2}}-a\,\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\,\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\,\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\,\sqrt{\frac{a^2+c^2}{a^2}}+a\,\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\,\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Big/$$

$$\left(3\,\left(a^2-b^2+c^2\right)^2\sqrt{1+\frac{c^2}{a^2}}\;e\,\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(2\,b^2\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\mathrm{Csc}[d+e\,x]^{5/2}$$

$$\mathrm{Sec}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]\left(b+c\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\;\mathrm{Sin}\left[d+e\,x+\mathrm{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Bigg/$$

$$\left(a\,\left(a^2-b^2+c^2\right)^2\sqrt{1+\frac{c^2}{a^2}}\;e\,\left(a+c\,\mathrm{Cot}[d+e\,x]+b\,\mathrm{Csc}[d+e\,x]\right)^{5/2}\right)+$$

$$\left(2\,c^2\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)},\right.\right.$$

$$\left.-\frac{b+a\sqrt{1+\frac{c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{a\sqrt{1+\frac{c^2}{a^2}}\left(-1-\frac{b}{a\sqrt{1+\frac{c^2}{a^2}}}\right)}\right]\text{Csc}[d+e\,x]^{5/2}$$

$$\text{Sec}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^{5/2}$$

$$\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}-a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{b+a\sqrt{\frac{a^2+c^2}{a^2}}}}$$

$$\sqrt{b+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}$$

$$\left.\sqrt{\frac{a\sqrt{\frac{a^2+c^2}{a^2}}+a\sqrt{\frac{a^2+c^2}{a^2}}\,\text{Sin}\left[d+e\,x+\text{ArcTan}\left[\frac{c}{a}\right]\right]}{-b+a\sqrt{\frac{a^2+c^2}{a^2}}}}\right)\Big/$$

$$\left(3\,a\left(a^2-b^2+c^2\right)^2\sqrt{1+\frac{c^2}{a^2}}\;e\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{5/2}\right)$$

Problem 467: Attempted integration timed out after 120 seconds.

$$\int\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\text{Sin}[d+e\,x]^{3/2}\,dx$$

Optimal (type 4, 371 leaves, 7 steps):

$$\left(8\,b\,\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\right.$$
$$\left.\text{EllipticE}\left[\frac{1}{2}\,\left(d+e\,x-\text{ArcTan}[c,\,a]\right),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,\text{Sin}[d+e\,x]^{3/2}\right)\Big/$$
$$\left(3\,e\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)\,\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)+$$
$$\left(2\,\left(a^2-b^2+c^2\right)\,\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\right.$$
$$\text{EllipticF}\left[\frac{1}{2}\,\left(d+e\,x-\text{ArcTan}[c,\,a]\right),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,\text{Sin}[d+e\,x]^{3/2}$$
$$\left.\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(3\,e\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)^2\right)-$$
$$\left(2\,\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\,\text{Sin}[d+e\,x]^{3/2}\,\left(a\,\text{Cos}[d+e\,x]-c\,\text{Sin}[d+e\,x]\right)\right)\Big/$$
$$\left(3\,e\,\left(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]\right)\right)$$

Result (type 1, 1 leaves):

???

Problem 468: Unable to integrate problem.

$$\int\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\,\sqrt{\text{Sin}[d+e\,x]}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\,\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,\left(d+e\,x-\text{ArcTan}[c,\,a]\right),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\right.$$
$$\left.\sqrt{\text{Sin}[d+e\,x]}\right)\Big/\left(e\,\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)$$

Result (type 8, 35 leaves):

$$\int\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\,\sqrt{\text{Sin}[d+e\,x]}\,dx$$

Problem 469: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\,\sqrt{\text{Sin}[d+e\,x]}}\,dx$$

Optimal (type 4, 118 leaves, 3 steps):

$$\left(2\,\text{EllipticF}\left[\frac{1}{2}\left(d+e\,x-\text{ArcTan}[c,a]\right),\frac{2\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(e\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\,\sqrt{\text{Sin}[d+e\,x]}\right)$$

Result (type 4, 719 leaves):

$$\left(4\left(i\,a+b-c-i\sqrt{a^2-b^2+c^2}\right)\left(1+\text{Cos}[d+e\,x]\right)\sqrt{\text{Csc}[d+e\,x]}\right.$$
$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-a-i\,b+i\,c+\sqrt{a^2-b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(-a+i\,b-i\,c+\sqrt{a^2-b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\right],\right.$$
$$\left.\frac{i\,b+\sqrt{a^2-b^2+c^2}}{i\,b-\sqrt{a^2-b^2+c^2}}\right]\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{\left(1+\text{Cos}[d+e\,x]\right)^2}}\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)^2$$
$$\sqrt{\frac{\left(-a-i\,b+i\,c+\sqrt{a^2-b^2+c^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(-a+i\,b-i\,c+\sqrt{a^2-b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\sqrt{\text{Cot}\left[\frac{1}{2}(d+e\,x)\right]+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]}$$
$$\sqrt{\frac{i\left(a-\sqrt{a^2-b^2+c^2}+b\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]-c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(-a+i\,b-i\,c+\sqrt{a^2-b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}$$
$$\left.\sqrt{-\frac{i\left(a+\sqrt{a^2-b^2+c^2}+b\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]-c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}{\left(a-i\,b+i\,c+\sqrt{a^2-b^2+c^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]\right)}}\sqrt{\frac{\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2}}\right)\Big/$$
$$\left(\left(a+i\,b-i\,c-\sqrt{a^2-b^2+c^2}\right)e\sqrt{a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]}\sqrt{\left(\left(1+\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right.}\right.$$
$$\left.\left.\left(b+c+2\,a\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]+b\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2-c\,\text{Tan}\left[\frac{1}{2}(d+e\,x)\right]^2\right)\right)\right)$$

Problem 470: Attempted integration timed out after 120 seconds.

$$\int\frac{1}{\left(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x]\right)^{3/2}\,\text{Sin}[d+e\,x]^{3/2}}\,dx$$

Optimal (type 4, 240 leaves, 4 steps):

$$-\left(\left(2\,\text{EllipticE}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[c,a]),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^2\right)\Big/\left((a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\,\text{Sin}[d+e\,x]^{3/2}\,\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\right)-\frac{2\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])\,(a\,\text{Cos}[d+e\,x]-c\,\text{Sin}[d+e\,x])}{(a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{3/2}\,\text{Sin}[d+e\,x]^{3/2}}$$

Result (type 1, 1 leaves):

???

Problem 471: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{5/2}\,\text{Sin}[d+e\,x]^{5/2}}\,dx$$

Optimal (type 4, 492 leaves, 8 steps):

$$\left(8\,b\,\text{EllipticE}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[c,a]),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^3\right)\Big/\left(3\,(a^2-b^2+c^2)^2\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{5/2}\,\text{Sin}[d+e\,x]^{5/2}\,\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)+\left(2\,\text{EllipticF}\left[\frac{1}{2}\,(d+e\,x-\text{ArcTan}[c,a]),\,\frac{2\,\sqrt{a^2+c^2}}{b+\sqrt{a^2+c^2}}\right]\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^2\,\sqrt{\frac{b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x]}{b+\sqrt{a^2+c^2}}}\right)\Big/\left(3\,(a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{5/2}\,\text{Sin}[d+e\,x]^{5/2}\right)-\left(2\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])\,(a\,\text{Cos}[d+e\,x]-c\,\text{Sin}[d+e\,x])\right)\Big/\left(3\,(a^2-b^2+c^2)\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{5/2}\,\text{Sin}[d+e\,x]^{5/2}\right)+\left(8\,(b+c\,\text{Cos}[d+e\,x]+a\,\text{Sin}[d+e\,x])^2\,(a\,b\,\text{Cos}[d+e\,x]-b\,c\,\text{Sin}[d+e\,x])\right)\Big/\left(3\,(a^2-b^2+c^2)^2\,e\,(a+c\,\text{Cot}[d+e\,x]+b\,\text{Csc}[d+e\,x])^{5/2}\,\text{Sin}[d+e\,x]^{5/2}\right)$$

Result (type 1, 1 leaves):

???

Problem 475: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{\operatorname{Cos}[x]^2-\operatorname{Sin}[x]^2}\,dx$$

Optimal (type 3, 11 leaves, 2 steps):

$$\frac{1}{2}\operatorname{ArcTanh}[2\operatorname{Cos}[x]\operatorname{Sin}[x]]$$

Result (type 3, 23 leaves):

$$-\frac{1}{2}\operatorname{Log}[\operatorname{Cos}[x]-\operatorname{Sin}[x]]+\frac{1}{2}\operatorname{Log}[\operatorname{Cos}[x]+\operatorname{Sin}[x]]$$

Problem 503: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{d+e\operatorname{Sin}[x]}{a+b\operatorname{Sin}[x]+c\operatorname{Sin}[x]^2}\,dx$$

Optimal (type 3, 242 leaves, 7 steps):

$$\frac{\sqrt{2}\left(e+\frac{2cd-be}{\sqrt{b^2-4ac}}\right)\operatorname{ArcTan}\left[\frac{2c+\left(b-\sqrt{b^2-4ac}\right)\operatorname{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}\sqrt{b^2-2c(a+c)-b\sqrt{b^2-4ac}}}\right]}{\sqrt{b^2-2c(a+c)-b\sqrt{b^2-4ac}}}+$$

$$\frac{\sqrt{2}\left(e-\frac{2cd-be}{\sqrt{b^2-4ac}}\right)\operatorname{ArcTan}\left[\frac{2c+\left(b+\sqrt{b^2-4ac}\right)\operatorname{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}\sqrt{b^2-2c(a+c)+b\sqrt{b^2-4ac}}}\right]}{\sqrt{b^2-2c(a+c)+b\sqrt{b^2-4ac}}}$$

Result (type 3, 286 leaves):

$$\frac{1}{\sqrt{-\frac{b^2}{2}+2\,a\,c}}\left(\left(\left(-2\,i\,c\,d+\left(i\,b+\sqrt{-b^2+4\,a\,c}\right)e\right)\text{ArcTan}\left[\frac{2\,c+\left(b-i\,\sqrt{-b^2+4\,a\,c}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}\,\sqrt{b^2-2\,c\,(a+c)-i\,b\,\sqrt{-b^2+4\,a\,c}}}\right]\right)\Big/\left(\sqrt{b^2-2\,c\,(a+c)-i\,b\,\sqrt{-b^2+4\,a\,c}}\right)+\left(\left(2\,i\,c\,d+\left(-i\,b+\sqrt{-b^2+4\,a\,c}\right)e\right)\text{ArcTan}\left[\frac{2\,c+\left(b+i\,\sqrt{-b^2+4\,a\,c}\right)\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}\,\sqrt{b^2-2\,c\,(a+c)+i\,b\,\sqrt{-b^2+4\,a\,c}}}\right]\right)\Big/\left(\sqrt{b^2-2\,c\,(a+c)+i\,b\,\sqrt{-b^2+4\,a\,c}}\right)\right)$$

Problem 510: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int(a+b\,\text{Tan}[d+e\,x])\left(b^2+2\,a\,b\,\text{Tan}[d+e\,x]+a^2\,\text{Tan}[d+e\,x]^2\right)^2\,dx$$

Optimal (type 3, 144 leaves, 7 steps):

$$a\left(a^2-3\,b^2\right)\left(a^2+b^2\right)x+\frac{b\left(3\,a^2-b^2\right)\left(a^2+b^2\right)\text{Log}[\text{Cos}[d+e\,x]]}{e}-\frac{a\left(a^4-b^4\right)\text{Tan}[d+e\,x]}{e}+\frac{b\left(a^2+b^2\right)(b+a\,\text{Tan}[d+e\,x])^2}{2\,e}+\frac{\left(a^2+b^2\right)(b+a\,\text{Tan}[d+e\,x])^3}{3\,e}+\frac{b\,(b+a\,\text{Tan}[d+e\,x])^4}{4\,e}$$

Result (type 3, 578 leaves):

$$\frac{a^4 b \operatorname{Cos}[d+e x] (b+a \operatorname{Tan}[d+e x])^4 (a+b \operatorname{Tan}[d+e x])}{4 e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])}+$$
$$\frac{a^2 b (a^2+3 b^2) \operatorname{Cos}[d+e x]^3 (b+a \operatorname{Tan}[d+e x])^4 (a+b \operatorname{Tan}[d+e x])}{e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])}-$$
$$\Big(a (-i a+b) (i a+b) (-a^2+3 b^2) (d+e x) \operatorname{Cos}[d+e x]^5 (b+a \operatorname{Tan}[d+e x])^4 (a+b \operatorname{Tan}[d+e x])\Big)\Big/$$
$$\Big(e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])\Big)+$$
$$\Big((3 a^4 b+2 a^2 b^3-b^5) \operatorname{Cos}[d+e x]^5 \operatorname{Log}[\operatorname{Cos}[d+e x]] (b+a \operatorname{Tan}[d+e x])^4 (a+b \operatorname{Tan}[d+e x])\Big)\Big/$$
$$\Big(e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])\Big)+$$
$$\Big(\operatorname{Cos}[d+e x]^2 (a^5 \operatorname{Sin}[d+e x]+4 a^3 b^2 \operatorname{Sin}[d+e x]) (b+a \operatorname{Tan}[d+e x])^4 (a+b \operatorname{Tan}[d+e x])\Big)\Big/$$
$$\Big(3 e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])\Big)+$$
$$\Big(2 \operatorname{Cos}[d+e x]^4 (-2 a^5 \operatorname{Sin}[d+e x]+a^3 b^2 \operatorname{Sin}[d+e x]+6 a b^4 \operatorname{Sin}[d+e x]) (b+a \operatorname{Tan}[d+e x])^4$$
$$(a+b \operatorname{Tan}[d+e x])\Big)\Big/\Big(3 e (b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^4 (a \operatorname{Cos}[d+e x]+b \operatorname{Sin}[d+e x])\Big)$$

Problem 512: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a+b \operatorname{Tan}[d+e x]}{b^2+2 a b \operatorname{Tan}[d+e x]+a^2 \operatorname{Tan}[d+e x]^2} \, dx$$

Optimal (type 3, 101 leaves, 4 steps):

$$-\frac{a (a^2-3 b^2) x}{(a^2+b^2)^2}+\frac{b (3 a^2-b^2) \operatorname{Log}[b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x]]}{(a^2+b^2)^2 e}-\frac{a^2-b^2}{(a^2+b^2) e (b+a \operatorname{Tan}[d+e x])}$$

Result (type 3, 219 leaves):

$$\frac{1}{2 b (a^2+b^2)^2 e (b+a \operatorname{Tan}[d+e x])}$$
$$\Big(b^2 \Big(-2 (a-i b)^3 (d+e x)-b (-3 a^2+b^2) \operatorname{Log}\big[(b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^2\big]\Big)+$$
$$a \Big(2 (a-i b) (a^3-a^2 b (-i+d+e x)+b^3 (-i+d+e x)+i a b^2 (i+2 d+2 e x))-$$
$$b^2 (-3 a^2+b^2) \operatorname{Log}\big[(b \operatorname{Cos}[d+e x]+a \operatorname{Sin}[d+e x])^2\big]\Big) \operatorname{Tan}[d+e x]+$$
$$2 i b^2 (-3 a^2+b^2) \operatorname{ArcTan}[\operatorname{Tan}[d+e x]] (b+a \operatorname{Tan}[d+e x])\Big)$$

Problem 513: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{a+b \operatorname{Tan}[d+e x]}{(b^2+2 a b \operatorname{Tan}[d+e x]+a^2 \operatorname{Tan}[d+e x]^2)^2} \, dx$$

Optimal (type 3, 197 leaves, 6 steps):

$$\frac{a\left(a^4-10 a^2 b^2+5 b^4\right) x}{\left(a^2+b^2\right)^4}-\frac{b\left(5 a^4-10 a^2 b^2+b^4\right) \text{Log}[b \text{Cos}[d+e x]+a \text{Sin}[d+e x]]}{\left(a^2+b^2\right)^4 e}-\frac{a^2-b^2}{3\left(a^2+b^2\right) e\left(b+a \text{Tan}[d+e x]\right)^3}-\frac{b\left(3 a^2-b^2\right)}{2\left(a^2+b^2\right)^2 e\left(b+a \text{Tan}[d+e x]\right)^2}+\frac{a^4-6 a^2 b^2+b^4}{\left(a^2+b^2\right)^3 e\left(b+a \text{Tan}[d+e x]\right)}$$

Result (type 3, 1098 leaves):

$$\Big(\Big(-5 i a^{11} b+5 a^{10} b^2-5 i a^9 b^3+5 a^8 b^4+14 i a^7 b^5-14 a^6 b^6+22 i a^5 b^7-22 a^4 b^8+7 i a^3 b^9-7 a^2 b^{10}-i a b^{11}+b^{12}\Big)(d+e x) \text{Sec}[d+e x]^3 \left(b \text{Cos}[d+e x]+a \text{Sin}[d+e x]\right)^4 \left(a+b \text{Tan}[d+e x]\right)\Big)\Big/\Big((a-i b)^3 (a+i b)^4 (-i a+b)^4 (i a+b)^4 e \left(a \text{Cos}[d+e x]+b \text{Sin}[d+e x]\right)\left(b+a \text{Tan}[d+e x]\right)^4\Big)-$$

$$\Big(i\left(-5 a^4 b+10 a^2 b^3-b^5\right) \text{ArcTan}[\text{Tan}[d+e x]] \text{Sec}[d+e x]^3 \left(b \text{Cos}[d+e x]+a \text{Sin}[d+e x]\right)^4 \left(a+b \text{Tan}[d+e x]\right)\Big)\Big/\Big(\left(a^2+b^2\right)^4 e\left(a \text{Cos}[d+e x]+b \text{Sin}[d+e x]\right)\left(b+a \text{Tan}[d+e x]\right)^4\Big)+$$

$$\Big(\left(-5 a^4 b+10 a^2 b^3-b^5\right) \text{Log}\Big[\left(b \text{Cos}[d+e x]+a \text{Sin}[d+e x]\right)^2\Big] \text{Sec}[d+e x]^3 \left(b \text{Cos}[d+e x]+a \text{Sin}[d+e x]\right)^4 \left(a+b \text{Tan}[d+e x]\right)\Big)\Big/\Big(2\left(a^2+b^2\right)^4 e\left(a \text{Cos}[d+e x]+b \text{Sin}[d+e x]\right)\left(b+a \text{Tan}[d+e x]\right)^4\Big)+$$

$$\Big(\text{Sec}[d+e x]^3 \left(b \text{Cos}[d+e x]+a \text{Sin}[d+e x]\right)\Big(-12 a^8 b \text{Cos}[d+e x]+24 a^6 b^3 \text{Cos}[d+e x]+36 a^4 b^5 \text{Cos}[d+e x]+9 a^7 b^2 (d+e x) \text{Cos}[d+e x]-81 a^5 b^4 (d+e x) \text{Cos}[d+e x]-45 a^3 b^6 (d+e x) \text{Cos}[d+e x]+45 a b^8 (d+e x) \text{Cos}[d+e x]+8 a^8 b \text{Cos}[3(d+e x)]-54 a^6 b^3 \text{Cos}[3(d+e x)]-44 a^4 b^5 \text{Cos}[3(d+e x)]+18 a^2 b^7 \text{Cos}[3(d+e x)]-9 a^7 b^2 (d+e x) \text{Cos}[3(d+e x)]+93 a^5 b^4 (d+e x) \text{Cos}[3(d+e x)]-75 a^3 b^6 (d+e x) \text{Cos}[3(d+e x)]+15 a b^8 (d+e x) \text{Cos}[3(d+e x)]-12 a^9 \text{Sin}[d+e x]+51 a^7 b^2 \text{Sin}[d+e x]+81 a^5 b^4 \text{Sin}[d+e x]+9 a^3 b^6 \text{Sin}[d+e x]-9 a b^8 \text{Sin}[d+e x]+9 a^8 b (d+e x) \text{Sin}[d+e x]-81 a^6 b^3 (d+e x) \text{Sin}[d+e x]-45 a^4 b^5 (d+e x) \text{Sin}[d+e x]+45 a^2 b^7 (d+e x) \text{Sin}[d+e x]+4 a^9 \text{Sin}[3(d+e x)]-31 a^7 b^2 \text{Sin}[3(d+e x)]+5 a^5 b^4 \text{Sin}[3(d+e x)]+31 a^3 b^6 \text{Sin}[3(d+e x)]-9 a b^8 \text{Sin}[3(d+e x)]-3 a^8 b (d+e x) \text{Sin}[3(d+e x)]+39 a^6 b^3 (d+e x) \text{Sin}[3(d+e x)]-105 a^4 b^5 (d+e x) \text{Sin}[3(d+e x)]+45 a^2 b^7 (d+e x) \text{Sin}[3(d+e x)]\Big)\left(a+b \text{Tan}[d+e x]\right)\Big)\Big/\Big(12 b (-i a+b)^4 (i a+b)^4 e\left(a \text{Cos}[d+e x]+b \text{Sin}[d+e x]\right)\left(b+a \text{Tan}[d+e x]\right)^4\Big)$$

Problem 517: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{a+b \text{Tan}[d+e x]}{\left(b^2+2 a b \text{Tan}[d+e x]+a^2 \text{Tan}[d+e x]^2\right)^{3/2}} \, dx$$

Optimal (type 3, 316 leaves, 5 steps):

$$-\frac{(a^2-b^2)\,(b+a\,\mathrm{Tan}[d+e\,x])}{2\,(a^2+b^2)\,e\,\left(b^2+2\,a\,b\,\mathrm{Tan}[d+e\,x]+a^2\,\mathrm{Tan}[d+e\,x]^2\right)^{3/2}}-$$
$$\left(\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Log}[b\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x]]\,(b+a\,\mathrm{Tan}[d+e\,x])^3\right)\Big/$$
$$\left((a^2+b^2)^3\,e\,\left(b^2+2\,a\,b\,\mathrm{Tan}[d+e\,x]+a^2\,\mathrm{Tan}[d+e\,x]^2\right)^{3/2}\right)-$$
$$\frac{4\,b\,(a^2-b^2)\,x\,\left(a\,b+a^2\,\mathrm{Tan}[d+e\,x]\right)^3}{a^2\,(a^2+b^2)^3\,\left(b^2+2\,a\,b\,\mathrm{Tan}[d+e\,x]+a^2\,\mathrm{Tan}[d+e\,x]^2\right)^{3/2}}-\left(b\,(3\,a^2-b^2)\,\left(a\,b+a^2\,\mathrm{Tan}[d+e\,x]\right)^3\right)\Big/$$
$$\left((a^2+b^2)^2\,e\,\left(a^3\,b+a^4\,\mathrm{Tan}[d+e\,x]\right)\,\left(b^2+2\,a\,b\,\mathrm{Tan}[d+e\,x]+a^2\,\mathrm{Tan}[d+e\,x]^2\right)^{3/2}\right)$$

Result (type 3, 293 leaves) :

$$\frac{1}{2\,(a^2+b^2)^3\,e\,(b+a\,\mathrm{Tan}[d+e\,x])\,\sqrt{(b+a\,\mathrm{Tan}[d+e\,x])^2}}\left(\left(-a^6+a^2\,b^4\right)\,\mathrm{Sec}[d+e\,x]^2+\right.$$
$$2\,\mathrm{i}\,\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{ArcTan}[\mathrm{Tan}[d+e\,x]]\,(b+a\,\mathrm{Tan}[d+e\,x])^2+(b+a\,\mathrm{Tan}[d+e\,x])$$
$$\left(b\,\left(-2\,\mathrm{i}\,(a-\mathrm{i}\,b)^4\,(d+e\,x)-\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Log}\left[(b\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x])^2\right]\right)+\right.$$
$$a\,\left(2\,(a-\mathrm{i}\,b)\,\left(a^2\,b\,(4\,\mathrm{i}-3\,d-3\,e\,x)+b^3\,(-2\,\mathrm{i}+d+e\,x)-\mathrm{i}\,a^3\,(4\,\mathrm{i}+d+e\,x)+\mathrm{i}\,a\,b^2\,(2\,\mathrm{i}+3\,d+\right.\right.$$
$$\left.\left.\left.\left.3\,e\,x)\right)-\left(a^4-6\,a^2\,b^2+b^4\right)\,\mathrm{Log}\left[(b\,\mathrm{Cos}[d+e\,x]+a\,\mathrm{Sin}[d+e\,x])^2\right]\right)\,\mathrm{Tan}[d+e\,x]\right)\right)$$

Problem 518: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Sec}[d+e\,x])\,\left(b^2+2\,a\,b\,\mathrm{Sec}[d+e\,x]+a^2\,\mathrm{Sec}[d+e\,x]^2\right)^2\,dx$$

Optimal (type 3, 184 leaves, 8 steps) :

$$a\,b^4\,x+\frac{b\,\left(19\,a^4+56\,a^2\,b^2+8\,b^4\right)\,\mathrm{ArcTanh}[\mathrm{Sin}[d+e\,x]]}{8\,e}+$$
$$\frac{a\,\left(4\,a^4+50\,a^2\,b^2+19\,b^4\right)\,\mathrm{Tan}[d+e\,x]}{6\,e}+\frac{a^2\,b\,\left(41\,a^2+26\,b^2\right)\,\mathrm{Sec}[d+e\,x]\,\mathrm{Tan}[d+e\,x]}{24\,e}+$$
$$\frac{\left(4\,a^2+7\,b^2\right)\,\left(a\,b+a^2\,\mathrm{Sec}[d+e\,x]\right)^2\,\mathrm{Tan}[d+e\,x]}{12\,a\,e}+\frac{b\,\left(a\,b+a^2\,\mathrm{Sec}[d+e\,x]\right)^3\,\mathrm{Tan}[d+e\,x]}{4\,a^2\,e}$$

Result (type 3, 590 leaves) :

$$\frac{a\,b^4\,(d+e\,x)}{e}+\frac{\left(-19\,a^4\,b-56\,a^2\,b^3-8\,b^5\right)\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right]}{8\,e}+$$
$$\frac{\left(19\,a^4\,b+56\,a^2\,b^3+8\,b^5\right)\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right]}{8\,e}+$$
$$\frac{a^4\,b}{16\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^4}+\frac{4\,a^5+57\,a^4\,b+16\,a^3\,b^2+72\,a^2\,b^3}{48\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^2}-$$
$$\frac{a^4\,b}{16\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^4}+\frac{-4\,a^5-57\,a^4\,b-16\,a^3\,b^2-72\,a^2\,b^3}{48\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^2}+$$
$$\frac{a^5\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+4\,a^3\,b^2\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]}{6\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3}+\frac{a^5\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+4\,a^3\,b^2\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]}{6\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)^3}+$$
$$\left(2\,\left(a^5\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+13\,a^3\,b^2\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+6\,a\,b^4\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/$$
$$\left(3\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)+$$
$$\left(2\,\left(a^5\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+13\,a^3\,b^2\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]+6\,a\,b^4\,\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)\Big/$$
$$\left(3\,e\,\left(\text{Cos}\left[\frac{1}{2}\,(d+e\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(d+e\,x)\right]\right)\right)$$

Problem 548: Result more than twice size of optimal antiderivative.

$$\int\frac{B\,\text{Cos}[x]+C\,\text{Sin}[x]}{a+b\,\text{Cos}[x]+i\,b\,\text{Sin}[x]}\,dx$$

Optimal (type 3, 92 leaves, 1 step):

$$-\frac{b\,(B+i\,C)\,x}{2\,a^2}-\frac{\left(i\,b^2\,(B+i\,C)+a^2\,(i\,B+C)\right)\,\text{Log}[a+b\,\text{Cos}[x]+i\,b\,\text{Sin}[x]]}{2\,a^2\,b}+$$
$$\frac{(i\,B-C)\,(\text{Cos}[x]-i\,\text{Sin}[x])}{2\,a}$$

Result (type 3, 195 leaves):

$$\frac{\left(a^2\,B-b^2\,B-i\,a^2\,C-i\,b^2\,C\right)\,x}{4\,a^2\,b}-\frac{\left(a^2\,B+b^2\,B-i\,a^2\,C+i\,b^2\,C\right)\,\text{ArcTan}\left[\frac{(a+b)\,\text{Cos}\left[\frac{x}{2}\right]}{-a\,\text{Sin}\left[\frac{x}{2}\right]+b\,\text{Sin}\left[\frac{x}{2}\right]}\right]}{2\,a^2\,b}+$$
$$\frac{i\,(B+i\,C)\,\text{Cos}[x]}{2\,a}-\frac{i\,\left(a^2\,B+b^2\,B-i\,a^2\,C+i\,b^2\,C\right)\,\text{Log}\left[a^2+b^2+2\,a\,b\,\text{Cos}[x]\right]}{4\,a^2\,b}+\frac{(B+i\,C)\,\text{Sin}[x]}{2\,a}$$

Problem 549: Result more than twice size of optimal antiderivative.

$$\int\frac{B\,\text{Cos}[x]+C\,\text{Sin}[x]}{a+b\,\text{Cos}[x]-i\,b\,\text{Sin}[x]}\,dx$$

Optimal (type 3, 90 leaves, 1 step):

$$-\frac{b\,(B-i\,C)\,x}{2\,a^2}+\frac{\left(i\,a^2\,(B+i\,C)+b^2\,(i\,B+C)\right)\,\text{Log}[a+b\,\text{Cos}[x]-i\,b\,\text{Sin}[x]]}{2\,a^2\,b}-\frac{(i\,B+C)\,(\text{Cos}[x]+i\,\text{Sin}[x])}{2\,a}$$

Result (type 3, 195 leaves):

$$\frac{\left(a^2\,B-b^2\,B+i\,a^2\,C+i\,b^2\,C\right)\,x}{4\,a^2\,b}+\frac{\left(a^2\,B+b^2\,B+i\,a^2\,C-i\,b^2\,C\right)\,\text{ArcTan}\left[\frac{(a+b)\,\text{Cos}\left[\frac{x}{2}\right]}{a\,\text{Sin}\left[\frac{x}{2}\right]-b\,\text{Sin}\left[\frac{x}{2}\right]}\right]}{2\,a^2\,b}-\frac{i\,(B-i\,C)\,\text{Cos}[x]}{2\,a}+\frac{i\,\left(a^2\,B+b^2\,B+i\,a^2\,C-i\,b^2\,C\right)\,\text{Log}\left[a^2+b^2+2\,a\,b\,\text{Cos}[x]\right]}{4\,a^2\,b}+\frac{(B-i\,C)\,\text{Sin}[x]}{2\,a}$$

Problem 556: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b\,\text{Cos}[x]+c\,\text{Sin}[x])^{5/2}\,(d+b\,e\,\text{Cos}[x]+c\,e\,\text{Sin}[x])\,dx$$

Optimal (type 4, 390 leaves, 8 steps):

$$\left(2\,\left(161\,a^2\,d+63\,\left(b^2+c^2\right)\,d+15\,a^3\,e+145\,a\,\left(b^2+c^2\right)\,e\right)\,\text{EllipticE}\left[\frac{1}{2}\,(x-\text{ArcTan}[b,c]),\frac{2\,\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\,\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)\Bigg/\left(105\,\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)-\left(2\,\left(a^2-b^2-c^2\right)\,\left(56\,a\,d+15\,a^2\,e+25\,\left(b^2+c^2\right)\,e\right)\,\text{EllipticF}\left[\frac{1}{2}\,(x-\text{ArcTan}[b,c]),\frac{2\,\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\,\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)\Bigg/\left(105\,\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)-\frac{2}{7}\,(a+b\,\text{Cos}[x]+c\,\text{Sin}[x])^{5/2}\,(c\,e\,\text{Cos}[x]-b\,e\,\text{Sin}[x])-\frac{2}{35}\,(a+b\,\text{Cos}[x]+c\,\text{Sin}[x])^{3/2}\,(c\,(7\,d+5\,a\,e)\,\text{Cos}[x]-b\,(7\,d+5\,a\,e)\,\text{Sin}[x])-\frac{2}{105}\,\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\,\left(c\,\left(56\,a\,d+15\,a^2\,e+25\,\left(b^2+c^2\right)\,e\right)\,\text{Cos}[x]-b\,\left(56\,a\,d+15\,a^2\,e+25\,\left(b^2+c^2\right)\,e\right)\,\text{Sin}[x]\right)$$

Result (type 6, 7823 leaves):

$$\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\,\left(\frac{2\,b\,\left(161\,a^2\,d+63\,b^2\,d+63\,c^2\,d+15\,a^3\,e+145\,a\,b^2\,e+145\,a\,c^2\,e\right)}{105\,c}-\frac{1}{210}\,c\,\left(308\,a\,d+180\,a^2\,e+115\,b^2\,e+115\,c^2\,e\right)\,\text{Cos}[x]-\frac{2}{35}\,b\,c\,(7\,d+15\,a\,e)\,\text{Cos}[2\,x]-\right.$$

$$\frac{1}{14} c \left(3 b^2 - c^2\right) e \operatorname{Cos}[3 x] + \frac{1}{210} b \left(308 a d + 180 a^2 e + 115 b^2 e + 115 c^2 e\right) \operatorname{Sin}[x] +$$

$$\left.\frac{1}{35} \left(b^2 - c^2\right) \left(7 d + 15 a e\right) \operatorname{Sin}[2 x] + \frac{1}{14} b \left(b^2 - 3 c^2\right) e \operatorname{Sin}[3 x]\right) +$$

$$\frac{1}{\sqrt{1 + \frac{b^2}{c^2}}\, c} 2 a^3 d \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c},\right.$$

$$\left.-\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(-1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c}\right] \operatorname{Sec}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c \sqrt{\frac{b^2+c^2}{c^2}} - c \sqrt{\frac{b^2+c^2}{c^2}} \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{a + c \sqrt{\frac{b^2+c^2}{c^2}}}} \sqrt{a + c \sqrt{\frac{b^2 + c^2}{c^2}} \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c \sqrt{\frac{b^2+c^2}{c^2}} + c \sqrt{\frac{b^2+c^2}{c^2}} \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{-a + c \sqrt{\frac{b^2+c^2}{c^2}}}} + \frac{1}{15 \sqrt{1 + \frac{b^2}{c^2}}\, c}$$

$$34 a b^2 d \operatorname{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c},\right.$$

$$\left.-\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \operatorname{Sin}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(-1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c}\right] \operatorname{Sec}\left[x + \operatorname{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{15\sqrt{1+\frac{b^2}{c^2}}}$$

$$34\,a\,c\,d\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{7\sqrt{1+\frac{b^2}{c^2}}\,c}$$

$$18\,a^2\,b^2\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\Big]\;\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{21\sqrt{1+\frac{b^2}{c^2}}\;c}$$

$$10\,b^4\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\Big]\;\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{7\sqrt{1+\frac{b^2}{c^2}}}$$

$$18\,a^2\,c\,e\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\Big]\,\text{Sec}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{21\sqrt{1+\frac{b^2}{c^2}}}$$

$$20\,b^2\,c\,e\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\Big]\,\text{Sec}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{21\sqrt{1+\frac{b^2}{c^2}}}$$

$$10\,c^3\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{15\,c}$$

$$23\,a^2\,b^2\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\Bigg)-$$

$$\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\Bigg)+\frac{1}{5\,c}$$

$$3\,b^4\,d\left(-\left(\left(\text{c AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{23}{15}a^2\,c\,d$$

$$\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\;\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\;\Bigg)\Bigg) -$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right) + \frac{6}{5}\,b^2\,c\,d$$

$$\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\;\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\;\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\;\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\;\Bigg)\Bigg) -$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{3}{5}c^3 d$$

$$\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{7\,c}a^3 b^2 e$$

$$-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{21\,c}29\,a\,b^4\,e$$

$$-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{7}a^3 c\, e$$

$$\left(-\left(\left(\text{c AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{58}{21}\,a\,b^2\,c\,e$$

$$\left(-\left(\left(\mathrm{c\;AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{29}{21}\,a\,c^3\,e$$

$$\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)$$

Problem 557: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x])^{3/2}\,(d+b\,e\,\mathrm{Cos}[x]+c\,e\,\mathrm{Sin}[x])\,dx$$

Optimal (type 4, 294 leaves, 7 steps):

$$\left(2\left(20\,a\,d+3\,a^2\,e+9\left(b^2+c^2\right)e\right)\mathrm{EllipticE}\left[\frac{1}{2}\left(x-\mathrm{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\right)\Big/\left(15\sqrt{\frac{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)-$$
$$\left(2\left(a^2-b^2-c^2\right)\left(5\,d+3\,a\,e\right)\mathrm{EllipticF}\left[\frac{1}{2}\left(x-\mathrm{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)\Big/\left(15\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\right)-$$
$$\frac{2}{5}\left(a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]\right)^{3/2}\left(c\,e\,\mathrm{Cos}[x]-b\,e\,\mathrm{Sin}[x]\right)-$$
$$\frac{2}{15}\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\left(c\left(5\,d+3\,a\,e\right)\mathrm{Cos}[x]-b\left(5\,d+3\,a\,e\right)\mathrm{Sin}[x]\right)$$

Result (type 6, 5218 leaves):

$$\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\left(\frac{2\,b\left(20\,a\,d+3\,a^2\,e+9\,b^2\,e+9\,c^2\,e\right)}{15\,c}-\frac{2}{15}c\left(5\,d+6\,a\,e\right)\mathrm{Cos}[x]-\right.$$
$$\left.\frac{2}{5}b\,c\,e\,\mathrm{Cos}[2\,x]+\frac{2}{15}b\left(5\,d+6\,a\,e\right)\mathrm{Sin}[x]+\frac{1}{5}\left(b^2-c^2\right)e\,\mathrm{Sin}[2\,x]\right)+$$
$$\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\,c}2\,a^2\,d\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\Bigg]\;\mathrm{Sec}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}\;c}$$

$$2\,b^2\,d\;\mathrm{AppellF1}\left[\frac{1}{2},\;\frac{1}{2},\;\frac{1}{2},\;\frac{3}{2},\;-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\Bigg]\;\mathrm{Sec}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}}$$

$$2\,c\,d\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\Big]\,\text{Sec}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{5\sqrt{1+\frac{b^2}{c^2}}\,c}$$

$$8\,a\,b^2\,e\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},$$

$$-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\Big]\,\text{Sec}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\big[x+\text{ArcTan}\big[\frac{b}{c}\big]\big]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\Big[x+\text{ArcTan}\Big[\frac{b}{c}\Big]\Big]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{5\sqrt{1+\frac{b^2}{c^2}}}$$

$$8\,a\,c\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\,c}$$

$$4\,a\,b^2\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{4}{3}\,a\,c\,d$$

$$\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5c}a^2b^2e$$

$$\left(-\left(\left(\left(c\operatorname{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5\,c}$$

$$3\,b^4\,e\left(-\left(\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{5}\,a^2\,c\,e$$

$$\left(-\left(\left(\left(c\,\operatorname{AppellF1}\left[-\frac{1}{2},\,-\frac{1}{2},\,-\frac{1}{2},\,\frac{1}{2},\,-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{6}{5}\,b^2\,c\,e$$

$$
-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.
$$

$$
\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/
$$

$$
\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.
$$

$$
\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-
$$

$$
\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{3}{5}c^3 e
$$

$$
\left(-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.
$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)-$$

$$\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\Bigg)$$

Problem 558: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\,\left(d+b\,e\,\mathrm{Cos}[x]+c\,e\,\mathrm{Sin}[x]\right)\,dx$$

Optimal (type 4, 229 leaves, 6 steps):

$$\left(2\,(3\,d+a\,e)\,\text{EllipticE}\left[\frac{1}{2}\,(x-\text{ArcTan}[b,c]),\,\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)\Bigg/\left(3\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)-$$

$$\left(2\,(a^2-b^2-c^2)\,e\,\text{EllipticF}\left[\frac{1}{2}\,(x-\text{ArcTan}[b,c]),\,\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)\Bigg/$$

$$\left(3\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)-\frac{2}{3}\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\,\left(c\,e\,\text{Cos}[x]-b\,e\,\text{Sin}[x]\right)$$

Result (type 6, 3006 leaves):

$$\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\,\left(\frac{2\,b\,(3\,d+a\,e)}{3\,c}-\frac{2}{3}\,c\,e\,\text{Cos}[x]+\frac{2}{3}\,b\,e\,\text{Sin}[x]\right)+$$

$$\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\;c}2\,a\,d\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2},\,\frac{1}{2},\,\frac{3}{2},\,-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}\;c}$$

$$2\,b^2\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{3\sqrt{1+\frac{b^2}{c^2}}}$$

$$2\,c\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}+\frac{1}{c}}$$

$$b^2\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+$$

$$c\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{3\,c}$$

$$a\,b^2\,e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{3}\,a\,c\,e$$

$$\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\left(\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}\right)}\right)-$$

$$\left(\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\operatorname{Sin}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\operatorname{Cos}\left[x-\operatorname{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)$$

Problem 559: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{d+b\,e\operatorname{Cos}[x]+c\,e\operatorname{Sin}[x]}{\sqrt{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}}\,dx$$

Optimal (type 4, 180 leaves, 5 steps):

$$\left(2\,e\operatorname{EllipticE}\left[\frac{1}{2}\left(x-\operatorname{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}\right)\Big/$$

$$\left(\sqrt{\frac{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)+$$

$$\left(2\left(d-a\,e\right)\operatorname{EllipticF}\left[\frac{1}{2}\left(x-\operatorname{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)\Big/$$

$$\left(\sqrt{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}\right)$$

Result (type 6, 1319 leaves):

$$\frac{2\,b\,e\sqrt{a+b\operatorname{Cos}[x]+c\operatorname{Sin}[x]}}{c}+\frac{1}{\sqrt{1+\frac{b^2}{c^2}}\;c}$$

$$2\,d\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}+\frac{1}{c}$$

$$b^2\,e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+$$

$$c\,e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\;\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\Bigg)\Bigg) -$$

$$\left(\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)$$

Problem 560: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{d+b\,e\,\mathrm{Cos}[x]+c\,e\,\mathrm{Sin}[x]}{\left(a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]\right)^{3/2}}\,dx$$

Optimal (type 4, 250 leaves, 6 steps):

$$\left(2\,(d-a\,e)\,\mathrm{EllipticE}\left[\frac{1}{2}\,(x-\mathrm{ArcTan}[b,c]),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\right)\Big/$$
$$\left(\left(a^2-b^2-c^2\right)\sqrt{\frac{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)+$$
$$\frac{2\,e\,\mathrm{EllipticF}\left[\frac{1}{2}\,(x-\mathrm{ArcTan}[b,c]),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}{a+\sqrt{b^2+c^2}}}}{\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}}+$$
$$\frac{2\,(c\,(d-a\,e)\,\mathrm{Cos}[x]-b\,(d-a\,e)\,\mathrm{Sin}[x])}{\left(a^2-b^2-c^2\right)\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}}$$

Result (type 6, 3176 leaves):

$$\sqrt{a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x]}\,\left(\frac{2\left(b^2+c^2\right)(-d+a\,e)}{b\,c\left(-a^2+b^2+c^2\right)}-\right.$$
$$\left(2\left(-a\,c\,d+a^2\,c\,e-b^2\,d\,\mathrm{Sin}[x]-c^2\,d\,\mathrm{Sin}[x]+a\,b^2\,e\,\mathrm{Sin}[x]+a\,c^2\,e\,\mathrm{Sin}[x]\right)\right)\Big/$$
$$\left.\left(b\left(-a^2+b^2+c^2\right)(a+b\,\mathrm{Cos}[x]+c\,\mathrm{Sin}[x])\right)\right)-$$

$$\left(2\,a\,d\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\;\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(\sqrt{1+\frac{b^2}{c^2}}\;c\left(-a^2+b^2+c^2\right)\right)+$$

$$\left(2\,b^2\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(\sqrt{1+\frac{b^2}{c^2}}\;c\;\left(-a^2+b^2+c^2\right)\right)+$$

$$\left(2\,c\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(\sqrt{1+\frac{b^2}{c^2}}\;\left(-a^2+b^2+c^2\right)\right)-$$

$$\frac{1}{c\left(-a^2+b^2+c^2\right)}b^2 d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)-\frac{1}{-a^2+b^2+c^2}$$

$$c\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\left(\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}\right)}\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{c\left(-a^2+b^2+c^2\right)}$$

$$a\,b^2\,e\left(-\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)+\frac{1}{-a^2+b^2+c^2}$$

$$a\,c\,e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\ \sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\ \Bigg)\Bigg) -$$

$$\left(\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)$$

Problem 561: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{d+b\,e\,\text{Cos}[x]+c\,e\,\text{Sin}[x]}{(a+b\,\text{Cos}[x]+c\,\text{Sin}[x])^{5/2}}\,dx$$

Optimal (type 4, 378 leaves, 7 steps):

$$\left(2\left(4\,a\,d-a^2\,e-3\left(b^2+c^2\right)e\right)\text{EllipticE}\left[\frac{1}{2}\left(x-\text{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)\Bigg/\left(3\left(a^2-b^2-c^2\right)^2\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)-$$
$$\left(2\left(d-a\,e\right)\text{EllipticF}\left[\frac{1}{2}\left(x-\text{ArcTan}[b,c]\right),\frac{2\sqrt{b^2+c^2}}{a+\sqrt{b^2+c^2}}\right]\sqrt{\frac{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}{a+\sqrt{b^2+c^2}}}\right)\Bigg/$$
$$\left(3\left(a^2-b^2-c^2\right)\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)+\frac{2\left(c\left(d-a\,e\right)\text{Cos}[x]-b\left(d-a\,e\right)\text{Sin}[x]\right)}{3\left(a^2-b^2-c^2\right)\left(a+b\,\text{Cos}[x]+c\,\text{Sin}[x]\right)^{3/2}}+$$
$$\left(2\left(c\left(4\,a\,d-a^2\,e-3\left(b^2+c^2\right)e\right)\text{Cos}[x]-b\left(4\,a\,d-a^2\,e-3\left(b^2+c^2\right)e\right)\text{Sin}[x]\right)\right)\Big/$$
$$\left(3\left(a^2-b^2-c^2\right)^2\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\right)$$

Result (type 6, 5554 leaves):

$$\sqrt{a+b\,\text{Cos}[x]+c\,\text{Sin}[x]}\ \left(-\frac{2\left(b^2+c^2\right)\left(-4\,a\,d+a^2\,e+3\,b^2\,e+3\,c^2\,e\right)}{3\,b\,c\left(-a^2+b^2+c^2\right)^2}-\right.$$
$$\left(2\left(-a\,c\,d+a^2\,c\,e-b^2\,d\,\text{Sin}[x]-c^2\,d\,\text{Sin}[x]+a\,b^2\,e\,\text{Sin}[x]+a\,c^2\,e\,\text{Sin}[x]\right)\right)\Big/$$
$$\left(3\,b\left(-a^2+b^2+c^2\right)\left(a+b\,\text{Cos}[x]+c\,\text{Sin}[x]\right)^2\right)+$$
$$\left(2\left(-3\,a^2\,c\,d-b^2\,c\,d-c^3\,d+4\,a\,b^2\,c\,e+4\,a\,c^3\,e-4\,a\,b^2\,d\,\text{Sin}[x]-4\,a\,c^2\,d\,\text{Sin}[x]+\right.\right.$$

$$a^2 b^2 e \,\mathrm{Sin}[x] + 3 b^4 e \,\mathrm{Sin}[x] + a^2 c^2 e \,\mathrm{Sin}[x] + 6 b^2 c^2 e \,\mathrm{Sin}[x] + 3 c^4 e \,\mathrm{Sin}[x]\Big)\Big) \Big/$$

$$\left(3 b \left(-a^2 + b^2 + c^2\right)^2 \left(a + b \,\mathrm{Cos}[x] + c \,\mathrm{Sin}[x]\right)\right) +$$

$$\left(2 a^2 d \,\mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c},\right.\right.$$

$$\left. -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(-1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c}\right] \mathrm{Sec}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c \sqrt{\frac{b^2+c^2}{c^2}} - c \sqrt{\frac{b^2+c^2}{c^2}} \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a + c \sqrt{\frac{b^2+c^2}{c^2}}}} \sqrt{a + c \sqrt{\frac{b^2 + c^2}{c^2}} \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c \sqrt{\frac{b^2+c^2}{c^2}} + c \sqrt{\frac{b^2+c^2}{c^2}} \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{-a + c \sqrt{\frac{b^2+c^2}{c^2}}}}\right) \Big/ \left(\sqrt{1 + \frac{b^2}{c^2}}\, c \left(-a^2 + b^2 + c^2\right)^2\right) +$$

$$\left(2 b^2 d \,\mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{2}, -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c},\right.\right.$$

$$\left. -\frac{a + \sqrt{1 + \frac{b^2}{c^2}}\, c \,\mathrm{Sin}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1 + \frac{b^2}{c^2}} \left(-1 - \frac{a}{\sqrt{1+\frac{b^2}{c^2}}\, c}\right) c}\right] \mathrm{Sec}\left[x + \mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Big/\left(3\sqrt{1+\frac{b^2}{c^2}}\;c\left(-a^2+b^2+c^2\right)^2\right)+$$

$$\left(2\,c\,d\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\;c\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\;c}\right)c}\right]\mathrm{Sec}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\;\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\mathrm{Sin}\left[x+\mathrm{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Big/\left(3\sqrt{1+\frac{b^2}{c^2}}\left(-a^2+b^2+c^2\right)^2\right)-$$

$$\left(8\,a\,b^2\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Bigg/\left(3\sqrt{1+\frac{b^2}{c^2}}\,c\,\left(-a^2+b^2+c^2\right)^2\right.-$$

$$\left(8\,a\,c\,e\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},\frac{1}{2},\frac{3}{2},-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c},\right.\right.$$

$$\left.-\frac{a+\sqrt{1+\frac{b^2}{c^2}}\,c\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{\sqrt{1+\frac{b^2}{c^2}}\left(-1-\frac{a}{\sqrt{1+\frac{b^2}{c^2}}\,c}\right)c}\right]\text{Sec}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]$$

$$\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}-c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\,\sqrt{a+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}$$

$$\left.\sqrt{\frac{c\sqrt{\frac{b^2+c^2}{c^2}}+c\sqrt{\frac{b^2+c^2}{c^2}}\,\text{Sin}\left[x+\text{ArcTan}\left[\frac{b}{c}\right]\right]}{-a+c\sqrt{\frac{b^2+c^2}{c^2}}}}\right)\Big/\left(3\sqrt{1+\frac{b^2}{c^2}}\,\left(-a^2+b^2+c^2\right)^2\right)+$$

$$\left(4\,a\,b^2\,d\,\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\right)\Big/\left(3\,c\,\left(-a^2+b^2+c^2\right)^2\right)+$$

$$\frac{1}{3\left(-a^2+b^2+c^2\right)^2}4\,a\,c\,d\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)-$$

$$\left(a^2 b^2 e \left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)\right)\Bigg/\left(3c\left(-a^2+b^2+c^2\right)^2\right)-$$

$$\frac{1}{c\left(-a^2+b^2+c^2\right)^2}b^4 e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\ \text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)-\frac{1}{3\left(-a^2+b^2+c^2\right)^2}$$

$$a^2\,c\,e\left(-\left(\left(\left(c\,\mathrm{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\Bigg]\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\Bigg)\Bigg/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)-\frac{1}{\left(-a^2+b^2+c^2\right)^2}$$

$$2\,b^2\,c\,e\left(-\left(\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)-\frac{1}{\left(-a^2+b^2+c^2\right)^2}$$

$$c^3\,e\left(-\left(\left(c\,\text{AppellF1}\left[-\frac{1}{2},-\frac{1}{2},-\frac{1}{2},\frac{1}{2},-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)},\right.\right.\right.\right.$$

$$\left.\left.-\frac{a+b\sqrt{1+\frac{c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}\left(-1-\frac{a}{b\sqrt{1+\frac{c^2}{b^2}}}\right)}\right]\text{Sin}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]\right)\Big/$$

$$\left(b\sqrt{1+\frac{c^2}{b^2}}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}-b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right.$$

$$\left.\left.\sqrt{a+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}\,\sqrt{\frac{b\sqrt{\frac{b^2+c^2}{b^2}}+b\sqrt{\frac{b^2+c^2}{b^2}}\,\text{Cos}\left[x-\text{ArcTan}\left[\frac{c}{b}\right]\right]}{-a+b\sqrt{\frac{b^2+c^2}{b^2}}}}\right)\right)-$$

$$\left.\frac{\frac{2\,b\left(a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]\right)}{b^2+c^2}-\frac{c\,\mathrm{Sin}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}{b\sqrt{1+\frac{c^2}{b^2}}}}{\sqrt{a+b\sqrt{1+\frac{c^2}{b^2}}\,\mathrm{Cos}\left[x-\mathrm{ArcTan}\left[\frac{c}{b}\right]\right]}}\right)$$

Problem 581: Result more than twice size of optimal antiderivative.

$$\int\frac{x}{a+b\,\mathrm{Cos}[x]\,\mathrm{Sin}[x]}\,dx$$

Optimal (type 4, 225 leaves, 9 steps):

$$-\frac{i\,x\,\mathrm{Log}\left[1-\frac{i\,b\,e^{2\,i\,x}}{2\,a-\sqrt{4\,a^2-b^2}}\right]}{\sqrt{4\,a^2-b^2}}+\frac{i\,x\,\mathrm{Log}\left[1-\frac{i\,b\,e^{2\,i\,x}}{2\,a+\sqrt{4\,a^2-b^2}}\right]}{\sqrt{4\,a^2-b^2}}-\frac{\mathrm{PolyLog}\left[2,\frac{i\,b\,e^{2\,i\,x}}{2\,a-\sqrt{4\,a^2-b^2}}\right]}{2\sqrt{4\,a^2-b^2}}+\frac{\mathrm{PolyLog}\left[2,\frac{i\,b\,e^{2\,i\,x}}{2\,a+\sqrt{4\,a^2-b^2}}\right]}{2\sqrt{4\,a^2-b^2}}$$

Result (type 4, 789 leaves):

$$\frac{1}{2}\left(\frac{\pi\,\text{ArcTan}\left[\frac{b+2\,a\,\text{Tan}[x]}{\sqrt{4\,a^2-b^2}}\right]}{\sqrt{4\,a^2-b^2}}+\frac{1}{\sqrt{-4\,a^2+b^2}}\right.$$

$$\left(2\,\text{ArcCos}\left[-\frac{2\,a}{b}\right]\,\text{ArcTanh}\left[\frac{(2\,a-b)\,\text{Cot}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]+(\pi-4\,x)\,\text{ArcTanh}\left[\frac{(2\,a+b)\,\text{Tan}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]-\right.$$

$$\left(\text{ArcCos}\left[-\frac{2\,a}{b}\right]+2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(2\,a-b)\,\text{Cot}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\frac{(2\,a+b)\left(-2\,a+b-\mathrm{i}\,\sqrt{-4\,a^2+b^2}\right)\left(1+\mathrm{i}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}{b\left(2\,a+b+\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{2\,a}{b}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(2\,a-b)\,\text{Cot}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\frac{(2\,a+b)\left(2\,\mathrm{i}\,a-\mathrm{i}\,b+\sqrt{-4\,a^2+b^2}\right)\left(\mathrm{i}+\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}{b\left(2\,a+b+\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{2\,a}{b}\right]+2\,\mathrm{i}\left(\text{ArcTanh}\left[\frac{(2\,a-b)\,\text{Cot}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]+\text{ArcTanh}\left[\frac{(2\,a+b)\,\text{Tan}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]\right)\right)$$

$$\text{Log}\left[\frac{(-1)^{1/4}\,\sqrt{-4\,a^2+b^2}\,e^{-\mathrm{i}\,x}}{2\,\sqrt{b}\,\sqrt{a+b\,\text{Cos}[x]\,\text{Sin}[x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{2\,a}{b}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(2\,a-b)\,\text{Cot}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(2\,a+b)\,\text{Tan}\left[\frac{\pi}{4}+x\right]}{\sqrt{-4\,a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\frac{\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\sqrt{-4\,a^2+b^2}\,e^{\mathrm{i}\,x}}{\sqrt{b}\,\sqrt{2\,a+b\,\text{Sin}[2\,x]}}\right]+$$

$$\mathrm{i}\left(\text{PolyLog}\left[2,\frac{\left(2\,a-\mathrm{i}\,\sqrt{-4\,a^2+b^2}\right)\left(2\,a+b-\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}{b\left(2\,a+b+\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}\right]-\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,\frac{\left(2\,a+\mathrm{i}\,\sqrt{-4\,a^2+b^2}\right)\left(2\,a+b-\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}{b\left(2\,a+b+\sqrt{-4\,a^2+b^2}\,\text{Cot}\left[\frac{\pi}{4}+x\right]\right)}\right]\right)\right)\right)$$

Problem 588: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Sin}[a\,x]^3}{x\,(a\,x\,\text{Cos}[a\,x]-\text{Sin}[a\,x])^2}\,dx$$

Optimal (type 4, 56 leaves, 4 steps):

$$\frac{\text{Cos}[a\,x]}{a\,x}+\frac{\text{Sin}[a\,x]}{a^2\,x^2}+\frac{\text{Sin}[a\,x]^2}{a^2\,x^2\,\left(a\,x\,\text{Cos}[a\,x]-\text{Sin}[a\,x]\right)}+\text{SinIntegral}[a\,x]$$

Result (type 4, 242 leaves):

$$\frac{1}{2\,a\,x\,\text{Cos}[a\,x]-2\,\text{Sin}[a\,x]}\left(1+\text{Cos}[2\,a\,x]+i\,a\,e\,x\,\text{Cos}[a\,x]\,\text{ExpIntegralEi}[-1-i\,a\,x]-i\,a\,e\,x\,\text{Cos}[a\,x]\,\text{ExpIntegralEi}[-1+i\,a\,x]-i\,e\,\text{CosIntegral}[i-a\,x]\,\left(a\,x\,\text{Cos}[a\,x]-\text{Sin}[a\,x]\right)+i\,e\,\text{CosIntegral}[i+a\,x]\,\left(a\,x\,\text{Cos}[a\,x]-\text{Sin}[a\,x]\right)-i\,e\,\text{ExpIntegralEi}[-1-i\,a\,x]\,\text{Sin}[a\,x]+i\,e\,\text{ExpIntegralEi}[-1+i\,a\,x]\,\text{Sin}[a\,x]+2\,a\,x\,\text{Cos}[a\,x]\,\text{SinIntegral}[a\,x]-2\,\text{Sin}[a\,x]\,\text{SinIntegral}[a\,x]+a\,e\,x\,\text{Cos}[a\,x]\,\text{SinIntegral}[i-a\,x]-e\,\text{Sin}[a\,x]\,\text{SinIntegral}[i-a\,x]-a\,e\,x\,\text{Cos}[a\,x]\,\text{SinIntegral}[i+a\,x]+e\,\text{Sin}[a\,x]\,\text{SinIntegral}[i+a\,x]\right)$$

Problem 597: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[a\,x]^3}{x\,\left(\text{Cos}[a\,x]+a\,x\,\text{Sin}[a\,x]\right)^2}\,dx$$

Optimal (type 4, 56 leaves, 4 steps):

$$\frac{\text{Cos}[a\,x]}{a^2\,x^2}+\text{CosIntegral}[a\,x]-\frac{\text{Sin}[a\,x]}{a\,x}-\frac{\text{Cos}[a\,x]^2}{a^2\,x^2\,\left(\text{Cos}[a\,x]+a\,x\,\text{Sin}[a\,x]\right)}$$

Result (type 4, 237 leaves):

$$\frac{1}{2\,\left(\text{Cos}[a\,x]+a\,x\,\text{Sin}[a\,x]\right)}\left(-1+\text{Cos}[2\,a\,x]-e\,\text{Cos}[a\,x]\,\text{CosIntegral}[i+a\,x]+e\,\text{Cos}[a\,x]\,\text{ExpIntegralEi}[-1-i\,a\,x]+e\,\text{Cos}[a\,x]\,\text{ExpIntegralEi}[-1+i\,a\,x]-a\,e\,x\,\text{CosIntegral}[i+a\,x]\,\text{Sin}[a\,x]+a\,e\,x\,\text{ExpIntegralEi}[-1-i\,a\,x]\,\text{Sin}[a\,x]+a\,e\,x\,\text{ExpIntegralEi}[-1+i\,a\,x]\,\text{Sin}[a\,x]+2\,\text{CosIntegral}[a\,x]\,\left(\text{Cos}[a\,x]+a\,x\,\text{Sin}[a\,x]\right)-e\,\text{CosIntegral}[i-a\,x]\,\left(\text{Cos}[a\,x]+a\,x\,\text{Sin}[a\,x]\right)-i\,e\,\text{Cos}[a\,x]\,\text{SinIntegral}[i-a\,x]-i\,a\,e\,x\,\text{Sin}[a\,x]\,\text{SinIntegral}[i-a\,x]-i\,e\,\text{Cos}[a\,x]\,\text{SinIntegral}[i+a\,x]-i\,a\,e\,x\,\text{Sin}[a\,x]\,\text{SinIntegral}[i+a\,x]\right)$$

Problem 623: Result unnecessarily involves higher level functions.

$$\int\frac{1}{\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}}\,dx$$

Optimal (type 3, 100 leaves, 6 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2\,a+2\,b\,x]}{\sqrt{-c+c\,\text{Sec}[2\,a+2\,b\,x]}}\right]}{b\,\sqrt{c}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2\,a+2\,b\,x]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2\,a+2\,b\,x]}}\right]}{\sqrt{2}\,b\,\sqrt{c}}$$

Result (type 6, 170 leaves):

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Sin}[a+b\,x]^2\,\text{Tan}[a+b\,x]\right)\Big/\left(b\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]-3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Tan}[a+b\,x]^2\right)\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}\right)$$

Problem 624: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Cos}[2\,(a+b\,x)]}{\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}}\,dx$$

Optimal (type 3, 138 leaves, 7 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{2\,b\,\sqrt{c}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{\sqrt{2}\,b\,\sqrt{c}}+\frac{\text{Sin}[2a+2bx]}{2\,b\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}$$

Result (type 6, 226 leaves):

$$\frac{1}{4\,b\,c}\left(\left(3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Cos}[2\,(a+b\,x)]\,\text{Tan}[a+b\,x]\right)\Big/\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]-3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Tan}[a+b\,x]^2\right)+\text{Cot}[a+b\,x]\left(2\,\text{Cos}[2\,(a+b\,x)]+\text{ArcTan}\left[\sqrt{-1+\text{Tan}[a+b\,x]^2}\right]\sqrt{-1+\text{Tan}[a+b\,x]^2}\right)\right)\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}$$

Problem 625: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Cos}[2\,(a+b\,x)]^2}{\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}}\,dx$$

Optimal (type 3, 182 leaves, 8 steps):

$$\frac{7\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{8\,b\,\sqrt{c}}-\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{\sqrt{2}\,b\,\sqrt{c}}+\frac{\text{Sin}[2a+2bx]}{8\,b\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}+\frac{\text{Cos}[2a+2bx]\,\text{Sin}[2a+2bx]}{4\,b\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}$$

Result (type 6, 235 leaves):

$$\left(\left(42\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Sin}[a+b\,x]^2\,\text{Tan}[a+b\,x]\right)\Big/\right.$$
$$\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]+\right.$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]-$$
$$\left.3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Tan}[a+b\,x]^2\right)+$$
$$\left(2\,\left(1+\text{Cos}[2\,(a+b\,x)]+\text{Cos}[4\,(a+b\,x)]\right)+\text{ArcTan}\left[\sqrt{-1+\text{Tan}[a+b\,x]^2}\right]\sqrt{-1+\text{Tan}[a+b\,x]^2}\right)$$
$$\left.\text{Tan}[2\,(a+b\,x)]\right)\Big/\left(16\,b\,\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}\right)$$

Problem 630: Result unnecessarily involves higher level functions.

$$\int \frac{1}{(c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)])^{3/2}}\,dx$$

Optimal (type 3, 138 leaves, 7 steps):

$$-\frac{\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{b\,c^{3/2}}+\frac{5\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{4\,\sqrt{2}\,b\,c^{3/2}}-\frac{\text{Tan}[2\,a+2\,b\,x]}{4\,b\,(-c+c\,\text{Sec}[2\,a+2\,b\,x])^{3/2}}$$

Result (type 6, 226 leaves):

$$\frac{1}{8\,b\,c^2}\left(-\left(\left(12\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Cos}[2\,(a+b\,x)]\,\text{Tan}[a+b\,x]\right)\Big/\right.\right.$$
$$\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]+\right.$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]-$$
$$\left.\left.3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\right]\text{Tan}[a+b\,x]^2\right)\right)-$$
$$\left.\text{Cot}[a+b\,x]\left(-2+\text{Csc}[a+b\,x]^2+\text{ArcTan}\left[\sqrt{-1+\text{Tan}[a+b\,x]^2}\right]\sqrt{-1+\text{Tan}[a+b\,x]^2}\right)\right)$$
$$\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}$$

Problem 631: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Cos}[2\,(a+b\,x)]}{(c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)])^{3/2}}\,dx$$

Optimal (type 3, 178 leaves, 8 steps):

$$-\frac{3\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{2\,b\,c^{3/2}}+\frac{9\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{4\,\sqrt{2}\,b\,c^{3/2}}-\frac{\text{Sin}[2a+2bx]}{4\,b\,(-c+c\,\text{Sec}[2a+2bx])^{3/2}}-\frac{3\,\text{Sin}[2a+2bx]}{4\,b\,c\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}$$

Result (type 6, 249 leaves):

$$\frac{1}{8\,b\,c^2}\Bigg(-2\,\text{Cot}[a+bx]-\text{Cot}[a+bx]\,\text{Csc}[a+bx]^2+4\,\text{Sin}[2\,(a+bx)]-3\,\text{ArcTan}\left[\sqrt{-1+\text{Tan}[a+bx]^2}\right]\text{Cot}[a+bx]\,\sqrt{-1+\text{Tan}[a+bx]^2}-\left(18\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+bx]^2,-\text{Cot}[a+bx]^2\right]\text{Cos}[2\,(a+bx)]\,\text{Tan}[a+bx]\right)\Big/\left(2\,\text{AppellF1}\left[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+bx]^2,-\text{Cot}[a+bx]^2\right]+\text{AppellF1}\left[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+bx]^2,-\text{Cot}[a+bx]^2\right]-3\,\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+bx]^2,-\text{Cot}[a+bx]^2\right]\text{Tan}[a+bx]^2\right)\Bigg)\sqrt{c\,\text{Tan}[a+bx]\,\text{Tan}[2\,(a+bx)]}$$

Problem 632: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Cos}[2\,(a+bx)]^2}{(c\,\text{Tan}[a+bx]\,\text{Tan}[2\,(a+bx)])^{3/2}}\,dx$$

Optimal (type 3, 234 leaves, 9 steps):

$$-\frac{19\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{8\,b\,c^{3/2}}+\frac{13\,\text{ArcTanh}\left[\frac{\sqrt{c}\,\text{Tan}[2a+2bx]}{\sqrt{2}\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}\right]}{4\,\sqrt{2}\,b\,c^{3/2}}-\frac{\text{Cos}[2a+2bx]\,\text{Sin}[2a+2bx]}{4\,b\,(-c+c\,\text{Sec}[2a+2bx])^{3/2}}-\frac{7\,\text{Sin}[2a+2bx]}{8\,b\,c\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}-\frac{\text{Cos}[2a+2bx]\,\text{Sin}[2a+2bx]}{2\,b\,c\,\sqrt{-c+c\,\text{Sec}[2a+2bx]}}$$

Result (type 6, 251 leaves):

$$\Bigg(\Big(-9\,\text{Cos}[a+b\,x]+4\,\text{Cos}[3\,(a+b\,x)]+\text{Cos}[5\,(a+b\,x)]\Big)\,\text{Csc}[a+b\,x]-\Big(114\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\Big]\,\text{Sin}[a+b\,x]^2\,\text{Tan}[a+b\,x]\Big)\Big/\Big(2\,\text{AppellF1}\Big[\frac{3}{2},-\frac{1}{2},2,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\Big]+\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2},1,\frac{5}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\Big]-3\,\text{AppellF1}\Big[\frac{1}{2},-\frac{1}{2},1,\frac{3}{2},\text{Cot}[a+b\,x]^2,-\text{Cot}[a+b\,x]^2\Big]\,\text{Tan}[a+b\,x]^2\Big)-7\,\text{ArcTan}\Big[\sqrt{-1+\text{Tan}[a+b\,x]^2}\Big]\,\sqrt{-1+\text{Tan}[a+b\,x]^2}\,\text{Tan}[2\,(a+b\,x)]\Bigg)\Big/\Big(16\,b\,c\,\sqrt{c\,\text{Tan}[a+b\,x]\,\text{Tan}[2\,(a+b\,x)]}\Big)$$

Problem 634: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Csc}[x]^2\,\text{Sec}[x]}{\sqrt{\text{Sin}[2\,x]}\,(-2+\text{Tan}[x])}\,dx$$

Optimal (type 3, 69 leaves, 6 steps):

$$\frac{\text{Cos}[x]}{2\,\sqrt{\text{Sin}[2\,x]}}+\frac{\text{Cos}[x]\,\text{Cot}[x]}{3\,\sqrt{\text{Sin}[2\,x]}}-\frac{5\,\text{ArcTanh}\Big[\frac{\sqrt{\text{Tan}[x]}}{\sqrt{2}}\Big]\,\text{Sin}[x]}{2\,\sqrt{2}\,\sqrt{\text{Sin}[2\,x]}\,\sqrt{\text{Tan}[x]}}$$

Result (type 4, 119 leaves):

$$\frac{1}{4}\sqrt{\text{Sin}[2\,x]}\left(\left(1+\frac{2\,\text{Cot}[x]}{3}\right)\text{Csc}[x]+5\,\sqrt{\frac{\text{Cos}[x]}{-2+2\,\text{Cos}[x]}}\left(\text{EllipticF}\Big[\text{ArcSin}\Big[\frac{1}{\sqrt{\text{Tan}[\frac{x}{2}]}}\Big],-1\Big]+\text{EllipticPi}\Big[-\frac{2}{-1+\sqrt{5}},-\text{ArcSin}\Big[\frac{1}{\sqrt{\text{Tan}[\frac{x}{2}]}}\Big],-1\Big]+\text{EllipticPi}\Big[\frac{1}{2}\,(-1+\sqrt{5}),-\text{ArcSin}\Big[\frac{1}{\sqrt{\text{Tan}[\frac{x}{2}]}}\Big],-1\Big]\right)\text{Sec}[x]\,\sqrt{\text{Tan}\Big[\frac{x}{2}\Big]}\right)$$

Problem 635: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Cos}[x]^2\,\text{Sin}[x]}{(\text{Sin}[x]^2-\text{Sin}[2\,x])\,\text{Sin}[2\,x]^{5/2}}\,dx$$

Optimal (type 3, 79 leaves, 6 steps):

$$\frac{\text{Cos}[x]^4\,\text{Sin}[x]}{3\,\text{Sin}[2\,x]^{5/2}}+\frac{\text{Cos}[x]^3\,\text{Sin}[x]^2}{2\,\text{Sin}[2\,x]^{5/2}}-\frac{5\,\text{ArcTanh}\left[\frac{\sqrt{\text{Tan}[x]}}{\sqrt{2}}\right]\,\text{Sin}[x]^5}{2\,\sqrt{2}\,\text{Sin}[2\,x]^{5/2}\,\text{Tan}[x]^{5/2}}$$

Result (type 4, 139 leaves):

$$-\left(\left(\text{Csc}[x]\,\left(2\,\text{Cos}[x]-\text{Sin}[x]\right)\,\sqrt{\text{Sin}[2\,x]}\right.\right.$$

$$\left(-\frac{1}{3}\,\left(3+2\,\text{Cot}[x]\right)\,\text{Csc}[x]-5\,\sqrt{\frac{\text{Cos}[x]}{-2+2\,\text{Cos}[x]}}\,\left(\text{EllipticF}\left[\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]+\right.\right.$$

$$\text{EllipticPi}\left[-\frac{2}{-1+\sqrt{5}},-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]+\text{EllipticPi}\left[\frac{1}{2}\,\left(-1+\sqrt{5}\right),\right.$$

$$\left.\left.\left.\left.-\text{ArcSin}\left[\frac{1}{\sqrt{\text{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]\right)\,\text{Sec}[x]\,\sqrt{\text{Tan}\left[\frac{x}{2}\right]}\right)\right)\Big/\left(16\,\left(-1+2\,\text{Cot}[x]\right)\right)\right)$$

Problem 636: Result unnecessarily involves higher level functions.

$$\int\frac{\text{Cos}[x]^3\,\text{Cos}[2\,x]}{\left(\text{Sin}[x]^2-\text{Sin}[2\,x]\right)\,\text{Sin}[2\,x]^{5/2}}\,dx$$

Optimal (type 3, 95 leaves, 6 steps):

$$\frac{\text{Cos}[x]^5}{5\,\text{Sin}[2\,x]^{5/2}}+\frac{\text{Cos}[x]^4\,\text{Sin}[x]}{6\,\text{Sin}[2\,x]^{5/2}}-\frac{3\,\text{Cos}[x]^3\,\text{Sin}[x]^2}{4\,\text{Sin}[2\,x]^{5/2}}+\frac{3\,\text{ArcTanh}\left[\frac{\sqrt{\text{Tan}[x]}}{\sqrt{2}}\right]\,\text{Sin}[x]^5}{4\,\sqrt{2}\,\text{Sin}[2\,x]^{5/2}\,\text{Tan}[x]^{5/2}}$$

Result (type 4, 188 leaves):

$$\frac{1}{960}\,\mathrm{Sec}[x]\,\sqrt{\mathrm{Sin}[2\,x]}\,\left(-114\,\mathrm{Cot}[x]+20\,\mathrm{Cot}[x]^2+24\,\mathrm{Cot}[x]\,\mathrm{Csc}[x]^2-\right.$$

$$45\,\sqrt{2}\,\sqrt{\frac{\mathrm{Cos}[x]}{-1+\mathrm{Cos}[x]}}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{1}{\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]\,\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}\,-$$

$$45\,\sqrt{2}\,\sqrt{\frac{\mathrm{Cos}[x]}{-1+\mathrm{Cos}[x]}}\,\mathrm{EllipticPi}\left[-\frac{2}{-1+\sqrt{5}},-\mathrm{ArcSin}\left[\frac{1}{\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]\,\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}\,-$$

$$\left.45\,\sqrt{2}\,\sqrt{\frac{\mathrm{Cos}[x]}{-1+\mathrm{Cos}[x]}}\,\mathrm{EllipticPi}\left[\frac{1}{2}\left(-1+\sqrt{5}\right),-\mathrm{ArcSin}\left[\frac{1}{\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}}\right],-1\right]\,\sqrt{\mathrm{Tan}\left[\frac{x}{2}\right]}\right)$$

Problem 638: Result more than twice size of optimal antiderivative.

$$\int\left(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\right)^3\,\left(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\right)\,dx$$

Optimal (type 3, 26 leaves, 1 step):

$$\frac{\left(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\right)^4}{4\,d}$$

Result (type 3, 938 leaves):

$$\Big(8\,b^4\,\mathrm{Cos}[c+d\,x]\,\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3\,\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)+$$
$$\Big(a^4\,\mathrm{Cos}[4\,c]\,\mathrm{Cos}[4\,d\,x]\,\mathrm{Cos}[c+d\,x]^5\,\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3$$
$$\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)+$$
$$\Big(16\,a\,b^2\,\mathrm{Cos}[c+d\,x]^3\,\mathrm{Sec}[c]\,\big(3\,a\,\mathrm{Cos}[c]+2\,b\,\mathrm{Sin}[c]\big)$$
$$\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3\,\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)-$$
$$\Big(4\,a^3\,\mathrm{Cos}[2\,d\,x]\,\mathrm{Cos}[c+d\,x]^5\,\big(a\,\mathrm{Cos}[2\,c]+4\,b\,\mathrm{Sin}[2\,c]\big)$$
$$\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3\,\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)+$$
$$\Big(32\,a\,b^3\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{Sec}[c]\,\mathrm{Sin}[d\,x]\,\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3$$
$$\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)+$$
$$\Big(32\,a^3\,b\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Sec}[c]\,\mathrm{Sin}[d\,x]\,\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3$$
$$\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)+$$
$$\Big(4\,a^3\,\mathrm{Cos}[c+d\,x]^5\,\big(-4\,b\,\mathrm{Cos}[2\,c]+a\,\mathrm{Sin}[2\,c]\big)\,\mathrm{Sin}[2\,d\,x]$$
$$\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3\,\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)-$$
$$\Big(a^4\,\mathrm{Cos}[c+d\,x]^5\,\mathrm{Sin}[4\,c]\,\mathrm{Sin}[4\,d\,x]\,\big(b\,\mathrm{Sec}[c+d\,x]+a\,\mathrm{Sin}[c+d\,x]\big)^3$$
$$\big(a\,\mathrm{Cos}[c+d\,x]+b\,\mathrm{Sec}[c+d\,x]\,\mathrm{Tan}[c+d\,x]\big)\Big)\Big/$$
$$\Big(d\,\big(3\,a\,\mathrm{Cos}[c+d\,x]+a\,\mathrm{Cos}[3\,c+3\,d\,x]+4\,b\,\mathrm{Sin}[c+d\,x]\big)\,\big(2\,b+a\,\mathrm{Sin}[2\,c+2\,d\,x]\big)^3\Big)$$

Problem 654: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[x]^3\,\big(a+b\,\mathrm{Cos}[x]^2\big)^3\,\mathrm{Sin}[x]\,dx$$

Optimal (type 3, 36 leaves, 4 steps):

$$\frac{a\,\big(a+b\,\mathrm{Cos}[x]^2\big)^4}{8\,b^2}-\frac{\big(a+b\,\mathrm{Cos}[x]^2\big)^5}{10\,b^2}$$

Result (type 3, 137 leaves):

$$\frac{1}{32}\left(-12 a^2 b \operatorname{Cos}[x]^4-8 a b^2 \operatorname{Cos}[x]^6-2 b^3 \operatorname{Cos}[x]^8-4 a^3 \operatorname{Cos}[2 x]-4 a^2 b \operatorname{Cos}[x]^3 \operatorname{Cos}[3 x]-a^3 \operatorname{Cos}[4 x]-\frac{1}{32} a b^2 (48 \operatorname{Cos}[2 x]+36 \operatorname{Cos}[4 x]+16 \operatorname{Cos}[6 x]+3 \operatorname{Cos}[8 x])-\frac{1}{320} b^3 (140 \operatorname{Cos}[2 x]+100 \operatorname{Cos}[4 x]+50 \operatorname{Cos}[6 x]+15 \operatorname{Cos}[8 x]+2 \operatorname{Cos}[10 x])\right)$$

Problem 657: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Cos}[x]^2 \operatorname{Sin}[x]}{\sqrt{1-\operatorname{Cos}[x]^6}}\, dx$$

Optimal (type 3, 9 leaves, 3 steps):

$$-\frac{1}{3} \operatorname{ArcSin}\left[\operatorname{Cos}[x]^3\right]$$

Result (type 4, 162 leaves):

$$-\left(\left(i \operatorname{Cos}[x]^2 \operatorname{EllipticPi}\left[\frac{3}{2}+\frac{i \sqrt{3}}{2}, i \operatorname{ArcSinh}\left[\sqrt{-\frac{2 i}{-3 i+\sqrt{3}}} \operatorname{Tan}[x]\right], \frac{3 i-\sqrt{3}}{3 i+\sqrt{3}}\right] \operatorname{Sin}[x] \sqrt{1-\frac{2 i \operatorname{Tan}[x]^2}{-3 i+\sqrt{3}}} \sqrt{1+\frac{2 i \operatorname{Tan}[x]^2}{3 i+\sqrt{3}}}\right) \Big/ \left(\sqrt{2} \sqrt{-\frac{i}{-3 i+\sqrt{3}}} \sqrt{1-\operatorname{Cos}[x]^6}\right)\right)$$

Problem 670: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \operatorname{Cos}[x] \sqrt{1+\operatorname{Csc}[x]}\, dx$$

Optimal (type 3, 21 leaves, 4 steps):

$$\operatorname{ArcTanh}\left[\sqrt{1+\operatorname{Csc}[x]}\right]+\sqrt{1+\operatorname{Csc}[x]} \operatorname{Sin}[x]$$

Result (type 6, 5067 leaves):

$$\operatorname{Sin}[x] \sqrt{\operatorname{Csc}[x] (1+\operatorname{Sin}[x])} - \left(4 \operatorname{Cos}\left[\frac{x}{4}\right]^3 \sqrt{1+\operatorname{Csc}[x]} \operatorname{Sin}\left[\frac{x}{4}\right] \left(\frac{\operatorname{Cos}\left[\frac{x}{2}\right] \sqrt{1+\operatorname{Csc}[x]}}{2 \left(\operatorname{Cos}\left[\frac{x}{2}\right]+\operatorname{Sin}\left[\frac{x}{2}\right]\right)}-\frac{\sqrt{1+\operatorname{Csc}[x]} \operatorname{Sin}\left[\frac{x}{2}\right]}{2 \left(\operatorname{Cos}\left[\frac{x}{2}\right]+\operatorname{Sin}\left[\frac{x}{2}\right]\right)}\right)\right.$$
$$\left(-\left(\left(75 \operatorname{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \operatorname{Tan}\left[\frac{x}{4}\right]^2, -\operatorname{Tan}\left[\frac{x}{4}\right]^2\right]\right) \Big/ \left(5 \operatorname{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \operatorname{Tan}\left[\frac{x}{4}\right]^2, -\operatorname{Tan}\left[\frac{x}{4}\right]^2\right]+2 \left(-2 \operatorname{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \operatorname{Tan}\left[\frac{x}{4}\right]^2, -\operatorname{Tan}\left[\frac{x}{4}\right]^2\right]+\operatorname{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \operatorname{Tan}\left[\frac{x}{4}\right]^2, -\operatorname{Tan}\left[\frac{x}{4}\right]^2\right]\right) \operatorname{Tan}\left[\frac{x}{4}\right]^2\right)\right)+\right.$$

$$\text{Tan}\Big[\frac{x}{4}\Big]\;\Bigg(\Bigg(70\,\text{AppellF1}\Big[\frac{3}{4},\frac{1}{2},1,\frac{7}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Bigg)\Big/\Bigg(7\,\text{AppellF1}\Big[\frac{3}{4},\frac{1}{2},1,$$

$$\frac{7}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2\,\Big(-2\,\text{AppellF1}\Big[\frac{7}{4},\frac{1}{2},2,\frac{11}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+$$

$$\text{AppellF1}\Big[\frac{7}{4},\frac{3}{2},1,\frac{11}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)+$$

$$\Bigg(27\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},1,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\,\text{Tan}\Big[\frac{x}{4}\Big]\Bigg)\Big/\Bigg(9\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},1,$$

$$\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2\,\Big(-2\,\text{AppellF1}\Big[\frac{9}{4},\frac{1}{2},2,\frac{13}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+$$

$$\text{AppellF1}\Big[\frac{9}{4},\frac{3}{2},1,\frac{13}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(15\,\Big(\text{Cos}\Big[\frac{x}{2}\Big]+\text{Sin}\Big[\frac{x}{2}\Big]\Big)\;\Bigg(\frac{1}{15\,\big(\text{Cos}\big[\frac{x}{2}\big]+\text{Sin}\big[\frac{x}{2}\big]\big)^2}\,4\,\text{Cos}\Big[\frac{x}{4}\Big]^3\sqrt{1+\text{Csc}[x]}$$

$$\text{Sin}\Big[\frac{x}{4}\Big]\;\Big(\frac{1}{2}\,\text{Cos}\Big[\frac{x}{2}\Big]-\frac{1}{2}\,\text{Sin}\Big[\frac{x}{2}\Big]\Big)$$

$$\Bigg(-\Bigg(\Bigg(75\,\text{AppellF1}\Big[\frac{1}{4},\frac{1}{2},1,\frac{5}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Bigg)\Big/\Bigg(5\,\text{AppellF1}\Big[\frac{1}{4},\frac{1}{2},1,\frac{5}{4},$$

$$\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2\,\Big(-2\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},2,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+$$

$$\text{AppellF1}\Big[\frac{5}{4},\frac{3}{2},1,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)\Bigg)+$$

$$\text{Tan}\Big[\frac{x}{4}\Big]\;\Bigg(\Bigg(70\,\text{AppellF1}\Big[\frac{3}{4},\frac{1}{2},1,\frac{7}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Bigg)\Big/\Bigg(7\,\text{AppellF1}\Big[$$

$$\frac{3}{4},\frac{1}{2},1,\frac{7}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2\,\Big(-2\,\text{AppellF1}\Big[\frac{7}{4},\frac{1}{2},2,\frac{11}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,$$

$$-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+\text{AppellF1}\Big[\frac{7}{4},\frac{3}{2},1,\frac{11}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)+$$

$$\Bigg(27\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},1,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\,\text{Tan}\Big[\frac{x}{4}\Big]\Bigg)\Big/\Bigg(9\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},$$

$$1,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2\,\Big(-2\,\text{AppellF1}\Big[\frac{9}{4},\frac{1}{2},2,\frac{13}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[$$

$$\frac{x}{4}\Big]^2\Big]+\text{AppellF1}\Big[\frac{9}{4},\frac{3}{2},1,\frac{13}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)\Bigg)\Bigg)-$$

$$\frac{1}{15\,\big(\text{Cos}\big[\frac{x}{2}\big]+\text{Sin}\big[\frac{x}{2}\big]\big)}\,\text{Cos}\Big[\frac{x}{4}\Big]^4\sqrt{1+\text{Csc}[x]}\;\Bigg(-\Bigg(\Bigg(75\,\text{AppellF1}\Big[\frac{1}{4},\frac{1}{2},1,\frac{5}{4},$$

$$\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Bigg)\Big/\Bigg(5\,\text{AppellF1}\Big[\frac{1}{4},\frac{1}{2},1,\frac{5}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+2$$

$$\Big(-2\,\text{AppellF1}\Big[\frac{5}{4},\frac{1}{2},2,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]+$$

$$\text{AppellF1}\Big[\frac{5}{4},\frac{3}{2},1,\frac{9}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{x}{4}\Big]^2\Bigg)\Bigg)+$$

$$\text{Tan}\Big[\frac{x}{4}\Big]\;\Bigg(\Bigg(70\,\text{AppellF1}\Big[\frac{3}{4},\frac{1}{2},1,\frac{7}{4},\text{Tan}\Big[\frac{x}{4}\Big]^2,-\text{Tan}\Big[\frac{x}{4}\Big]^2\Big]\Bigg)\Big/\Bigg(7\,\text{AppellF1}\Big[$$

$$\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{7}{4}, \frac{1}{2}, 2, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{7}{4}, \frac{3}{2}, 1, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right) +$$

$$\left(27\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Tan}\left[\frac{x}{4}\right]\right) \Big/ \left(9\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{9}{4}, \frac{1}{2}, 2, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{9}{4}, \frac{3}{2}, 1, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)\right)\right) +$$

$$\frac{1}{15\sqrt{1+\text{Csc}[x]}\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)} 2\,\text{Cos}\left[\frac{x}{4}\right]^3 \text{Cot}[x]\,\text{Csc}[x]\,\text{Sin}\left[\frac{x}{4}\right]$$

$$\left(-\left(\left(75\,\text{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right) \Big/ \left(5\,\text{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)\right) +$$

$$\text{Tan}\left[\frac{x}{4}\right]\left(\left(70\,\text{AppellF1}\left[\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right) \Big/ \left(7\,\text{AppellF1}\left[\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{7}{4}, \frac{1}{2}, 2, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{7}{4}, \frac{3}{2}, 1, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right) +$$

$$\left(27\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Tan}\left[\frac{x}{4}\right]\right) \Big/ \left(9\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{9}{4}, \frac{1}{2}, 2, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{9}{4}, \frac{3}{2}, 1, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)\right)\right) +$$

$$\frac{1}{5\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)} \text{Cos}\left[\frac{x}{4}\right]^2 \sqrt{1+\text{Csc}[x]}\,\text{Sin}\left[\frac{x}{4}\right]^2$$

$$\left(-\left(\left(75\,\text{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right) \Big/ \left(5\,\text{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)\right) +$$

$$\text{Tan}\left[\frac{x}{4}\right]\left(\left(70\,\text{AppellF1}\left[\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\right) \Big/ \left(7\,\text{AppellF1}\left[\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2\left(-2\,\text{AppellF1}\left[\frac{7}{4}, \frac{1}{2}, 2, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2,\right.\right.\right.\right.$$

$$-\text{Tan}\left[\frac{x}{4}\right]^2\Big] + \text{AppellF1}\left[\frac{7}{4}, \frac{3}{2}, 1, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \text{Tan}\left[\frac{x}{4}\right]^2\Big) +$$

$$\left(27\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Tan}\left[\frac{x}{4}\right]\right) \Big/$$

$$\Big(9\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] +$$

$$2\,\Big(-2\,\text{AppellF1}\left[\frac{9}{4}, \frac{1}{2}, 2, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] +$$

$$\text{AppellF1}\left[\frac{9}{4}, \frac{3}{2}, 1, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \text{Tan}\left[\frac{x}{4}\right]^2\Big)\Big)\Big) -$$

$$\frac{1}{15\left(\text{Cos}\left[\frac{x}{2}\right] + \text{Sin}\left[\frac{x}{2}\right]\right)} 4\,\text{Cos}\left[\frac{x}{4}\right]^3 \sqrt{1 + \text{Csc}[x]}\ \text{Sin}\left[\frac{x}{4}\right]$$

$$\Big(-\Big(\Big(75\,\Big(-\frac{1}{10}\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right] +$$

$$\frac{1}{20}\,\text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right]\Big)\Big)\Big/$$

$$\Big(5\,\text{AppellF1}\left[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + 2$$

$$\Big(-2\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] +$$

$$\text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \text{Tan}\left[\frac{x}{4}\right]^2\Big)\Big) +$$

$$\frac{1}{4}\,\text{Sec}\left[\frac{x}{4}\right]^2 \Big(\Big(70\,\text{AppellF1}\left[\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \Big/ \Big(7\,\text{AppellF1}\Big[$$

$$\frac{3}{4}, \frac{1}{2}, 1, \frac{7}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\Big] + 2\,\Big(-2\,\text{AppellF1}\Big[\frac{7}{4}, \frac{1}{2}, 2, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2,$$

$$-\text{Tan}\left[\frac{x}{4}\right]^2\Big] + \text{AppellF1}\left[\frac{7}{4}, \frac{3}{2}, 1, \frac{11}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \text{Tan}\left[\frac{x}{4}\right]^2\Big) +$$

$$\left(27\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Tan}\left[\frac{x}{4}\right]\right) \Big/$$

$$\Big(9\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] +$$

$$2\,\Big(-2\,\text{AppellF1}\left[\frac{9}{4}, \frac{1}{2}, 2, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] + \text{AppellF1}\Big[\frac{9}{4}, \frac{3}{2}, 1,$$

$$\frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\Big]\Big) \text{Tan}\left[\frac{x}{4}\right]^2\Big)\Big) + \Big(75\,\text{AppellF1}\Big[\frac{1}{4}, \frac{1}{2}, 1, \frac{5}{4},$$

$$\text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\Big] \Big(\Big(-2\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] +$$

$$\text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right]\Big) \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right] + 5$$

$$\Big(-\frac{1}{10}\,\text{AppellF1}\left[\frac{5}{4}, \frac{1}{2}, 2, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right] +$$

$$\frac{1}{20}\,\text{AppellF1}\left[\frac{5}{4}, \frac{3}{2}, 1, \frac{9}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right]\Big) + 2$$

$$\text{Tan}\left[\frac{x}{4}\right]^2 \Big(-\frac{5}{18}\,\text{AppellF1}\left[\frac{9}{4}, \frac{3}{2}, 2, \frac{13}{4}, \text{Tan}\left[\frac{x}{4}\right]^2, -\text{Tan}\left[\frac{x}{4}\right]^2\right] \text{Sec}\left[\frac{x}{4}\right]^2 \text{Tan}\left[\frac{x}{4}\right] +$$

$$\frac{5}{12}\,\text{AppellF1}\left[\frac{9}{4},\,\frac{5}{2},\,1,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\,-$$

$$2\,\Bigg(-\frac{5}{9}\,\text{AppellF1}\left[\frac{9}{4},\,\frac{1}{2},\,3,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\,+$$

$$\frac{5}{36}\,\text{AppellF1}\left[\frac{9}{4},\,\frac{3}{2},\,2,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{1}{4},\,\frac{1}{2},\,1,\,\frac{5}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+2\,\Bigg(-2\,\text{AppellF1}\Bigg[\frac{5}{4},$$

$$\frac{1}{2},\,2,\,\frac{9}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\Bigg]+$$

$$\text{AppellF1}\left[\frac{5}{4},\,\frac{3}{2},\,1,\,\frac{9}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{x}{4}\right]^2\Bigg)^2+$$

$$\text{Tan}\left[\frac{x}{4}\right]\,\Bigg(\Bigg(70\,\Bigg(-\frac{3}{14}\,\text{AppellF1}\left[\frac{7}{4},\,\frac{1}{2},\,2,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]+$$

$$\frac{3}{28}\,\text{AppellF1}\left[\frac{7}{4},\,\frac{3}{2},\,1,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(7\,\text{AppellF1}\left[\frac{3}{4},\,\frac{1}{2},\,1,\,\frac{7}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+2\,\Bigg(-2\,\text{AppellF1}\Bigg[\frac{7}{4},\,\frac{1}{2},\,2,\,\frac{11}{4},$$

$$\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\Bigg]+\text{AppellF1}\left[\frac{7}{4},\,\frac{3}{2},\,1,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{x}{4}\right]^2\Bigg)+\Bigg(27\,\text{AppellF1}\left[\frac{5}{4},\,\frac{1}{2},\,1,\,\frac{9}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]$$

$$\text{Sec}\left[\frac{x}{4}\right]^2\Bigg)\Bigg/\Bigg(4\,\Bigg(9\,\text{AppellF1}\left[\frac{5}{4},\,\frac{1}{2},\,1,\,\frac{9}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+$$

$$2\,\Bigg(-2\,\text{AppellF1}\left[\frac{9}{4},\,\frac{1}{2},\,2,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+$$

$$\text{AppellF1}\left[\frac{9}{4},\,\frac{3}{2},\,1,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{x}{4}\right]^2\Bigg)\Bigg)+$$

$$\Bigg(27\,\text{Tan}\left[\frac{x}{4}\right]\,\Bigg(-\frac{5}{18}\,\text{AppellF1}\left[\frac{9}{4},\,\frac{1}{2},\,2,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]+$$

$$\frac{5}{36}\,\text{AppellF1}\left[\frac{9}{4},\,\frac{3}{2},\,1,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{5}{4},\,\frac{1}{2},\,1,\,\frac{9}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+2\,\Bigg(-2\,\text{AppellF1}\Bigg[\frac{9}{4},\,\frac{1}{2},\,2,\,\frac{13}{4},$$

$$\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\Bigg]+\text{AppellF1}\left[\frac{9}{4},\,\frac{3}{2},\,1,\,\frac{13}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{x}{4}\right]^2\Bigg)-\Bigg(70\,\text{AppellF1}\left[\frac{3}{4},\,\frac{1}{2},\,1,\,\frac{7}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]$$

$$\Bigg(\Bigg(-2\,\text{AppellF1}\left[\frac{7}{4},\,\frac{1}{2},\,2,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+$$

$$\text{AppellF1}\left[\frac{7}{4},\,\frac{3}{2},\,1,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\Bigg)\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]+$$

$$7\,\Bigg(-\frac{3}{14}\,\text{AppellF1}\left[\frac{7}{4},\,\frac{1}{2},\,2,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]+$$

$$\frac{3}{28}\,\text{AppellF1}\left[\frac{7}{4},\,\frac{3}{2},\,1,\,\frac{11}{4},\,\text{Tan}\left[\frac{x}{4}\right]^2,\,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\,\text{Sec}\left[\frac{x}{4}\right]^2\,\text{Tan}\left[\frac{x}{4}\right]\Bigg)+$$

$$2\,\text{Tan}\left[\frac{x}{4}\right]^2 \left(-\frac{7}{22}\,\text{AppellF1}\left[\frac{11}{4},\frac{3}{2},2,\frac{15}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2\right.$$

$$\text{Tan}\left[\frac{x}{4}\right]+\frac{21}{44}\,\text{AppellF1}\left[\frac{11}{4},\frac{5}{2},1,\frac{15}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2$$

$$\text{Tan}\left[\frac{x}{4}\right]-2\left(-\frac{7}{11}\,\text{AppellF1}\left[\frac{11}{4},\frac{1}{2},3,\frac{15}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]+\frac{7}{44}\,\text{AppellF1}\left[\frac{11}{4},\frac{3}{2},2,\frac{15}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]\right)\right)\right)\right)\Big/\left(7\,\text{AppellF1}\left[\frac{3}{4},\frac{1}{2},1,\frac{7}{4},\text{Tan}\left[\frac{x}{4}\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{x}{4}\right]^2\right]+2\left(-2\,\text{AppellF1}\left[\frac{7}{4},\frac{1}{2},2,\frac{11}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+\right.$$

$$\left.\left.\text{AppellF1}\left[\frac{7}{4},\frac{3}{2},1,\frac{11}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)^2-$$

$$\left(27\,\text{AppellF1}\left[\frac{5}{4},\frac{1}{2},1,\frac{9}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Tan}\left[\frac{x}{4}\right]\right.$$

$$\left(\left(-2\,\text{AppellF1}\left[\frac{9}{4},\frac{1}{2},2,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+\right.\right.$$

$$\left.\text{AppellF1}\left[\frac{9}{4},\frac{3}{2},1,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]+$$

$$9\left(-\frac{5}{18}\,\text{AppellF1}\left[\frac{9}{4},\frac{1}{2},2,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]+\right.$$

$$\left.\frac{5}{36}\,\text{AppellF1}\left[\frac{9}{4},\frac{3}{2},1,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]\right)+$$

$$2\,\text{Tan}\left[\frac{x}{4}\right]^2\left(-\frac{9}{26}\,\text{AppellF1}\left[\frac{13}{4},\frac{3}{2},2,\frac{17}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2\right.$$

$$\text{Tan}\left[\frac{x}{4}\right]+\frac{27}{52}\,\text{AppellF1}\left[\frac{13}{4},\frac{5}{2},1,\frac{17}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\text{Sec}\left[\frac{x}{4}\right]^2$$

$$\text{Tan}\left[\frac{x}{4}\right]-2\left(-\frac{9}{13}\,\text{AppellF1}\left[\frac{13}{4},\frac{1}{2},3,\frac{17}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\right.$$

$$\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]+\frac{9}{52}\,\text{AppellF1}\left[\frac{13}{4},\frac{3}{2},2,\frac{17}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]$$

$$\left.\left.\left.\left.\text{Sec}\left[\frac{x}{4}\right]^2\text{Tan}\left[\frac{x}{4}\right]\right)\right)\right)\right)\Big/\left(9\,\text{AppellF1}\left[\frac{5}{4},\frac{1}{2},1,\frac{9}{4},\text{Tan}\left[\frac{x}{4}\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{x}{4}\right]^2\right]+2\left(-2\,\text{AppellF1}\left[\frac{9}{4},\frac{1}{2},2,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]+\right.$$

$$\left.\left.\left.\left.\left.\text{AppellF1}\left[\frac{9}{4},\frac{3}{2},1,\frac{13}{4},\text{Tan}\left[\frac{x}{4}\right]^2,-\text{Tan}\left[\frac{x}{4}\right]^2\right]\right)\text{Tan}\left[\frac{x}{4}\right]^2\right)^2\right)\right)\right)\right)$$

Problem 673: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[x]}{\sqrt{2\,\text{Sin}[x]+\text{Sin}[x]^2}}\,dx$$

Optimal (type 3, 19 leaves, 3 steps):

$$2\,\text{ArcTanh}\left[\frac{\text{Sin}[x]}{\sqrt{2\,\text{Sin}[x]+\text{Sin}[x]^2}}\right]$$

Result (type 3, 40 leaves):

$$\frac{2\,\text{ArcSinh}\left[\frac{\sqrt{\text{Sin}[x]}}{\sqrt{2}}\right]\sqrt{\text{Sin}[x]}\,\sqrt{2+\text{Sin}[x]}}{\sqrt{\text{Sin}[x]\,(2+\text{Sin}[x])}}$$

Problem 676: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\,\text{Sec}[\text{Sin}[x]]\,dx$$

Optimal (type 3, 4 leaves, 2 steps):

$$\text{ArcTanh}[\text{Sin}[\text{Sin}[x]]]$$

Result (type 3, 37 leaves):

$$-\text{Log}\left[\text{Cos}\left[\frac{\text{Sin}[x]}{2}\right]-\text{Sin}\left[\frac{\text{Sin}[x]}{2}\right]\right]+\text{Log}\left[\text{Cos}\left[\frac{\text{Sin}[x]}{2}\right]+\text{Sin}\left[\frac{\text{Sin}[x]}{2}\right]\right]$$

Problem 677: Result more than twice size of optimal antiderivative.

$$\int \text{Cos}[x]\,\text{Sin}[x]^3\,\left(a+b\,\text{Sin}[x]^2\right)^3\,dx$$

Optimal (type 3, 36 leaves, 4 steps):

$$-\frac{a\,\left(a+b\,\text{Sin}[x]^2\right)^4}{8\,b^2}+\frac{\left(a+b\,\text{Sin}[x]^2\right)^5}{10\,b^2}$$

Result (type 3, 128 leaves):

$$\frac{1}{10\,240}\left(-20\,\left(64\,a^3+24\,a\,b^2+7\,b^3\right)\,\text{Cos}[2\,x]+20\,\left(16\,a^3+18\,a\,b^2+5\,b^3\right)\,\text{Cos}[4\,x]+\right.$$
$$b\,\left(-10\,b\,\left(16\,a+5\,b\right)\,\text{Cos}[6\,x]+15\,b\,\left(2\,a+b\right)\,\text{Cos}[8\,x]-2\,b^2\,\text{Cos}[10\,x]+\right.$$
$$\left.\left.3840\,a^2\,\text{Sin}[x]^4+2560\,a\,b\,\text{Sin}[x]^6+640\,b^2\,\text{Sin}[x]^8-1280\,a^2\,\text{Sin}[x]^3\,\text{Sin}[3\,x]\right)\right)$$

Problem 691: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[x]^2}{1-\text{Tan}[x]^2}\,dx$$

Optimal (type 3, 11 leaves, 2 steps):

$$\frac{1}{2}\,\text{ArcTanh}[2\,\text{Cos}[x]\,\text{Sin}[x]]$$

Result (type 3, 23 leaves):

$$-\frac{1}{2}\,\text{Log}[\text{Cos}[x]-\text{Sin}[x]]+\frac{1}{2}\,\text{Log}[\text{Cos}[x]+\text{Sin}[x]]$$

Problem 705: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[x]^2\,\text{Tan}[x]^6\,\left(1+\text{Tan}[x]^2\right)^3\,dx$$

Optimal (type 3, 33 leaves, 4 steps):

$$\frac{\text{Tan}[x]^7}{7}+\frac{\text{Tan}[x]^9}{3}+\frac{3\,\text{Tan}[x]^{11}}{11}+\frac{\text{Tan}[x]^{13}}{13}$$

Result (type 3, 67 leaves):

$$-\frac{16\,\text{Tan}[x]}{3003}-\frac{8\,\text{Sec}[x]^2\,\text{Tan}[x]}{3003}-\frac{2\,\text{Sec}[x]^4\,\text{Tan}[x]}{1001}-\frac{5\,\text{Sec}[x]^6\,\text{Tan}[x]}{3003}+\frac{53}{429}\,\text{Sec}[x]^8\,\text{Tan}[x]-\frac{27}{143}\,\text{Sec}[x]^{10}\,\text{Tan}[x]+\frac{1}{13}\,\text{Sec}[x]^{12}\,\text{Tan}[x]$$

Problem 709: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[x]^2}{\sqrt{4-\text{Sec}[x]^2}}\,dx$$

Optimal (type 3, 9 leaves, 2 steps):

$$\text{ArcSin}\left[\frac{\text{Tan}[x]}{\sqrt{3}}\right]$$

Result (type 3, 43 leaves):

$$\frac{\text{ArcTan}\left[\frac{\text{Sin}[x]}{\sqrt{1+2\,\text{Cos}[2\,x]}}\right]\,\sqrt{1+2\,\text{Cos}[2\,x]}\,\,\text{Sec}[x]}{\sqrt{4-\text{Sec}[x]^2}}$$

Problem 710: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[x]^2}{\sqrt{1-4\,\text{Tan}[x]^2}}\,dx$$

Optimal (type 3, 9 leaves, 2 steps):

$$\frac{1}{2}\,\text{ArcSin}[2\,\text{Tan}[x]]$$

Result (type 3, 52 leaves):

$$\frac{\text{ArcTan}\left[\frac{2\,\sqrt{2}\,\,\text{Sin}[x]}{\sqrt{-3+5\,\text{Cos}[2\,x]}}\right]\,\sqrt{-3+5\,\text{Cos}[2\,x]}\,\,\text{Sec}[x]}{2\,\sqrt{2-8\,\text{Tan}[x]^2}}$$

Problem 711: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[x]^2}{\sqrt{-4+\text{Tan}[x]^2}}\,dx$$

Optimal (type 3, 14 leaves, 3 steps):

$$\text{ArcTanh}\left[\frac{\text{Tan}[x]}{\sqrt{-4+\text{Tan}[x]^2}}\right]$$

Result (type 3, 51 leaves):

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2}\,\text{Sin}[x]}{\sqrt{3+5\,\text{Cos}[2\,x]}}\right]\sqrt{3+5\,\text{Cos}[2\,x]}\;\text{Sec}[x]}{\sqrt{2}\,\sqrt{-4+\text{Tan}[x]^2}}$$

Problem 712: Result more than twice size of optimal antiderivative.

$$\int \sqrt{1-\text{Cot}[x]^2}\;\text{Sec}[x]^2\,dx$$

Optimal (type 3, 19 leaves, 3 steps):

$$\text{ArcSin}[\text{Cot}[x]]+\sqrt{1-\text{Cot}[x]^2}\;\text{Tan}[x]$$

Result (type 3, 52 leaves):

$$\left(-\text{ArcTan}\left[\frac{\text{Cos}[x]}{\sqrt{-\text{Cos}[2\,x]}}\right]\text{Cos}[x]\,\sqrt{-\text{Cos}[2\,x]}+\text{Cos}[2\,x]\right)\sqrt{1-\text{Cot}[x]^2}\;\text{Sec}[2\,x]\;\text{Tan}[x]$$

Problem 728: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[x]\;\text{Tan}[x]}{\sqrt{4+\text{Sec}[x]^2}}\,dx$$

Optimal (type 3, 5 leaves, 3 steps):

$$\text{ArcCsch}[2\,\text{Cos}[x]]$$

Result (type 3, 38 leaves):

$$\frac{\text{ArcTanh}\left[\sqrt{3+2\,\text{Cos}[2\,x]}\right]\sqrt{3+2\,\text{Cos}[2\,x]}\;\text{Sec}[x]}{\sqrt{4+\text{Sec}[x]^2}}$$

Problem 738: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cot}[6\,x]\;\text{Csc}[6\,x]}{\left(5-11\,\text{Csc}[6\,x]^2\right)^2}\,dx$$

Optimal (type 3, 43 leaves, 3 steps):

$$-\frac{\text{ArcTanh}\left[\sqrt{\frac{5}{11}}\ \text{Sin}[6\,x]\right]}{60\,\sqrt{55}}+\frac{\text{Sin}[6\,x]}{60\,\left(11-5\,\text{Sin}[6\,x]^2\right)}$$

Result (type 3, 97 leaves):

$$\left(17\,\sqrt{55}\,\left(\text{Log}\left[\sqrt{55}-5\,\text{Sin}[6\,x]\right]-\text{Log}\left[\sqrt{55}+5\,\text{Sin}[6\,x]\right]\right)+5\,\sqrt{55}\,\text{Cos}[12\,x]\,\left(\text{Log}\left[\sqrt{55}-5\,\text{Sin}[6\,x]\right]-\text{Log}\left[\sqrt{55}+5\,\text{Sin}[6\,x]\right]\right)+220\,\text{Sin}[6\,x]\right)\Big/\left(6600\,\left(17+5\,\text{Cos}[12\,x]\right)\right)$$

Problem 759: Result more than twice size of optimal antiderivative.

$$\int\left(\text{Cos}[x]^{12}\,\text{Sin}[x]^{10}-\text{Cos}[x]^{10}\,\text{Sin}[x]^{12}\right)\,dx$$

Optimal (type 3, 12 leaves, ? steps):

$$\frac{1}{11}\,\text{Cos}[x]^{11}\,\text{Sin}[x]^{11}$$

Result (type 3, 49 leaves):

$$\frac{21\,\text{Sin}[2\,x]}{1048576}-\frac{15\,\text{Sin}[6\,x]}{1048576}+\frac{15\,\text{Sin}[10\,x]}{2097152}-\frac{5\,\text{Sin}[14\,x]}{2097152}+\frac{\text{Sin}[18\,x]}{2097152}-\frac{\text{Sin}[22\,x]}{23068672}$$

Problem 779: Result more than twice size of optimal antiderivative.

$$\int 3\,x^2\,\text{Cos}\left[7+x^3\right]\,dx$$

Optimal (type 3, 6 leaves, 3 steps):

$$\text{Sin}\left[7+x^3\right]$$

Result (type 3, 23 leaves):

$$3\,\left(\frac{1}{3}\,\text{Cos}\left[x^3\right]\,\text{Sin}[7]+\frac{1}{3}\,\text{Cos}[7]\,\text{Sin}\left[x^3\right]\right)$$

Problem 781: Result more than twice size of optimal antiderivative.

$$\int x\,\text{Sin}\left[1+x^2\right]\,dx$$

Optimal (type 3, 10 leaves, 2 steps):

$$-\frac{1}{2}\,\text{Cos}\left[1+x^2\right]$$

Result (type 3, 21 leaves):

$$-\frac{1}{2}\,\text{Cos}[1]\,\text{Cos}\left[x^2\right]+\frac{1}{2}\,\text{Sin}[1]\,\text{Sin}\left[x^2\right]$$

Problem 782: Result more than twice size of optimal antiderivative.

$$\int x \operatorname{Cos}\left[1+x^2\right] \, dx$$

Optimal (type 3, 10 leaves, 2 steps):

$$\frac{1}{2} \operatorname{Sin}\left[1+x^2\right]$$

Result (type 3, 21 leaves):

$$\frac{1}{2} \operatorname{Cos}\left[x^2\right] \operatorname{Sin}[1]+\frac{1}{2} \operatorname{Cos}[1] \operatorname{Sin}\left[x^2\right]$$

Problem 784: Result more than twice size of optimal antiderivative.

$$\int x^2 \operatorname{Sin}\left[1+x^3\right] \, dx$$

Optimal (type 3, 10 leaves, 2 steps):

$$-\frac{1}{3} \operatorname{Cos}\left[1+x^3\right]$$

Result (type 3, 21 leaves):

$$-\frac{1}{3} \operatorname{Cos}[1] \operatorname{Cos}\left[x^3\right]+\frac{1}{3} \operatorname{Sin}[1] \operatorname{Sin}\left[x^3\right]$$

Problem 802: Result more than twice size of optimal antiderivative.

$$\int \operatorname{Sec}[x] \, (1-\operatorname{Sin}[x]) \, dx$$

Optimal (type 3, 5 leaves, 2 steps):

$$\operatorname{Log}[1+\operatorname{Sin}[x]]$$

Result (type 3, 36 leaves):

$$\operatorname{Log}[\operatorname{Cos}[x]]-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{x}{2}\right]-\operatorname{Sin}\left[\frac{x}{2}\right]\right]+\operatorname{Log}\left[\operatorname{Cos}\left[\frac{x}{2}\right]+\operatorname{Sin}\left[\frac{x}{2}\right]\right]$$

Problem 803: Result more than twice size of optimal antiderivative.

$$\int (1+\operatorname{Cos}[x]) \operatorname{Csc}[x] \, dx$$

Optimal (type 3, 7 leaves, 2 steps):

$$\operatorname{Log}[1-\operatorname{Cos}[x]]$$

Result (type 3, 20 leaves):

$$-\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]+\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]+\text{Log}[\text{Sin}[x]]$$

Problem 805: Result more than twice size of optimal antiderivative.

$$\int \text{Csc}[2\,x]\,(\text{Cos}[x]+\text{Sin}[x])\,dx$$

Optimal (type 3, 15 leaves, 6 steps):

$$-\frac{1}{2}\text{ArcTanh}[\text{Cos}[x]]+\frac{1}{2}\text{ArcTanh}[\text{Sin}[x]]$$

Result (type 3, 61 leaves):

$$-\frac{1}{2}\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]\right]-\frac{1}{2}\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]+\frac{1}{2}\text{Log}\left[\text{Sin}\left[\frac{x}{2}\right]\right]+\frac{1}{2}\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]$$

Problem 806: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[x]\,(-3+2\,\text{Sin}[x])}{2-3\,\text{Sin}[x]+\text{Sin}[x]^2}\,dx$$

Optimal (type 3, 11 leaves, 2 steps):

$$\text{Log}\left[2-3\,\text{Sin}[x]+\text{Sin}[x]^2\right]$$

Result (type 3, 26 leaves):

$$2\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]+\text{Log}[2-\text{Sin}[x]]$$

Problem 807: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[x]^2\,\text{Sin}[x]}{5+\text{Cos}[x]^2}\,dx$$

Optimal (type 3, 20 leaves, 3 steps):

$$\sqrt{5}\,\text{ArcTan}\left[\frac{\text{Cos}[x]}{\sqrt{5}}\right]-\text{Cos}[x]$$

Result (type 3, 82 leaves):

$$\frac{1}{20}\left(-\sqrt{5}\,\text{ArcTan}\left[\frac{\text{Cos}[x]}{\sqrt{5}}\right]+21\sqrt{5}\,\text{ArcTan}\left[\frac{1}{\sqrt{5}}-\sqrt{\frac{6}{5}}\,\text{Tan}\left[\frac{x}{2}\right]\right]+21\sqrt{5}\,\text{ArcTan}\left[\frac{1}{\sqrt{5}}+\sqrt{\frac{6}{5}}\,\text{Tan}\left[\frac{x}{2}\right]\right]-20\,\text{Cos}[x]\right)$$

Problem 825: Result more than twice size of optimal antiderivative.

$$\int x \operatorname{Sec}[5 - x^2]\, dx$$

Optimal (type 3, 13 leaves, 2 steps):

$$-\frac{1}{2} \operatorname{ArcTanh}[\operatorname{Sin}[5 - x^2]]$$

Result (type 3, 63 leaves):

$$\frac{1}{2} \operatorname{Log}\left[\operatorname{Cos}\left[\frac{5}{2} - \frac{x^2}{2}\right] - \operatorname{Sin}\left[\frac{5}{2} - \frac{x^2}{2}\right]\right] - \frac{1}{2} \operatorname{Log}\left[\operatorname{Cos}\left[\frac{5}{2} - \frac{x^2}{2}\right] + \operatorname{Sin}\left[\frac{5}{2} - \frac{x^2}{2}\right]\right]$$

Problem 826: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Csc}\left[\frac{1}{x}\right]}{x^2}\, dx$$

Optimal (type 3, 5 leaves, 2 steps):

$$\operatorname{ArcTanh}\left[\operatorname{Cos}\left[\frac{1}{x}\right]\right]$$

Result (type 3, 21 leaves):

$$\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2 x}\right]\right] - \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2 x}\right]\right]$$

Problem 834: Result more than twice size of optimal antiderivative.

$$\int 35 \operatorname{Cos}[x]^3 \operatorname{Sin}[x]^4\, dx$$

Optimal (type 3, 13 leaves, 4 steps):

$$7 \operatorname{Sin}[x]^5 - 5 \operatorname{Sin}[x]^7$$

Result (type 3, 33 leaves):

$$35 \left(\frac{3 \operatorname{Sin}[x]}{64} - \frac{1}{64} \operatorname{Sin}[3 x] - \frac{1}{320} \operatorname{Sin}[5 x] + \frac{1}{448} \operatorname{Sin}[7 x]\right)$$

Problem 850: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Tan}[c + d x]}{\sqrt{a \operatorname{Sin}[c + d x]^2}}\, dx$$

Optimal (type 3, 30 leaves, 3 steps):

$$\frac{\text{ArcTanh}\left[\frac{\sqrt{a\,\text{Sin}[c+d\,x]^2}}{\sqrt{a}}\right]}{\sqrt{a}\,d}$$

Result (type 3, 73 leaves):

$$\left(\left(-\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\right.$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(d\,\sqrt{a\,\text{Sin}[c+d\,x]^2}\right)$$

Problem 861: Result more than twice size of optimal antiderivative.

$$\int \text{Sec}[x]\,\sqrt{\text{Sec}[x]+\text{Tan}[x]}\,dx$$

Optimal (type 3, 13 leaves, 4 steps):

$$2\,\sqrt{\text{Sec}[x]\,(1+\text{Sin}[x])}$$

Result (type 3, 37 leaves):

$$2\,\sqrt{\frac{\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]}{\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]}}$$

Problem 885: Result more than twice size of optimal antiderivative.

$$\int (-\text{Cos}[x]+\text{Sin}[x])\,(\text{Cos}[x]+\text{Sin}[x])^5\,dx$$

Optimal (type 3, 11 leaves, 1 step):

$$-\frac{1}{6}\,(\text{Cos}[x]+\text{Sin}[x])^6$$

Result (type 3, 25 leaves):

$$\frac{1}{4}\,\text{Cos}[4\,x]-\frac{5}{8}\,\text{Sin}[2\,x]+\frac{1}{24}\,\text{Sin}[6\,x]$$

Problem 894: Result more than twice size of optimal antiderivative.

$$\int \text{Sin}[x]\,\text{Tan}[x]^5\,dx$$

Optimal (type 3, 34 leaves, 5 steps):

$$\frac{15}{8}\,\text{ArcTanh}[\text{Sin}[x]]-\frac{15\,\text{Sin}[x]}{8}-\frac{5}{8}\,\text{Sin}[x]\,\text{Tan}[x]^2+\frac{1}{4}\,\text{Sin}[x]\,\text{Tan}[x]^4$$

Result (type 3, 113 leaves):

$$\frac{1}{16}\left(-30\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right]+30\,\text{Log}\left[\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right]+\frac{1}{\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)^4}-\frac{9}{\left(\text{Cos}\left[\frac{x}{2}\right]-\text{Sin}\left[\frac{x}{2}\right]\right)^2}-\frac{1}{\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^4}+\frac{9}{\left(\text{Cos}\left[\frac{x}{2}\right]+\text{Sin}\left[\frac{x}{2}\right]\right)^2}-16\,\text{Sin}[x]\right)$$

Problem 904: Result more than twice size of optimal antiderivative.

$$\int x\,\text{Sec}[1+x]\,\text{Tan}[1+x]\,dx$$

Optimal (type 3, 14 leaves, 2 steps):

$$-\text{ArcTanh}[\text{Sin}[1+x]]+x\,\text{Sec}[1+x]$$

Result (type 3, 47 leaves):

$$\text{Log}\left[\text{Cos}\left[\frac{1+x}{2}\right]-\text{Sin}\left[\frac{1+x}{2}\right]\right]-\text{Log}\left[\text{Cos}\left[\frac{1+x}{2}\right]+\text{Sin}\left[\frac{1+x}{2}\right]\right]+x\,\text{Sec}[1+x]$$

Problem 906: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\text{Sin}[2x]}{\sqrt{9-\text{Cos}[x]^4}}\,dx$$

Optimal (type 3, 11 leaves, 5 steps):

$$-\text{ArcSin}\left[\frac{\text{Cos}[x]^2}{3}\right]$$

Result (type 3, 26 leaves):

$$i\,\text{Log}\left[i\,\text{Cos}[x]^2+\sqrt{9-\text{Cos}[x]^4}\right]$$

Problem 910: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{-1+\text{Sec}[x]}{1-\text{Tan}[x]}\,dx$$

Optimal (type 3, 37 leaves, 6 steps):

$$-\frac{x}{2}+\frac{\text{ArcTanh}\left[\frac{\text{Cos}[x]\,(1+\text{Tan}[x])}{\sqrt{2}}\right]}{\sqrt{2}}+\frac{1}{2}\,\text{Log}[\text{Cos}[x]-\text{Sin}[x]]$$

Result (type 3, 40 leaves):

$$\frac{1}{2}\left(-x+(2-2\,i)\,(-1)^{1/4}\,\text{ArcTanh}\left[\frac{1+\text{Tan}\left[\frac{x}{2}\right]}{\sqrt{2}}\right]+\text{Log}[\text{Cos}[x]-\text{Sin}[x]]\right)$$

Problem 912: Result unnecessarily involves higher level functions.

$$\int \frac{\text{Cos}[x] + \text{Sin}[x]}{\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]}}\, dx$$

Optimal (type 3, 57 leaves, ? steps):

$$-\sqrt{2}\ \text{ArcTan}\left[1 - \frac{\sqrt{2}\ \sqrt{\text{Sin}[x]}}{\sqrt{\text{Cos}[x]}}\right] + \sqrt{2}\ \text{ArcTan}\left[1 + \frac{\sqrt{2}\ \sqrt{\text{Sin}[x]}}{\sqrt{\text{Cos}[x]}}\right]$$

Result (type 5, 68 leaves):

$$-\frac{1}{3\left(\text{Sin}[x]^2\right)^{3/4}} 2\sqrt{\text{Cos}[x]}\ \sqrt{\text{Sin}[x]}\ \left(3\,\text{Hypergeometric2F1}\left[\frac{1}{4}, \frac{1}{4}, \frac{5}{4}, \text{Cos}[x]^2\right] \text{Sin}[x] + \text{Cos}[x]\ \text{Hypergeometric2F1}\left[\frac{3}{4}, \frac{3}{4}, \frac{7}{4}, \text{Cos}[x]^2\right] \sqrt{\text{Sin}[x]^2}\right)$$

Problem 927: Result more than twice size of optimal antiderivative.

$$\int x^5\, \text{Sec}\left[a + b\, x^3\right]^7 \text{Tan}\left[a + b\, x^3\right] dx$$

Optimal (type 3, 110 leaves, 6 steps):

$$-\frac{5\,\text{ArcTanh}\left[\text{Sin}\left[a + b\, x^3\right]\right]}{336\, b^2} + \frac{x^3\, \text{Sec}\left[a + b\, x^3\right]^7}{21\, b} - \frac{5\,\text{Sec}\left[a + b\, x^3\right] \text{Tan}\left[a + b\, x^3\right]}{336\, b^2} - \frac{5\,\text{Sec}\left[a + b\, x^3\right]^3 \text{Tan}\left[a + b\, x^3\right]}{504\, b^2} - \frac{\text{Sec}\left[a + b\, x^3\right]^5 \text{Tan}\left[a + b\, x^3\right]}{126\, b^2}$$

Result (type 3, 352 leaves):

$$\frac{1}{64\,512\, b^2} \text{Sec}\left[a + b\, x^3\right]^7 \left(3072\, b\, x^3 + 105\,\text{Cos}\left[5\left(a + b\, x^3\right)\right] \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] - \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] + 15\,\text{Cos}\left[7\left(a + b\, x^3\right)\right] \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] - \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] + 525\,\text{Cos}\left[a + b\, x^3\right] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] - \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] - \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] + \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right]\right) + 315\,\text{Cos}\left[3\left(a + b\, x^3\right)\right] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] - \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] - \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] + \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right]\right) - 105\,\text{Cos}\left[5\left(a + b\, x^3\right)\right] \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] + \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] - 15\,\text{Cos}\left[7\left(a + b\, x^3\right)\right] \text{Log}\left[\text{Cos}\left[\frac{1}{2}\left(a + b\, x^3\right)\right] + \text{Sin}\left[\frac{1}{2}\left(a + b\, x^3\right)\right]\right] - 566\,\text{Sin}\left[2\left(a + b\, x^3\right)\right] - 200\,\text{Sin}\left[4\left(a + b\, x^3\right)\right] - 30\,\text{Sin}\left[6\left(a + b\, x^3\right)\right]\right)$$

Problem 943: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{\text{Cos}[a+b x]^4-\text{Sin}[a+b x]^4}{\text{Cos}[a+b x]^4+\text{Sin}[a+b x]^4}\,dx$$

Optimal (type 3, 72 leaves, 4 steps):

$$-\frac{\text{Log}\left[1-\sqrt{2}\ \text{Tan}[a+b x]+\text{Tan}[a+b x]^2\right]}{2\sqrt{2}\ b}+\frac{\text{Log}\left[1+\sqrt{2}\ \text{Tan}[a+b x]+\text{Tan}[a+b x]^2\right]}{2\sqrt{2}\ b}$$

Result (type 3, 102 leaves):

$$-\frac{1}{4\left(5\,i+\sqrt{2}\right)b}\,i\left(-2\,i+5\sqrt{2}\right)\left(\text{Log}\left[-1-2\,i\sqrt{2}\ e^{2\,i\,(a+b x)}+e^{4\,i\,(a+b x)}\right]-\text{Log}\left[-1+2\,i\sqrt{2}\ e^{2\,i\,(a+b x)}+e^{4\,i\,(a+b x)}\right]\right)$$

Problem 945: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[a+b x]^2-\text{Sin}[a+b x]^2}{\text{Cos}[a+b x]^2+\text{Sin}[a+b x]^2}\,dx$$

Optimal (type 3, 16 leaves, 6 steps):

$$\frac{\text{Cos}[a+b x]\ \text{Sin}[a+b x]}{b}$$

Result (type 3, 33 leaves):

$$\frac{\text{Cos}[2 b x]\ \text{Sin}[2 a]}{2 b}+\frac{\text{Cos}[2 a]\ \text{Sin}[2 b x]}{2 b}$$

Problem 950: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{-\text{Csc}[a+b x]^4+\text{Sec}[a+b x]^4}{\text{Csc}[a+b x]^4+\text{Sec}[a+b x]^4}\,dx$$

Optimal (type 3, 72 leaves, 4 steps):

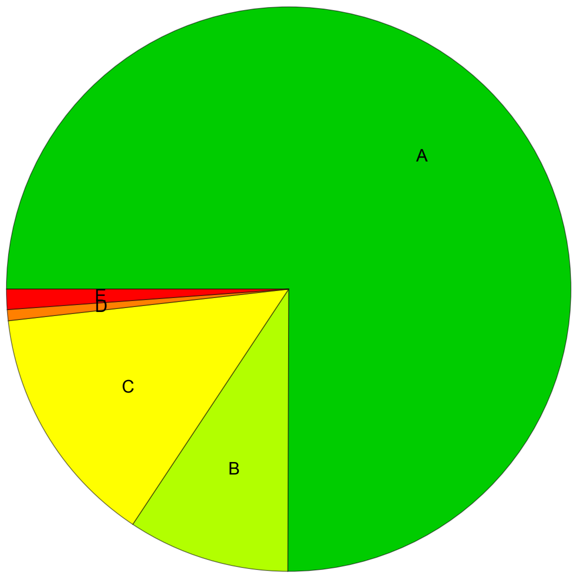
$$\frac{\text{Log}\left[1-\sqrt{2}\ \text{Tan}[a+b x]+\text{Tan}[a+b x]^2\right]}{2\sqrt{2}\ b}-\frac{\text{Log}\left[1+\sqrt{2}\ \text{Tan}[a+b x]+\text{Tan}[a+b x]^2\right]}{2\sqrt{2}\ b}$$

Result (type 3, 102 leaves):

$$\frac{1}{4\left(5\,i+\sqrt{2}\right)b}\,i\left(-2\,i+5\sqrt{2}\right)\left(\text{Log}\left[-1-2\,i\sqrt{2}\ e^{2\,i\,(a+b x)}+e^{4\,i\,(a+b x)}\right]-\text{Log}\left[-1+2\,i\sqrt{2}\ e^{2\,i\,(a+b x)}+e^{4\,i\,(a+b x)}\right]\right)$$

Summary of Integration Test Results

950 integration problems



A - 713 optimal antiderivatives

B - 88 more than twice size of optimal antiderivatives

C - 132 unnecessarily complex antiderivatives

D - 6 unable to integrate problems

E - 11 integration timeouts